



GOVERNMENT OF UGANDA

MINISTRY OF WATER AND ENVIRONMENT

INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT
PROJECT ID NO. P163782

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA
WATER SUPPLY AND SANITATION SYSTEM

DETAILED ENGINEERING DESIGN REPORT

APPENDIX E: DESIGN DRAWINGS



KAGGA & PARTNERS

JANUARY 2022

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DRAWING LIST

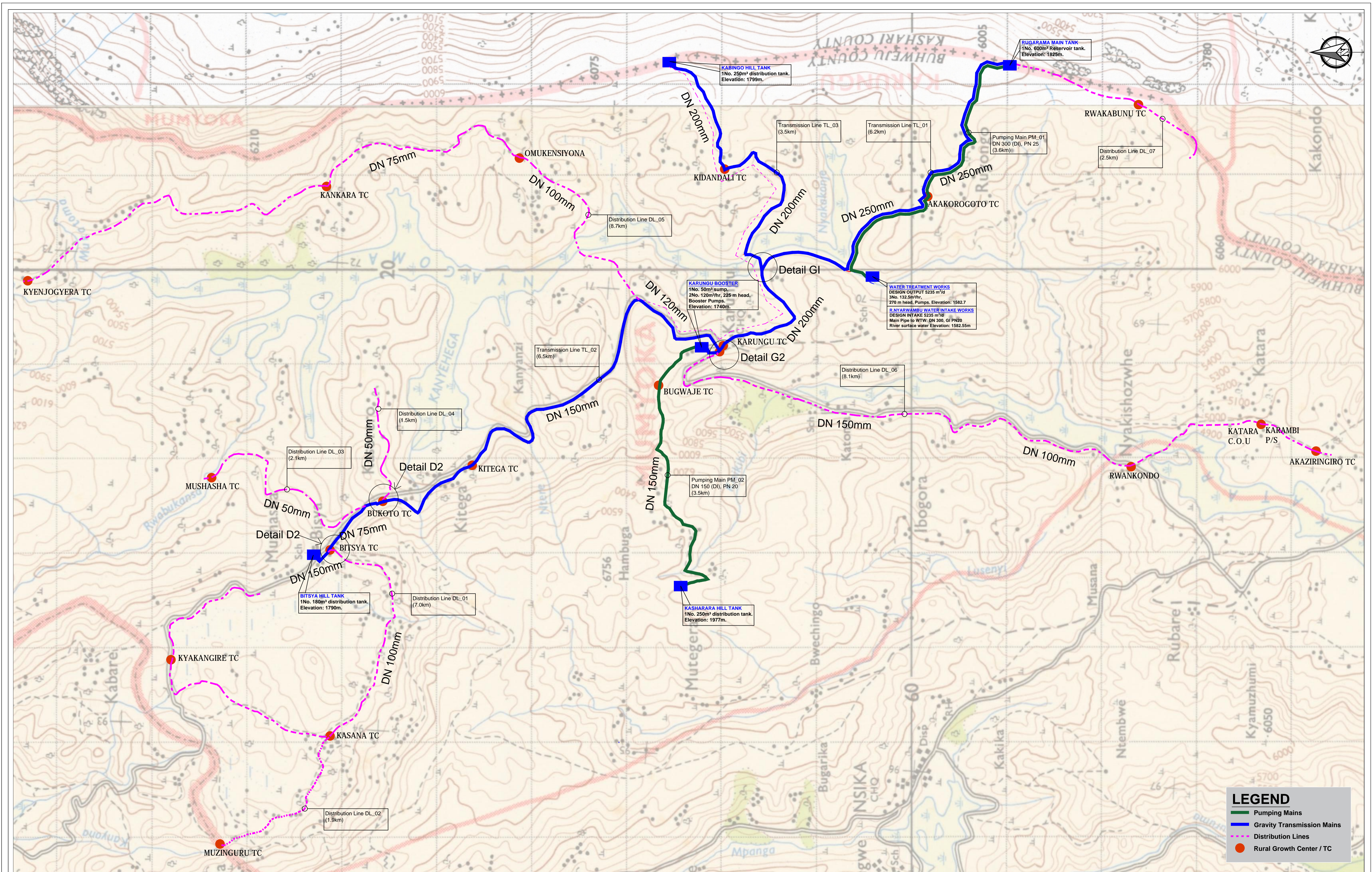
SR. NO.	Dwg. No.	Description	SR. NO.	Dwg. No.	Description
GENERAL LAYOUT DRAWINGS			PUMPING MAINS PLAN AND PROFILES		
1	MWE/BWS/GEN-001	Scheme Layout	36	MWE/BWS/PP/PM01-01	Pumping Main PM_01 Plan & Profile Sheet 1
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2	MWE/BWS/WTW/GEN/01	Proposed Abstraction and Water Treatment Works General Layout	38	MWE/BWS/PP/PM01-03	Pumping Main PM_01 Plan & Profile Sheet 3
3	MWE/BWS/WTW/GEN/02	Proposed Water Treatment Works General Layout	39	MWE/BWS/PP/PM01-04	Pumping Main PM_01 Plan & Profile Sheet 4
4	MWE/BWS/WTW/GEN/03	Proposed Water Treatment Works Site Sections	40	MWE/BWS/PP/PM02-01	Pumping Main PM_02 Plan & Profile Sheet 1
5	MWE/BWS/WTW/GEN/04	Proposed Water Treatment Works Access Road Plan & profile	41	MWE/BWS/PP/PM02-02	Pumping Main PM_02 Plan & Profile Sheet 2
6	MWE/BWS/WTW/GEN/05	Proposed Water Treatment Works Access Road Cross Sections	42	MWE/BWS/PP/PM02-03	Pumping Main PM_02 Plan & Profile Sheet 3
7	MWE/BWS/WTW/AE-01	Aerator Plan and Section	43	MWE/BWS/PP/PM02-04	Pumping Main PM_02 Plan & Profile Sheet 4
8	MWE/BWS/WTW/AE-02	Aerator Structural Details	TRANSMISSION MAINS PLAN AND PROFILES		
9	MWE/BWS/WTW/FL-01	Floculator and Coagulator Plan	44	MWE/BWS/PP/TL01-01	Transmission Line TL_01 Plan & Profile Sheet 1
10	MWE/BWS/WTW/FL-02	Floculator and Coagulator Sections	45	MWE/BWS/PP/TL01-02	Transmission Line TL_01 Plan & Profile Sheet 2
11	MWE/BWS/WTW/FL-03	Floculator and Coagulator Section C-C	46	MWE/BWS/PP/TL01-03	Transmission Line TL_01 Plan & Profile Sheet 3
12	MWE/BWS/WTW/FL-04	Floculator and Coagulator Structural Details	47	MWE/BWS/PP/TL01-04	Transmission Line TL_01 Plan & Profile Sheet 4
13	MWE/BWS/WTW/CL-01	Clarifier Plan	48	MWE/BWS/PP/TL01-05	Transmission Line TL_01 Plan & Profile Sheet 5
14	MWE/BWS/WTW/CL-02	Clarifier Sections	49	MWE/BWS/PP/TL01-06	Transmission Line TL_01 Plan & Profile Sheet 6
15	MWE/BWS/WTW/CL-03	Clarifier Structural Layout Details	50	MWE/BWS/PP/TL01-07	Transmission Line TL_01 Plan & Profile Sheet 7
16	MWE/BWS/WTW/CL-04	Clarifier Structural Details (Sections)	51	MWE/BWS/PP/TL02-01	Transmission Line TL_02 Plan & Profile Sheet 1
17	MWE/BWS/WTW/SF-01	Rapid Sand Filters Plan and Sections	52	MWE/BWS/PP/TL02-02	Transmission Line TL_02 Plan & Profile Sheet 2
18	MWE/BWS/WTW/SF-02	Rapid Sand Filters Structural Details	53	MWE/BWS/PP/TL02-03	Transmission Line TL_02 Plan & Profile Sheet 3
19	MWE/BWS/WTW/WT-01	Clear Water Tank Plan and Section	54	MWE/BWS/PP/TL02-04	Transmission Line TL_02 Plan & Profile Sheet 4
20	MWE/BWS/WTW/WT-02	Clear Water Tank Structural Details-01	55	MWE/BWS/PP/TL02-05	Transmission Line TL_02 Plan & Profile Sheet 5
21	MWE/BWS/WTW/WT-03	Clear Water Tank Structural Details-02	56	MWE/BWS/PP/TL02-06	Transmission Line TL_02 Plan & Profile Sheet 6
22	MWE/BWS/WTW/SD-01	Sludge Drying Beds Details	57	MWE/BWS/PP/TL02-07	Transmission Line TL_02 Plan & Profile Sheet 7
23	MWE/BWS/WTW/SD-02	Sludge Drying Structural Details	58	MWE/BWS/PP/TL03-01	Transmission Line TL_03 Plan & Profile Sheet 1
24	MWE/BWS/WTW/AD-01	Alum Dozing Unit Details	59	MWE/BWS/PP/TL03-02	Transmission Line TL_03 Plan & Profile Sheet 2
25	MWE/BWS/WTW/CD-01	Chlorine Dozing Unit Details	60	MWE/BWS/PP/TL03-03	Transmission Line TL_03 Plan & Profile Sheet 3
26	MWE/BWS/WTW/PH-01	Raw and Treated Water Pump House Plan	61	MWE/BWS/PP/TL03-04	Transmission Line TL_03 Plan & Profile Sheet 4
27	MWE/BWS/WTW/PH-02	Raw and Treated Water Pump House Elevations and Sections	MAIN DISTRIBUTION LINES PLAN AND PROFILES		
28	MWE/BWS/WTW/PH-03	Karungu Booster Pump House Details	62	MWE/BWS/PP/DL01-01	Distribution Line DL_01 Plan & Profile Sheet 1
29	MWE/BWS/WTW/PH-04	Pump House Pipe work Schematic Details	63	MWE/BWS/PP/DL01-02	Distribution Line DL_01 Plan & Profile Sheet 2
30	MWE/BWS/WTW/ST-01	WTW Administration and Lab Block Details	64	MWE/BWS/PP/DL01-03	Distribution Line DL_01 Plan & Profile Sheet 3
31	MWE/BWS/WTW/ST-02	WTW Attendant's Accomodation Block Details	65	MWE/BWS/PP/DL01-04	Distribution Line DL_01 Plan & Profile Sheet 4
32	MWE/BWS/WTW/ST-03	WTW Administration and Lab Block Foundation & Ring beam details	66	MWE/BWS/PP/DL01-05	Distribution Line DL_01 Plan & Profile Sheet 5
33	MWE/BWS/WTW/ST-04	WTW Administration and Lab Block Roof Truss details	67	MWE/BWS/PP/DL01-06	Distribution Line DL_01 Plan & Profile Sheet 6
34	MWE/BWS/WTW/ST-05	WTW Administration and Lab Block Additional Truss details	68	MWE/BWS/PP/DL01-07	Distribution Line DL_01 Plan & Profile Sheet 7
35	MWE/BWS/WTW/ST-06	WTW Attendant's Accomodation Foundation and Roof Truss Details	69	MWE/BWS/PP/DL02-01	Distribution Line DL_02 Plan & Profile Sheet 1

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DRAWING LIST

SR. NO.	Dwg. No.	Description	SR. NO.	Dwg. No.	Description
MAIN DISTRIBUTION LINES PLAN AND PROFILES - CONTINUED			STORAGE RESERVOIR SITES		
70	MWE/BWS/PP/DL02-02	Distribution Line DL_02 Plan & Profile Sheet 2	101	MWE/BWS/SR/01	Main Storage Reservoir Site Layout
71	MWE/BWS/PP/DL03-01	Distribution Line DL_03 Plan & Profile Sheet 1	102	MWE/BWS/SR/02	Kibingo Storage Tank Site Layout
72	MWE/BWS/PP/DL03-02	Distribution Line DL_03 Plan & Profile Sheet 2	103	MWE/BWS/SR/03	Bisya Storage Tank Site Layout
73	MWE/BWS/PP/DL03-03	Distribution Line DL_03 Plan & Profile Sheet 3	104	MWE/BWS/SR/04	Kasharara Storage Tank Site Layout
74	MWE/BWS/PP/DL04-01	Distribution Line DL_04 Plan & Profile Sheet 1	105	MWE/BWS/SR/05	Karungu Booster Station and Water Office Site Layout
75	MWE/BWS/PP/DL04-02	Distribution Line DL_04 Plan & Profile Sheet 2	106	MWE/BWS/SR/06	Typical Pressed Steel Tank Drawing
76	MWE/BWS/PP/DL05-01	Distribution Line DL_05 Plan & Profile Sheet 1	107	MWE/BWS/SR/07	Main water tank, Plan section and Elevation
77	MWE/BWS/PP/DL05-02	Distribution Line DL_05 Plan & Profile Sheet 2	108	MWE/BWS/SR/08	Main water tank Base slab Plan
78	MWE/BWS/PP/DL05-03	Distribution Line DL_05 Plan & Profile Sheet 3	109	MWE/BWS/SR/09	Kabingo water tank Plan section and Elevation
79	MWE/BWS/PP/DL05-04	Distribution Line DL_05 Plan & Profile Sheet 4	110	MWE/BWS/SR/10	Kabingo water tank Base slab Plan
MAIN DISTRIBUTION LINES PLAN AND PROFILES			111	MWE/BWS/SR/11	Bistya water tank Plan section and Elevation
80	MWE/BWS/PP/DL05-05	Distribution Line DL_05 Plan & Profile Sheet 5	112	MWE/BWS/SR/12	Bistya water tank Base slab Plan
81	MWE/BWS/PP/DL05-06	Distribution Line DL_05 Plan & Profile Sheet 6	113	MWE/BWS/SR/13	Kasharara water tank Plan section and Elevation
82	MWE/BWS/PP/DL05-07	Distribution Line DL_05 Plan & Profile Sheet 7	114	MWE/BWS/SR/14	Kasharara water tank Base slab Plan
83	MWE/BWS/PP/DL05-08	Distribution Line DL_05 Plan & Profile Sheet 8	ANCILLARY WORKS DRAWINGS		
84	MWE/BWS/PP/DL05-09	Distribution Line DL_05 Plan & Profile Sheet 9	115	MWE/BWS/JD-01	Details at Major Pipe Junctions
85	MWE/BWS/PP/DL05-10	Distribution Line DL_05 Plan & Profile Sheet 10	116	MWE/BWS/SD-01	Air Valve and Water Meter Chamber Standard Details
86	MWE/BWS/PP/DL05-11	Distribution Line DL_05 Plan & Profile Sheet 11	117	MWE/BWS/SD-02	Anchor Block Standard Details
87	MWE/BWS/PP/DL05-12	Distribution Line DL_05 Plan & Profile Sheet 12	118	MWE/BWS/SD-03	Chainlink Fence and Gate Standard Details
88	MWE/BWS/PP/DL05-13	Distribution Line DL_05 Plan & Profile Sheet 13	119	MWE/BWS/SD-04	Pipe Marker Post Standard Details
89	MWE/BWS/PP/DL06-01	Distribution Line DL_06 Plan & Profile Sheet 1	120	MWE/BWS/SD-05	Pipe Pedestal Standard Details
90	MWE/BWS/PP/DL06-02	Distribution Line DL_06 Plan & Profile Sheet 2	121	MWE/BWS/SD-06	Public Toilet Details
91	MWE/BWS/PP/DL06-03	Distribution Line DL_06 Plan & Profile Sheet 3	122	MWE/BWS/SD-07	Trenching Details
92	MWE/BWS/PP/DL06-04	Distribution Line DL_06 Plan & Profile Sheet 4	123	MWE/BWS/SD-08	Isolation Valve Chamber Standard Details
93	MWE/BWS/PP/DL06-05	Distribution Line DL_06 Plan & Profile Sheet 5	124	MWE/BWS/SD-09	Washout/Scour Valve Chamber Standard Details
94	MWE/BWS/PP/DL06-06	Distribution Line DL_06 Plan & Profile Sheet 6	125	MWE/BWS/SD-10	Water Office Standard Details
95	MWE/BWS/PP/DL06-07	Distribution Line DL_06 Plan & Profile Sheet 7	SR. NO. WEIR		
96	MWE/BWS/PP/DL06-08	Distribution Line DL_06 Plan & Profile Sheet 8	126	MWE/BWS/WTW/RCW-01	R C WEIR PLAN
97	MWE/BWS/PP/DL06-09	Distribution Line DL_06 Plan & Profile Sheet 9	127	MWE/BWS/WTW/RCW-02	R C WEIR SECTIONS AND ELEVATIONS
98	MWE/BWS/PP/DL07-01	Distribution Line DL_07 Plan & Profile Sheet 1	128	MWE/BWS/WTW/IC-01	INTAKE CHANNEL -BASE SLAB PLAN
99	MWE/BWS/PP/DL07-02	Distribution Line DL_07 Plan & Profile Sheet 2	129	MWE/BWS/WTW/IC-02	INTAKE CHANNEL -BASE SLAB R C DETAILS
100	MWE/BWS/PP/DL07-03	Distribution Line DL_07 Plan & Profile Sheet 3			
SR. NO. VIP toilet					
130	MWE/BWS/VIP	Female			
131	MWE/BWS/VIP	Male			
132	MWE/BWS/VIP	Schedule			

GENERAL LAYOUT DRAWINGS



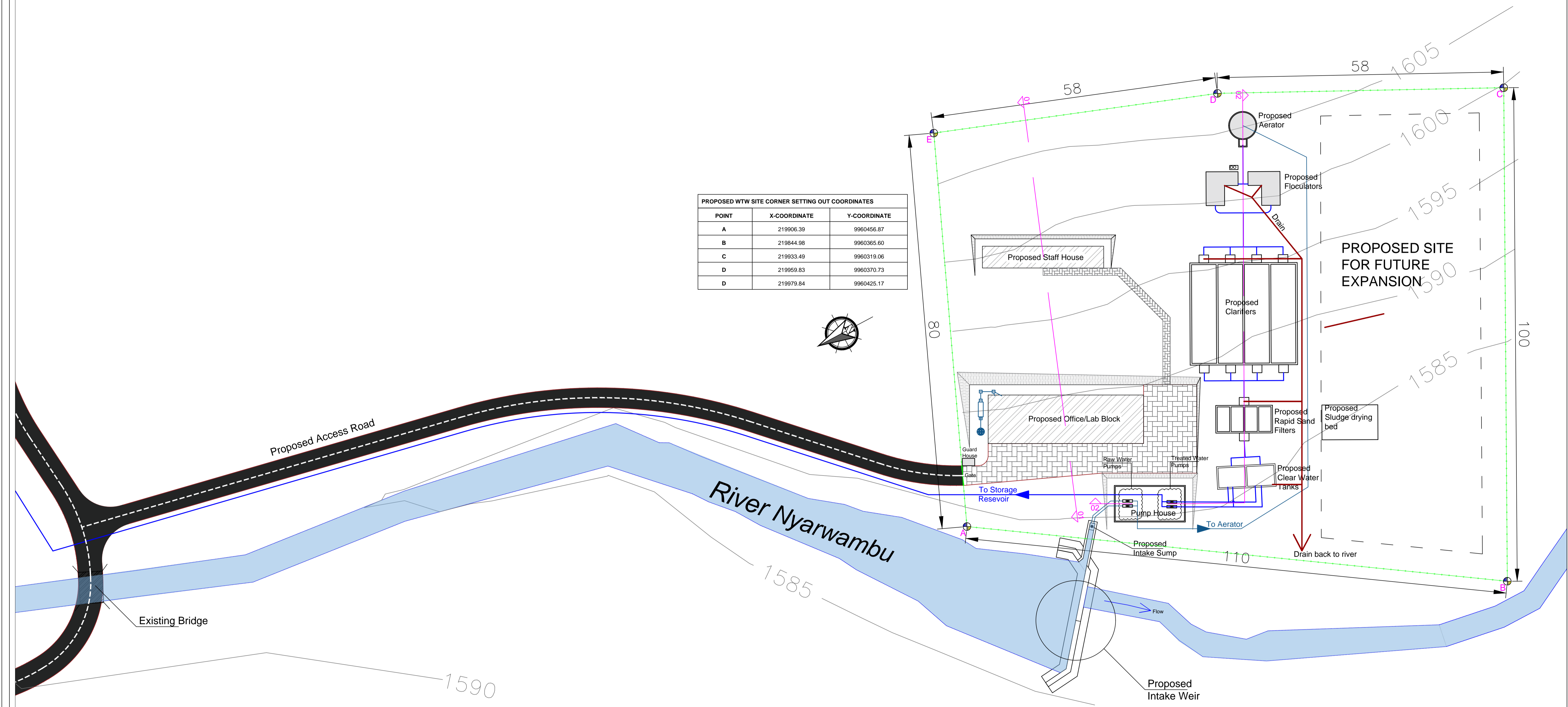
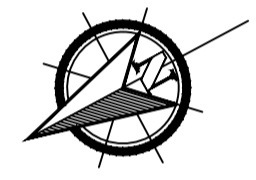
LEGEND

- Pumping Mains
- Gravity Transmission Mains
- - - Distribution Lines
- Rural Growth Center / TC

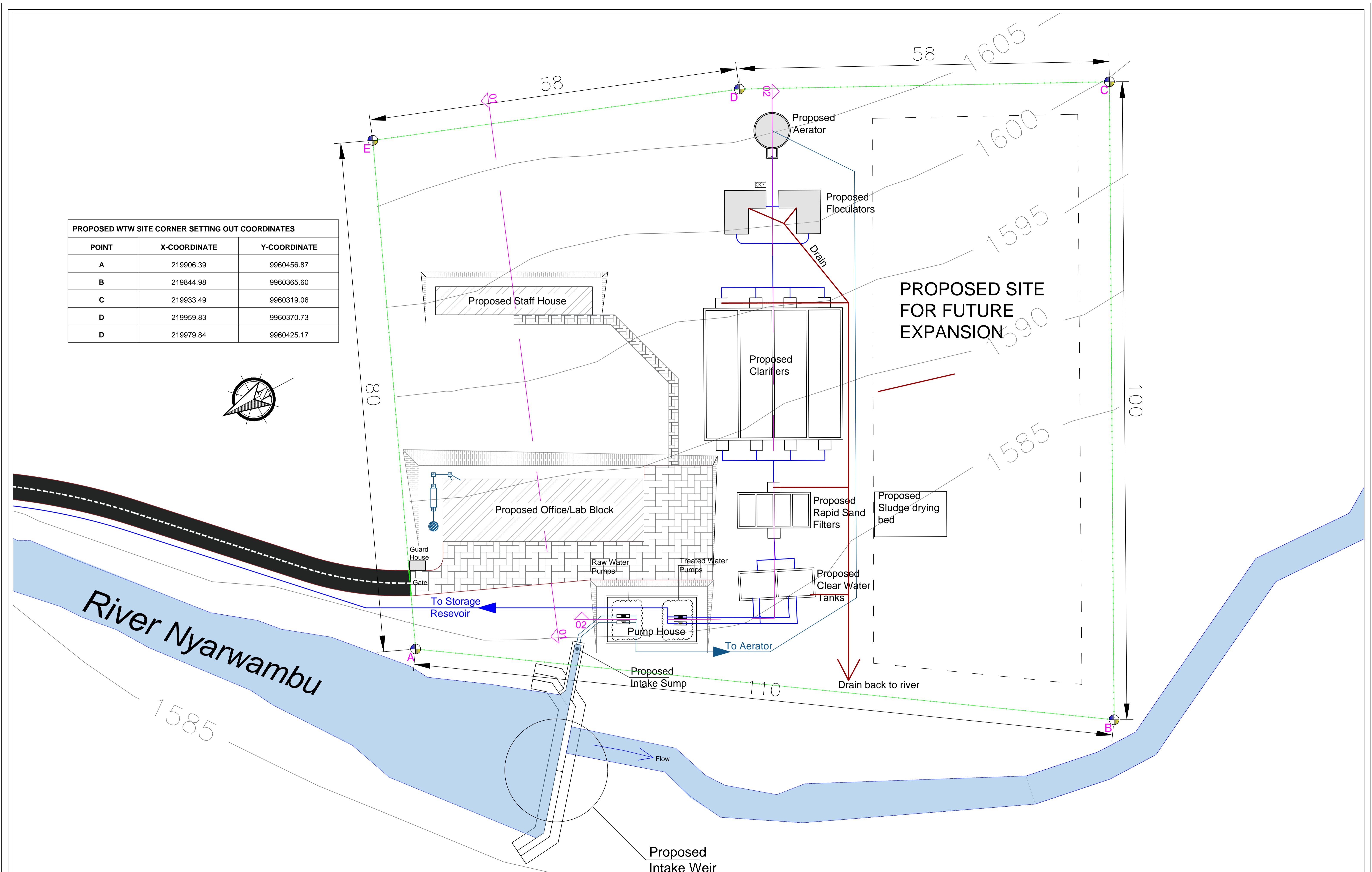
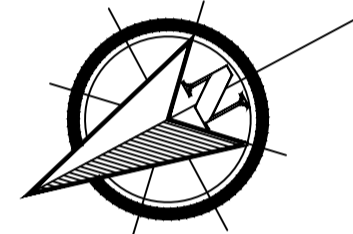
GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	KAGGA & PARTNERS PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.	PROJECT:	CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM	REVISIONS	DATE:	DRAWN BY:	A.A	SCALE:	DATUM	DWG. No.	SHEET
		DWG. TITLE	PROPOSED SCHEME GENERAL LAYOUT			CHECKED BY:	GS	APPROVED BY:	PJM	Vertical: New Khartoum	Horizontal: UTM ZONE 36N ARC 60


WATER TREATMENT WORKS

PROPOSED WTW SITE CORNER SETTING OUT COORDINATES		
POINT	X-COORDINATE	Y-COORDINATE
A	219906.39	9960456.87
B	219844.98	9960365.60
C	219933.49	9960319.06
D	219959.83	9960370.73
D	219979.84	9960425.17



PROPOSED WTW SITE CORNER SETTING OUT COORDINATES		
POINT	X-COORDINATE	Y-COORDINATE
A	219906.39	9960456.87
B	219844.98	9960365.60
C	219933.49	9960319.06
D	219959.83	9960370.73
D	219979.84	9960425.17



GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	KAGGA & PARTNERS  PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.	PROJECT:	CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM				REVISIONS	DATE:	SCALE:	DATUM	DWG. No.	SHEET
		DWG. TITLE	PROPOSED ABSTRACTION AND WATER TREATMENT WORKS GENERAL LAYOUT				DRAWN BY: A.A	CHECKED BY: GS	APPROVED BY: PJM	Vertical: New Khartoum Horizontal: UTM ZONE 36N ARC 60	KP/BWS/WTP/GEN/02	02

Chain Link Boundary fence
See Dwg. no. KP/BWS/WTP/05
for details

AERATOR
Design output: 262m³/h
Dwg. no. KP/BWS/WTP/04
Base Elevation: 1602.8
Inlet Elevation: 1603.3
Outlet Elevation: 1603.5

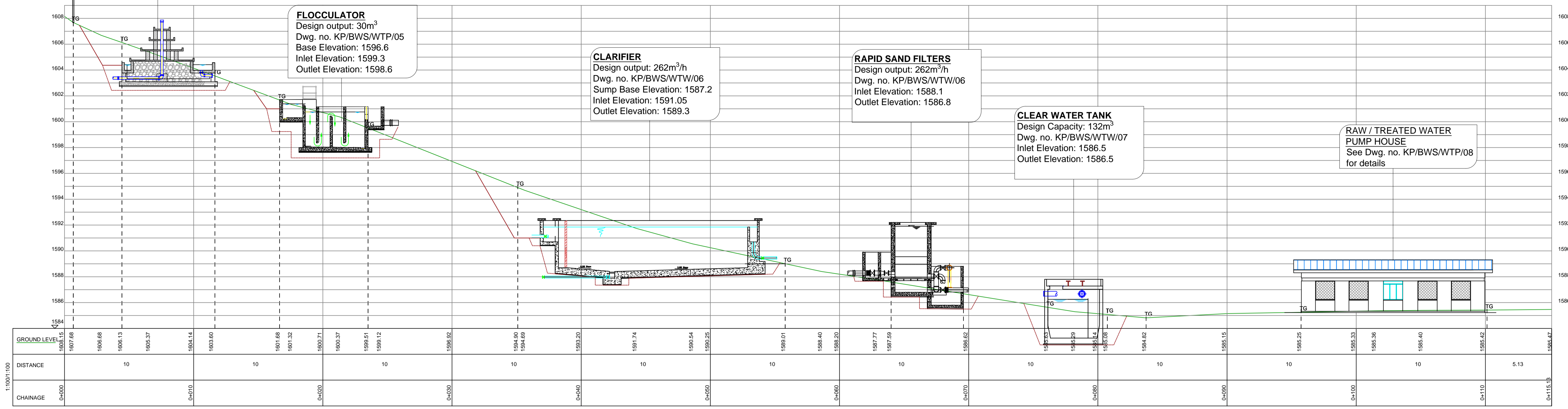
FLOCCULATOR
Design output: 30m³
Dwg. no. KP/BWS/WTP/05
Base Elevation: 1596.6
Inlet Elevation: 1599.3
Outlet Elevation: 1598.6

CLARIFIER
Design output: 262m³/h
Dwg. no. KP/BWS/WTP/06
Sump Base Elevation: 1587.2
Inlet Elevation: 1591.05
Outlet Elevation: 1589.3

RAPID SAND FILTERS
Design output: 262m³/h
Dwg. no. KP/BWS/WTP/06
Inlet Elevation: 1588.1
Outlet Elevation: 1586.8

CLEAR WATER TANK
Design Capacity: 132m³
Dwg. no. KP/BWS/WTP/07
Inlet Elevation: 1586.5
Outlet Elevation: 1586.5

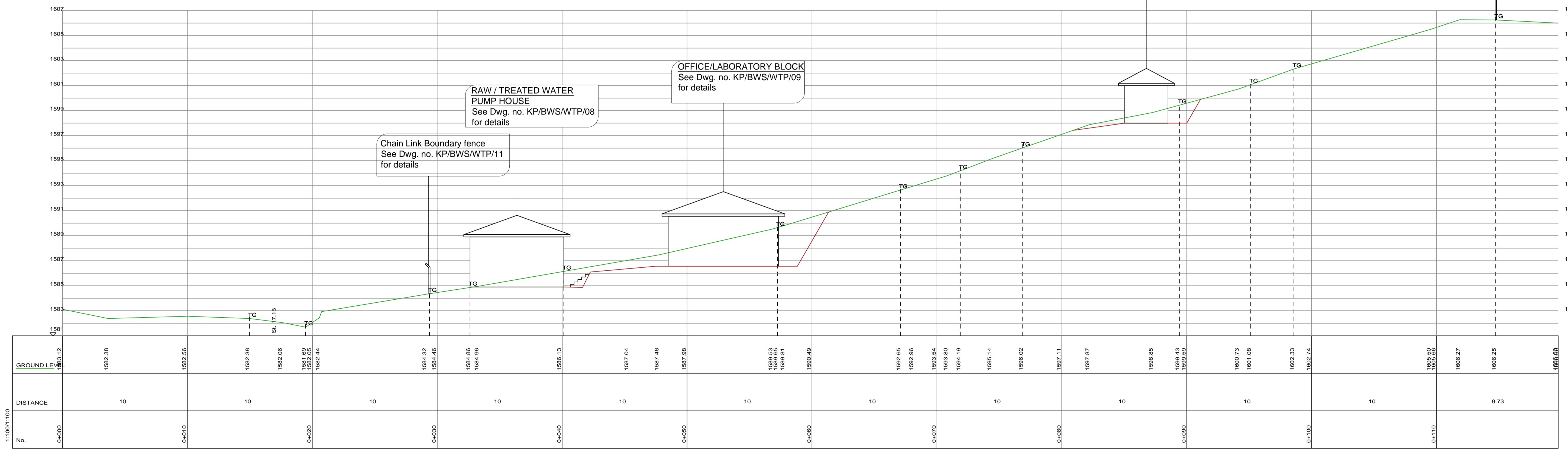
**RAW / TREATED WATER
PUMP HOUSE**
See Dwg. no. KP/BWS/WTP/08
for details



Section 02 THROUGH WATER TREATMENT UNITS

STAFF HOUSE
See Dwg. no. KP/BWS/WTP/10
for details

Chain Link Boundary fence
See Dwg. no. KP/BWS/WTP/11
for details



Section 01 THROUGH SITE STRUCTURES

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:
DWG. TITLE

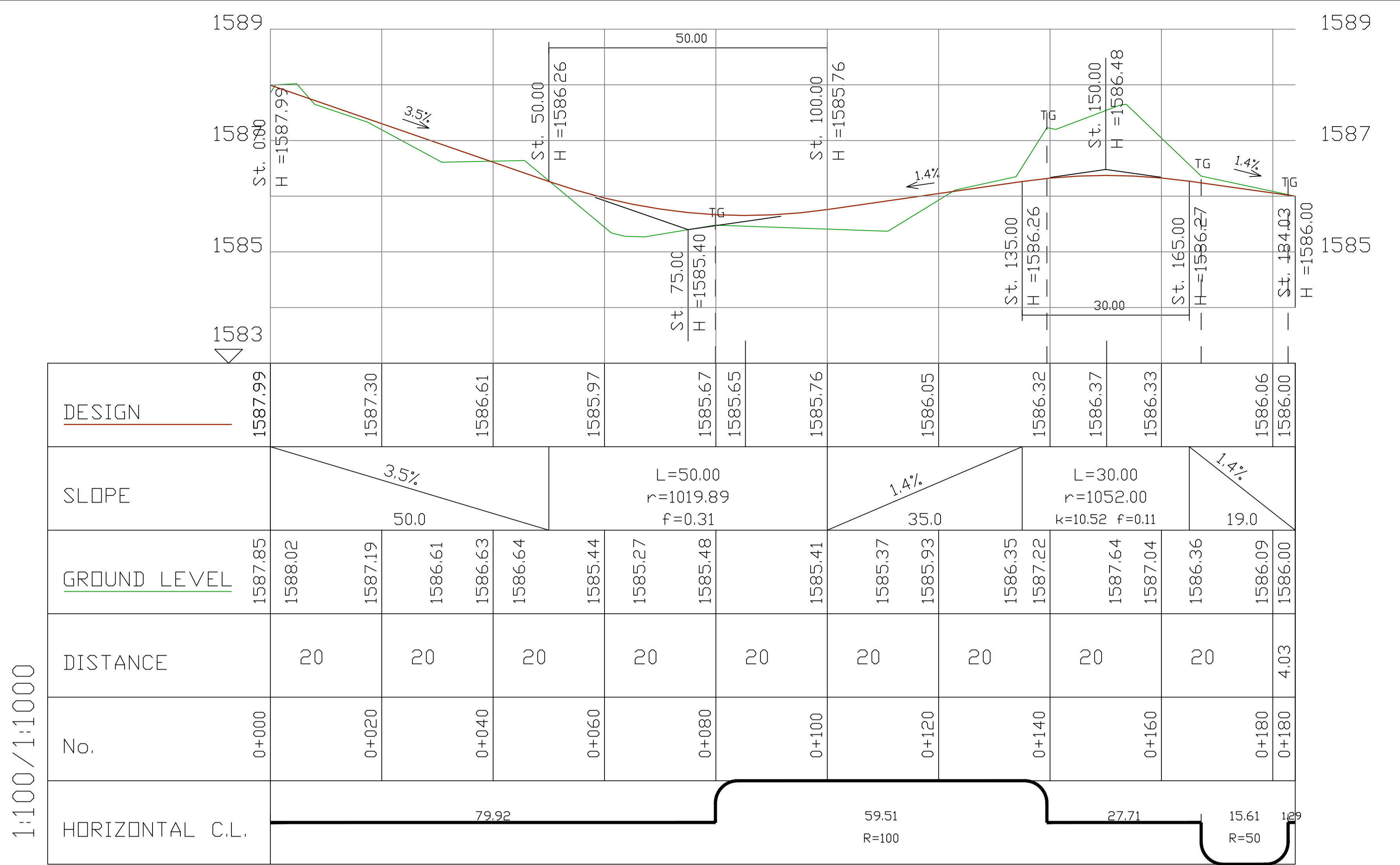
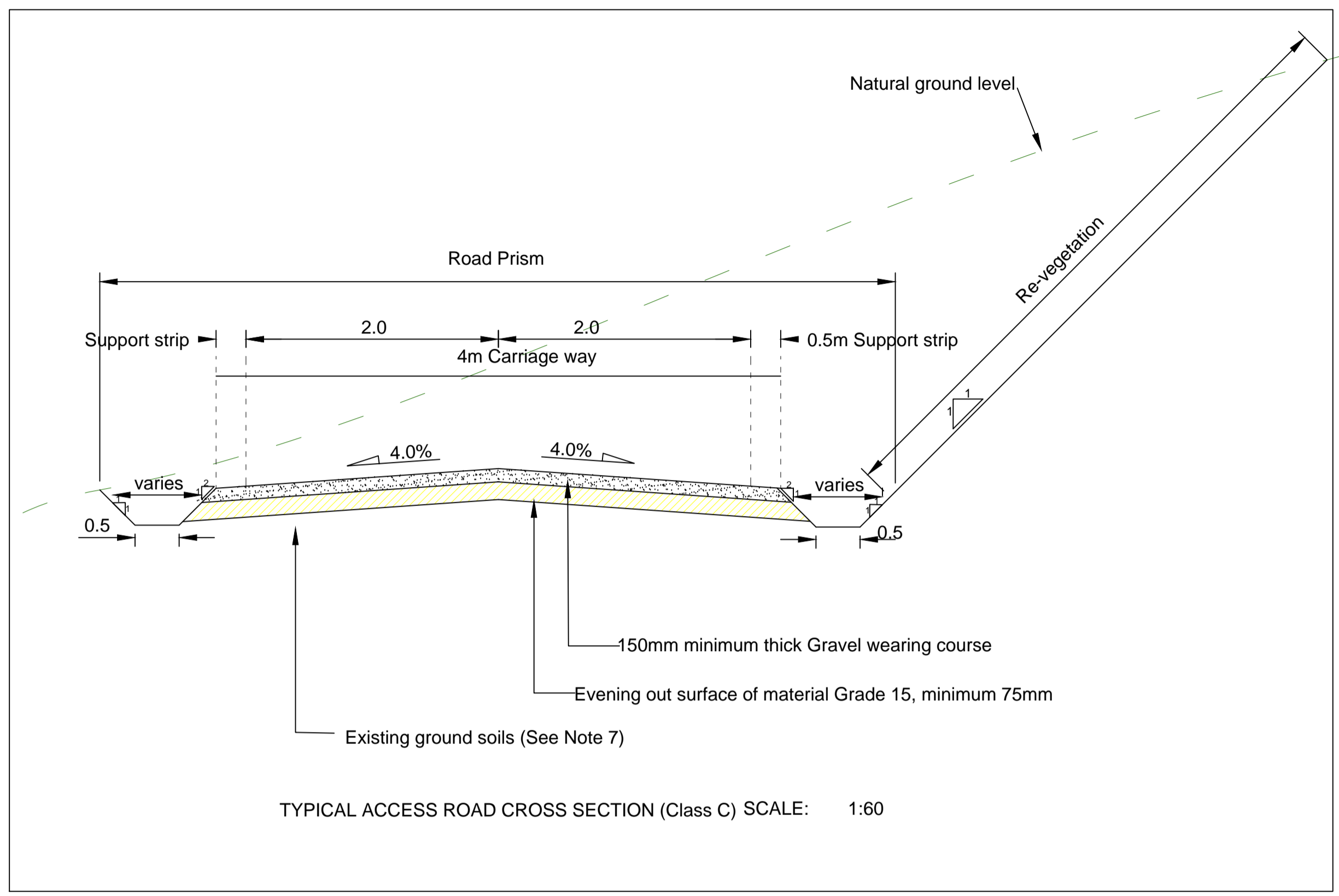
CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
PROPOSED WATER TREATMENT WORKS SITE SECTIONS

REVISIONS
DATE:
DRAWN BY: A.A
CHECKED BY: GS
APPROVED BY: PJM

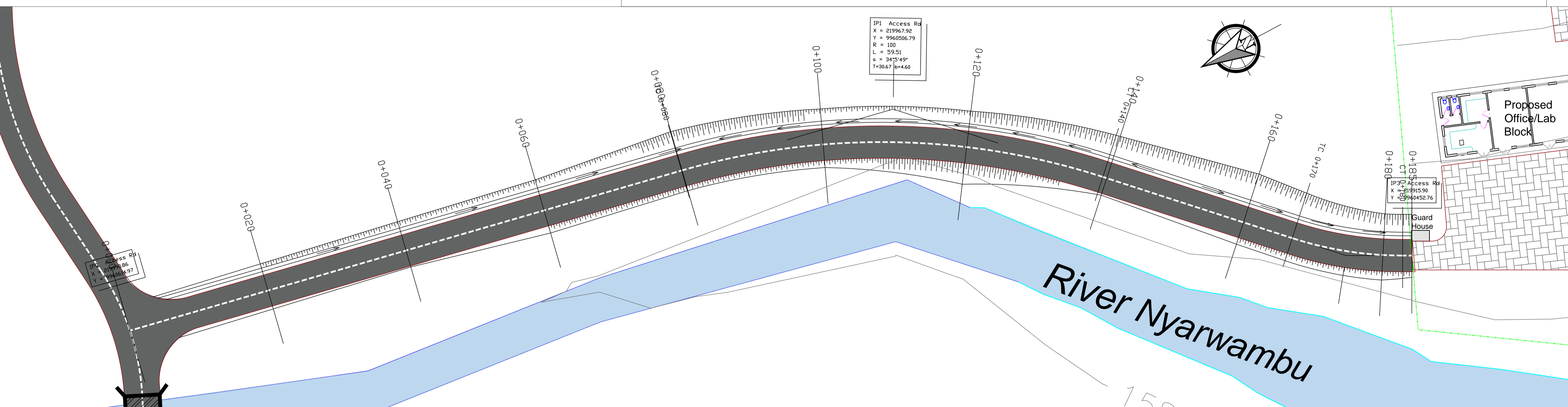
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DATUM
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Horizontal: UTM ZONE 36N ARC 60

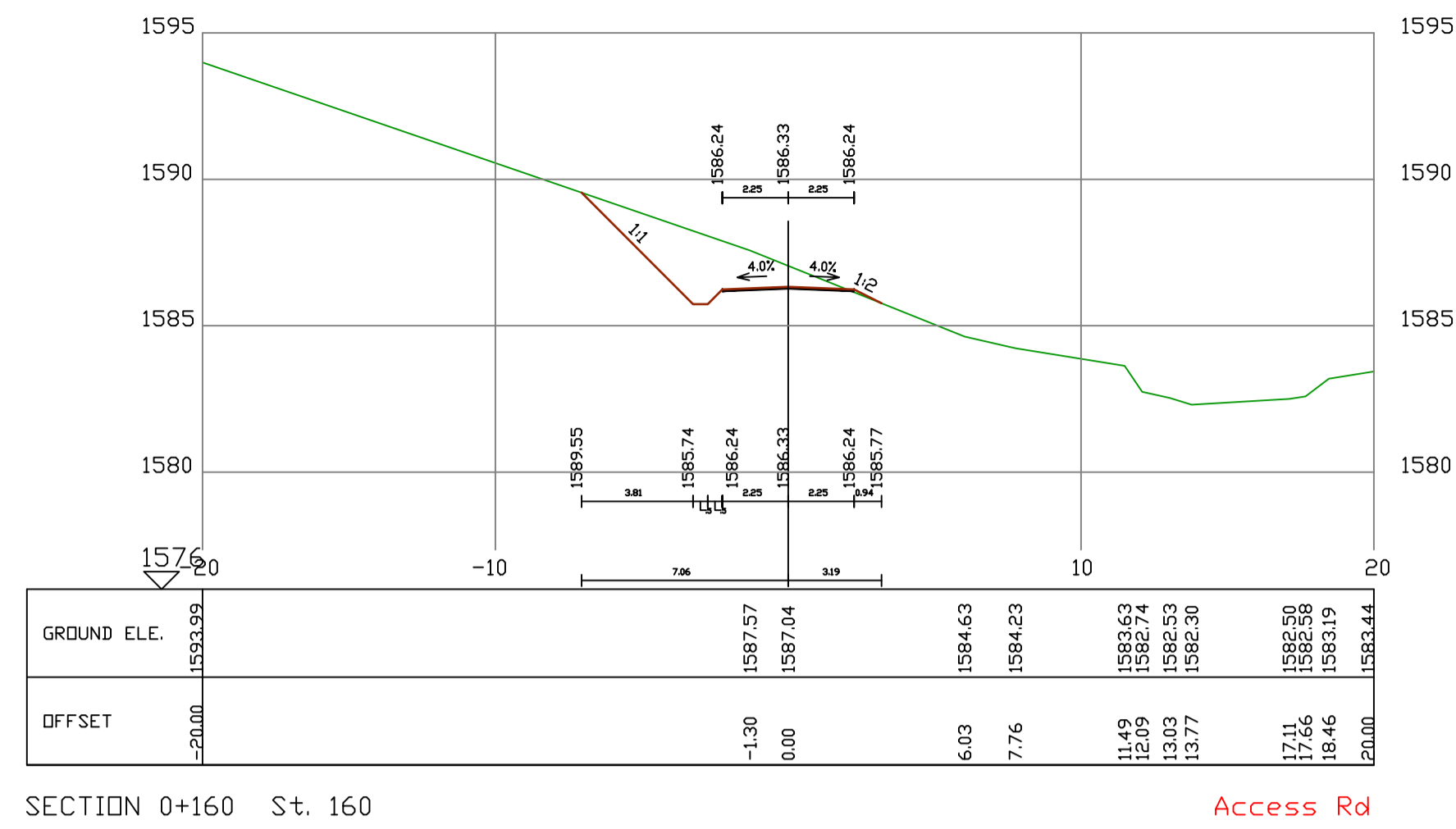
DWG. No.
KP/BWS/WTP/GEN/03

SHEET
03

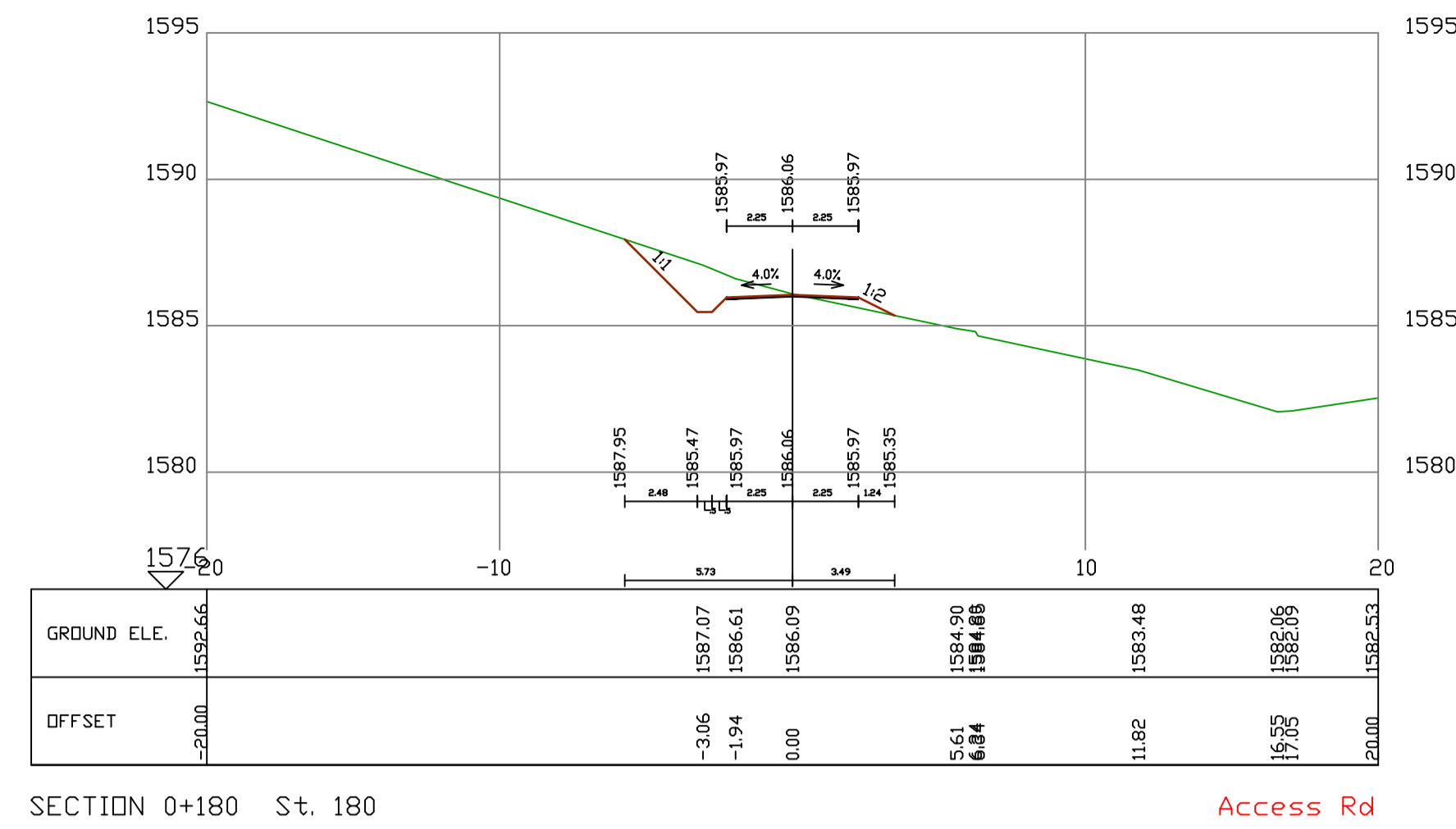


Access Rd Profile

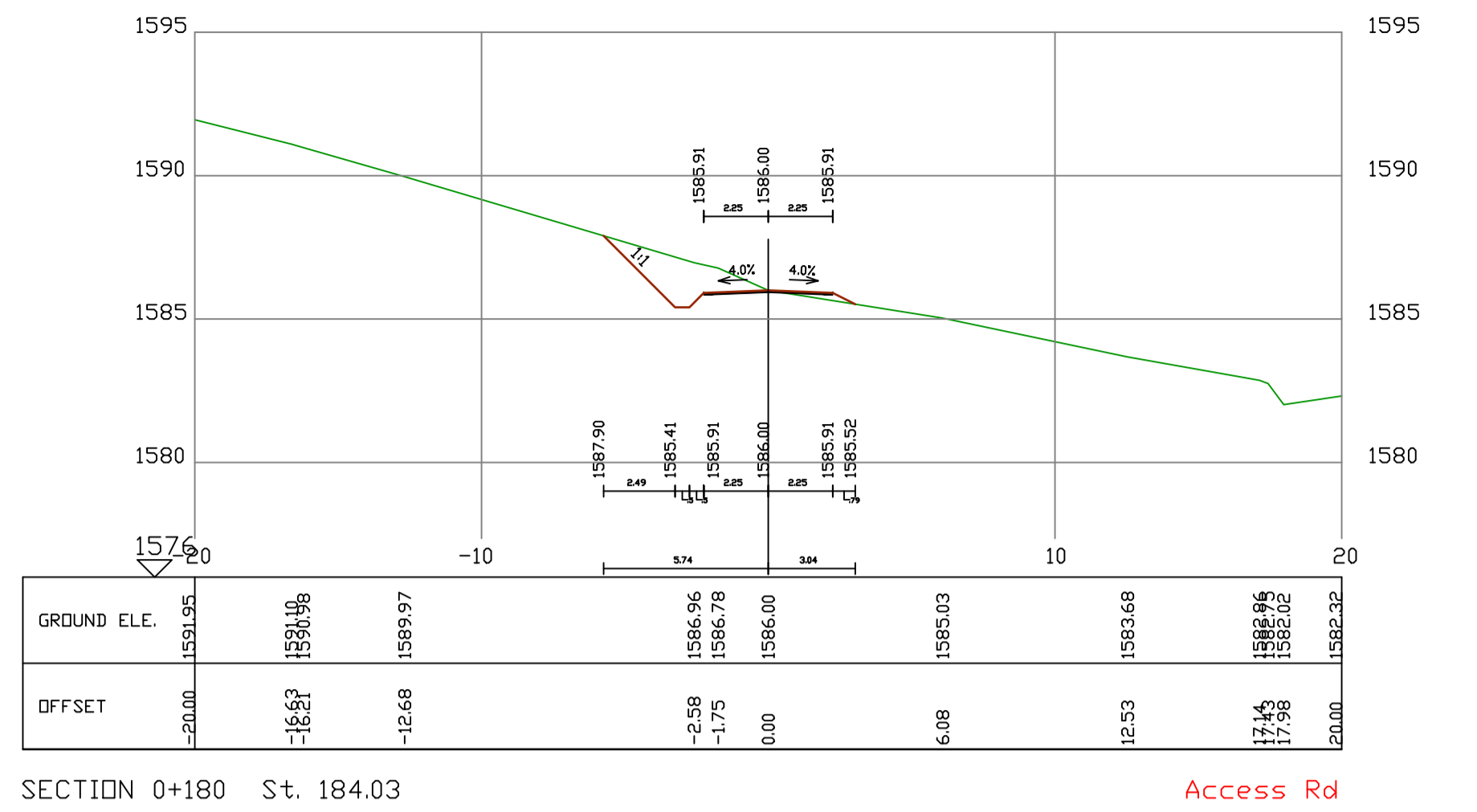




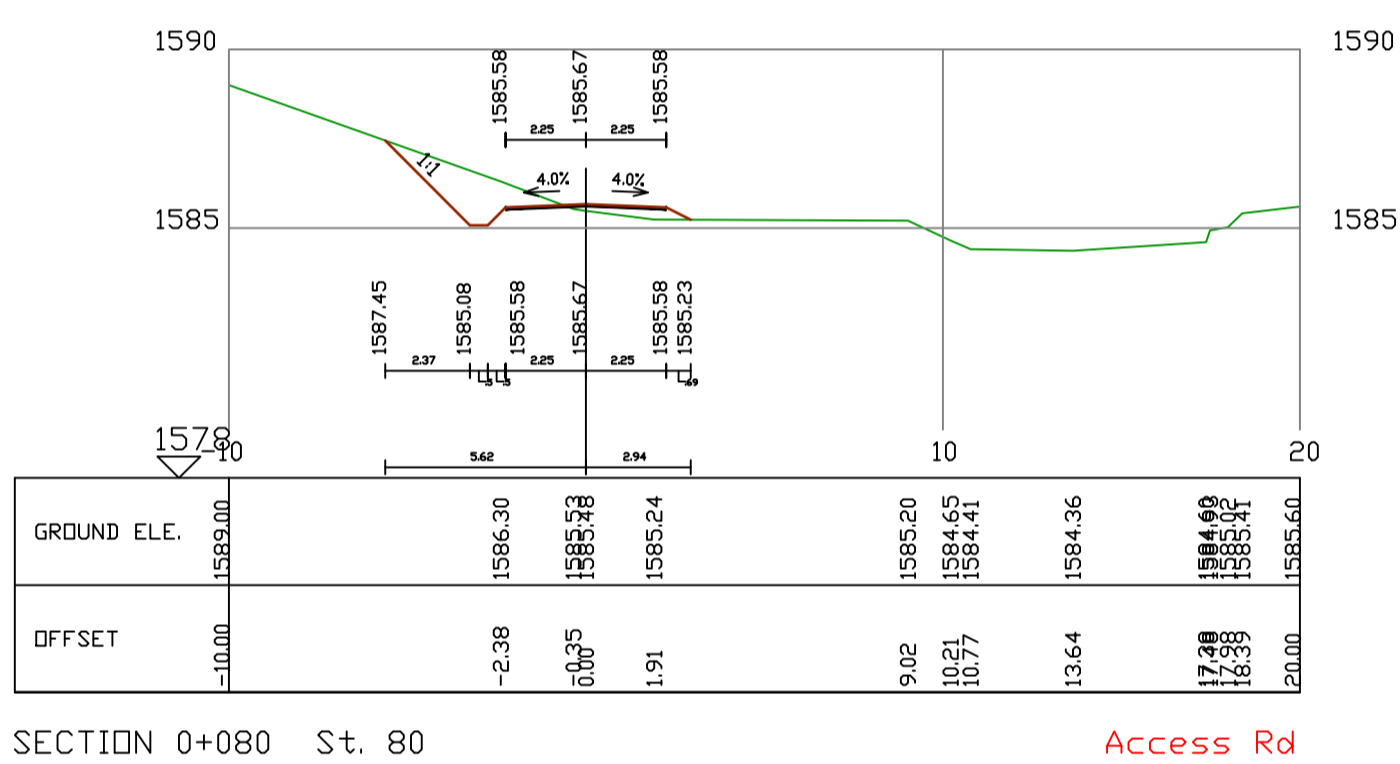
SECTION 0+160 St. 160 Access Rd



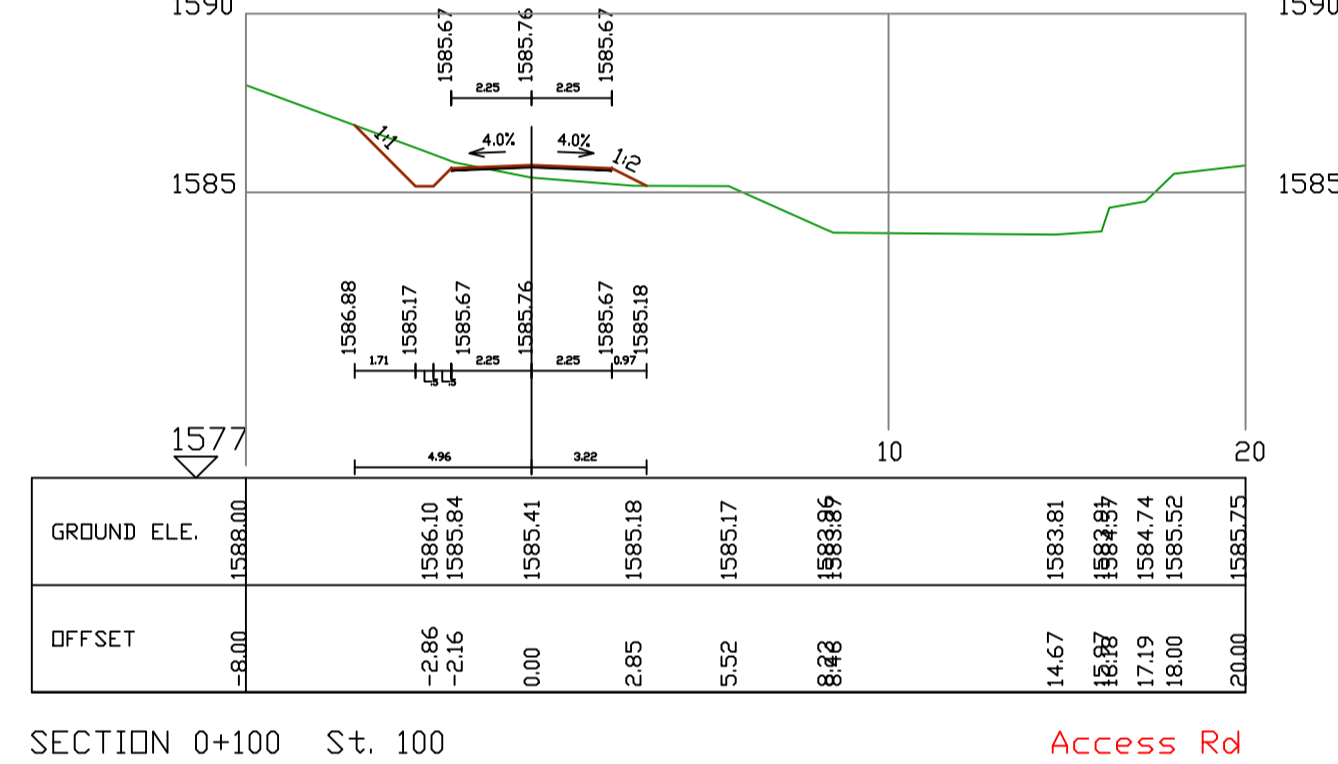
SECTION 0+180 St. 180 Access Rd



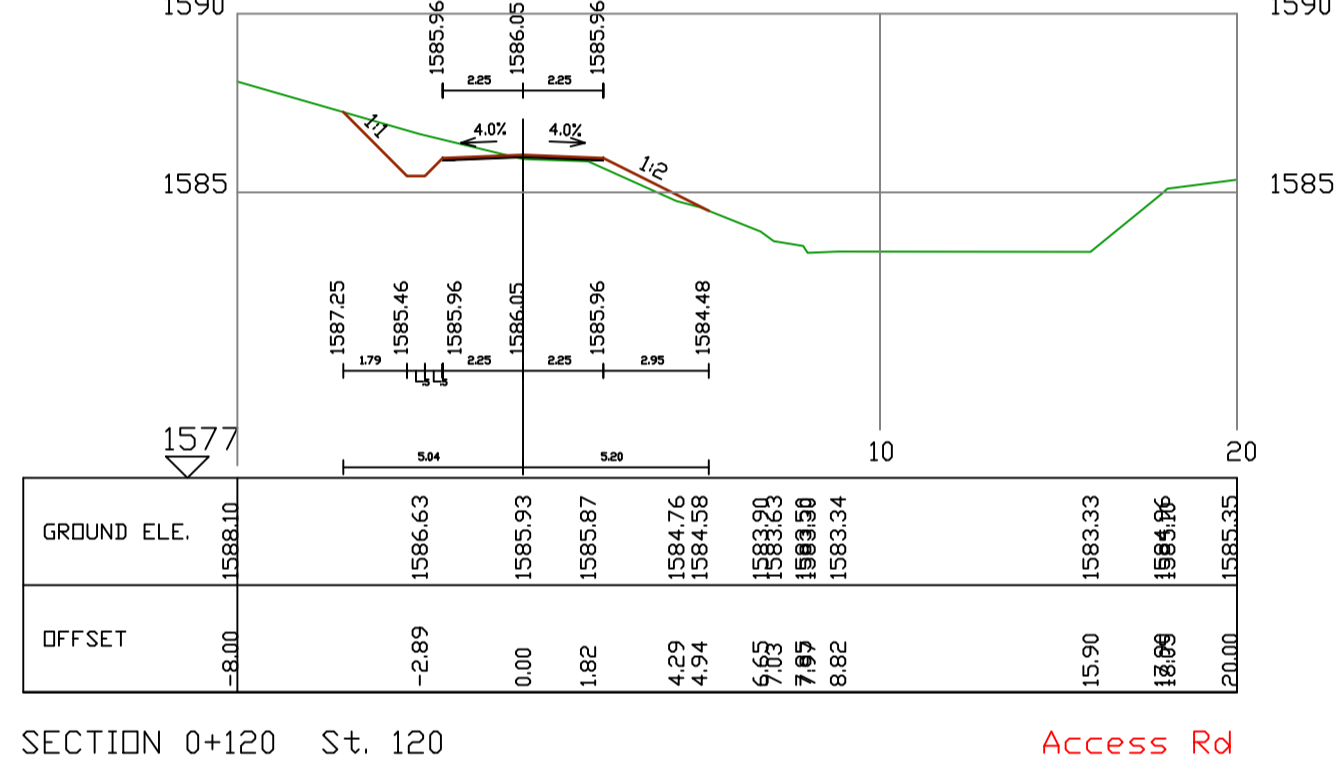
SECTION 0+180 St. 184.03 Access Rd



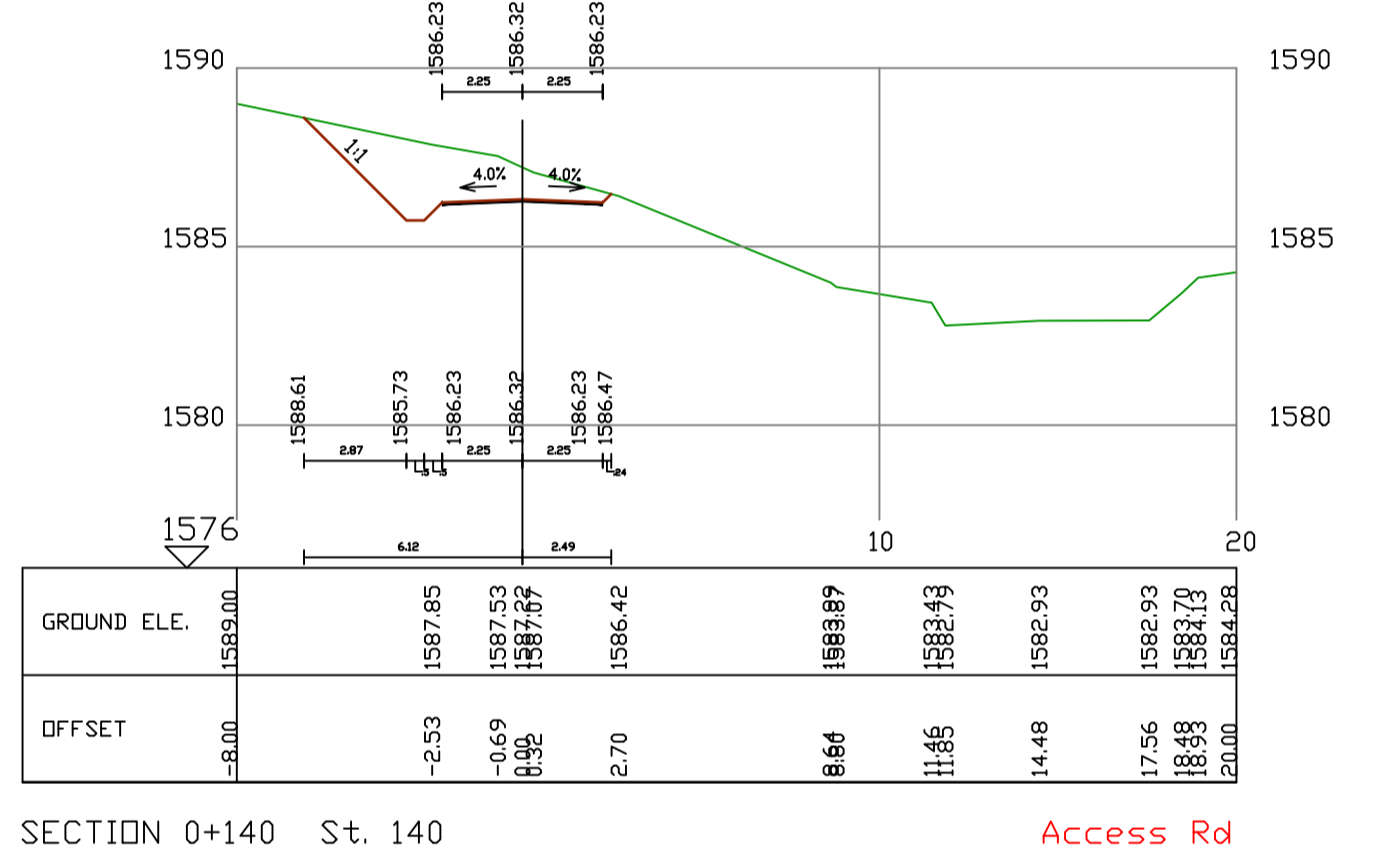
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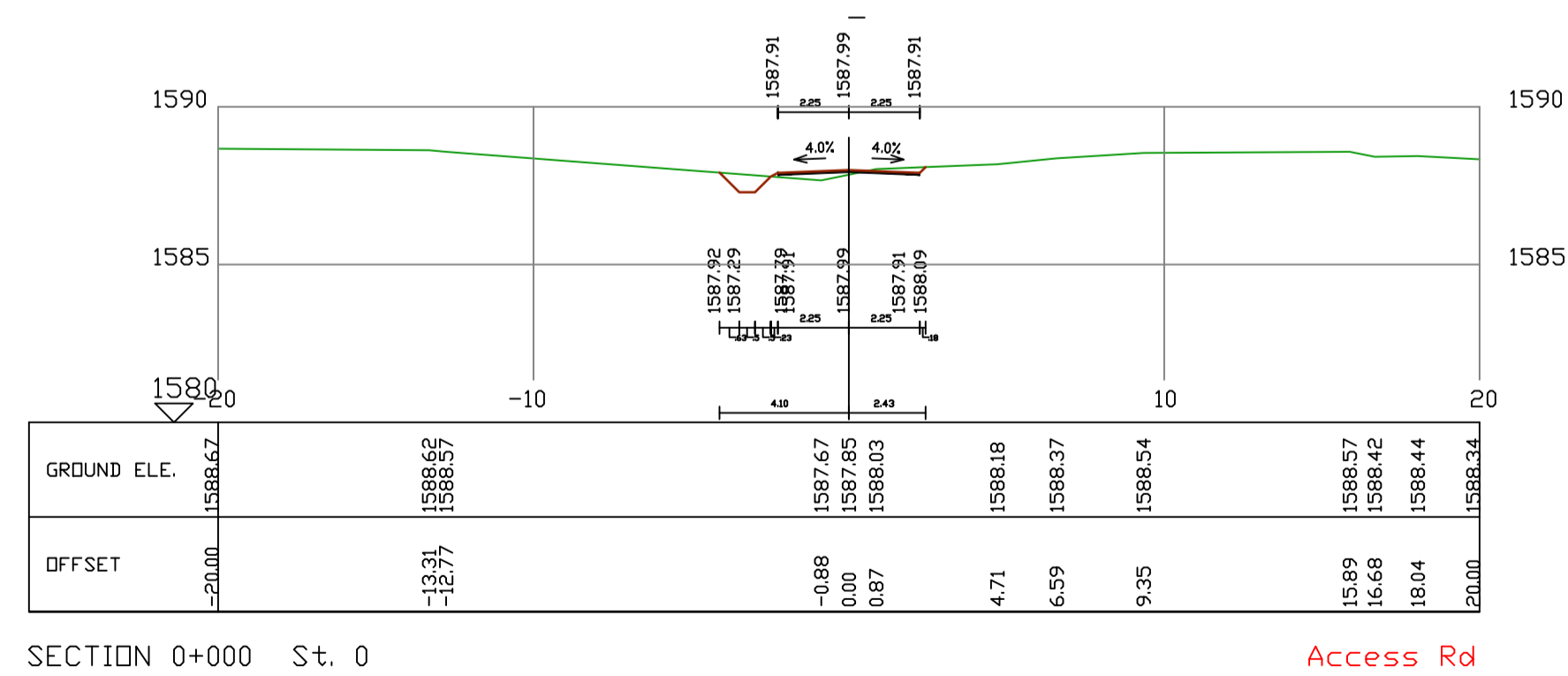
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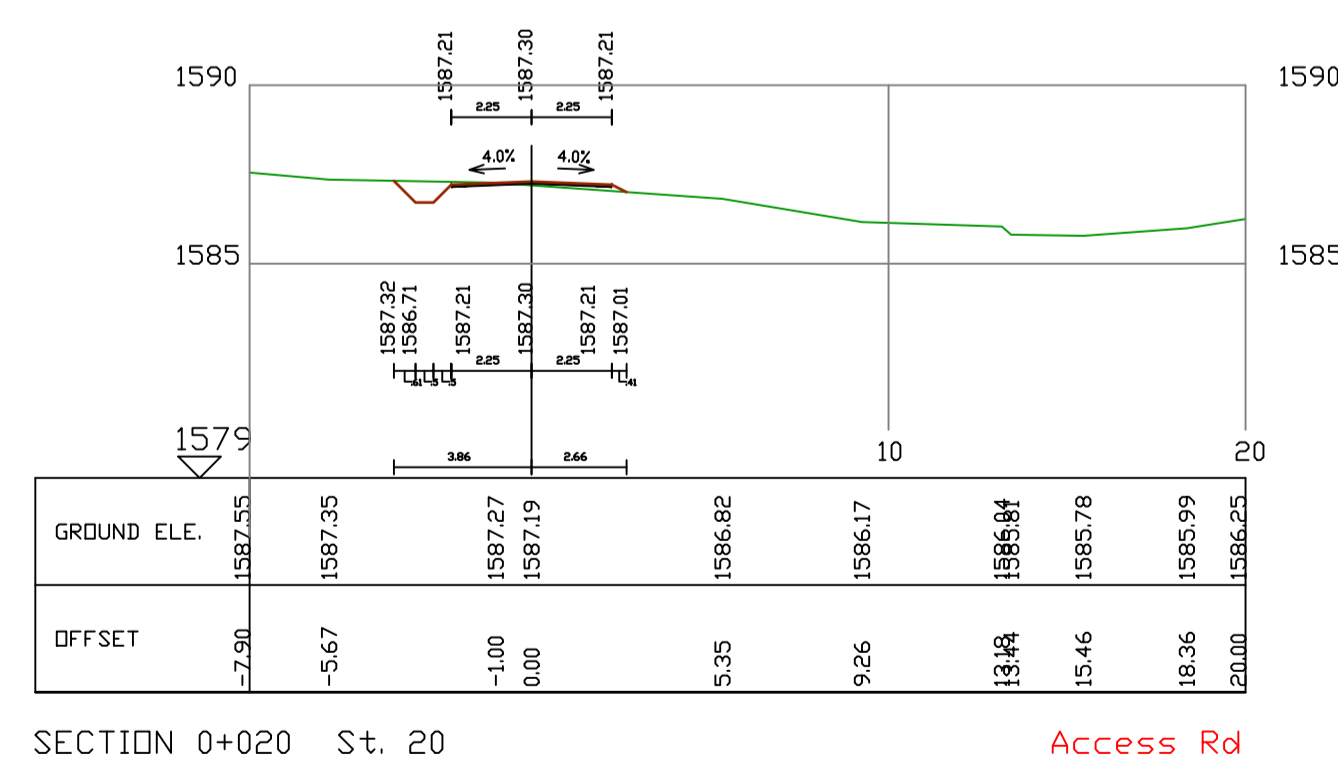
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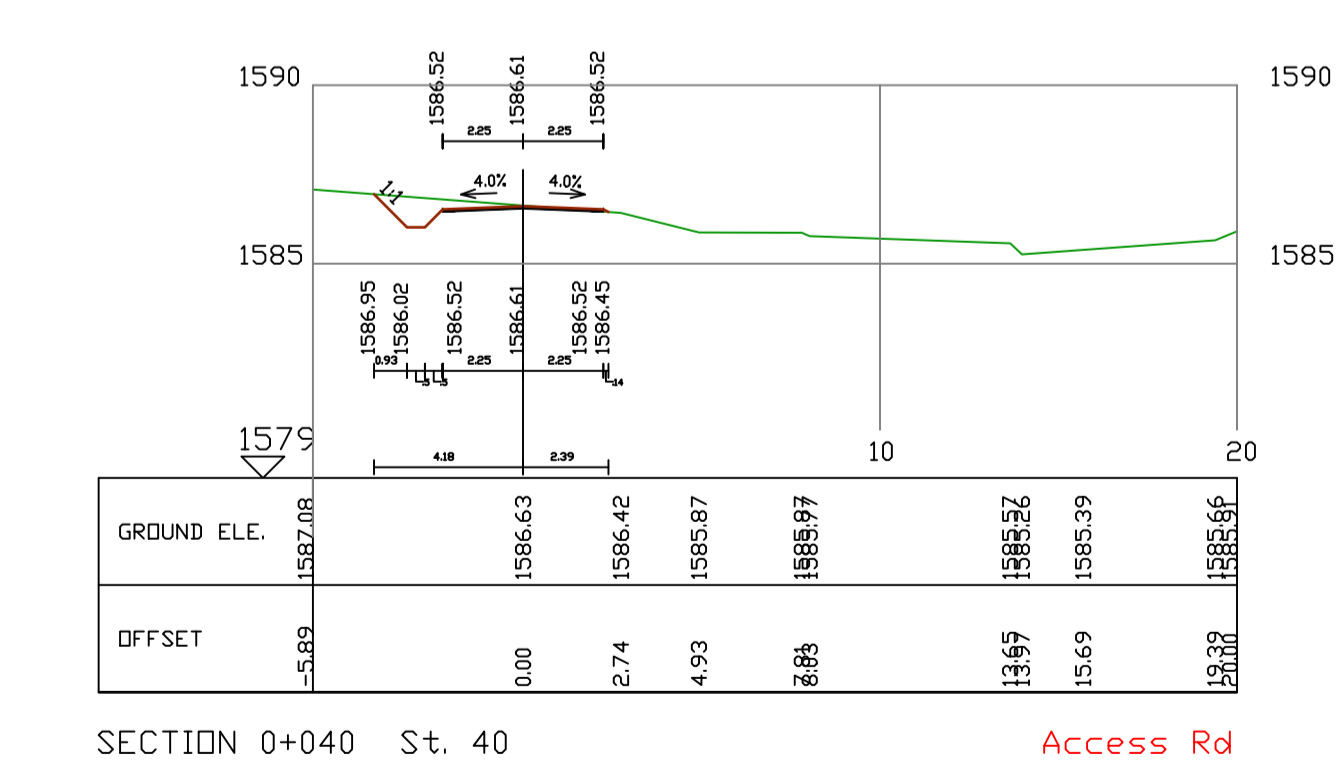
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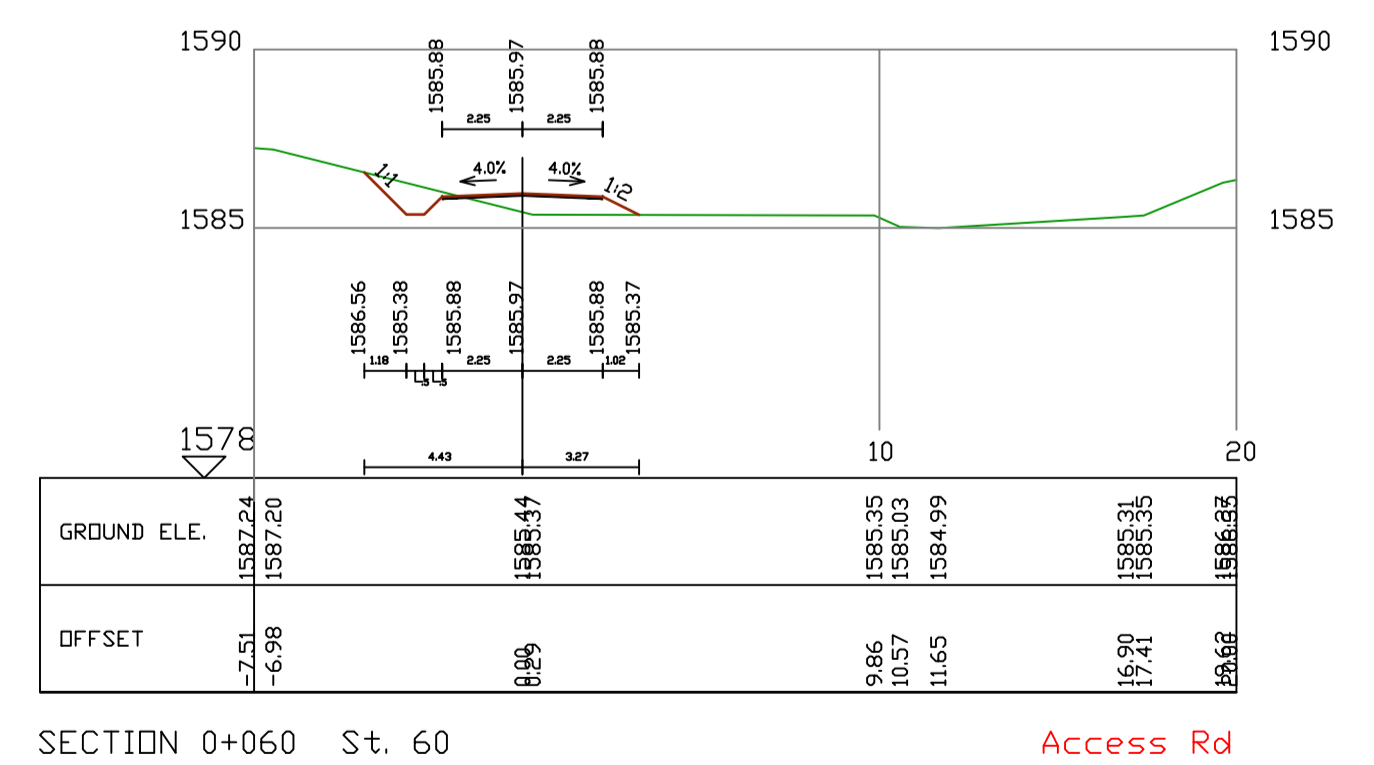
SECTION 0+000 St. 0 Access Rd



SECTION 0+020 St. 20 Access Rd



SECTION 0+040 St. 40 Access Rd



SECTION 0+060 St. 60 Access Rd

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS

 PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
 TEL: 256 41 220279,
 FAX: 256 41 220208,
 P.O. BOX 6583,
 KAMPALA, UGANDA.

PROJECT: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE: PROPOSED ABSTRACTION AND WATER TREATMENT WORKS ACCESS ROAD CROSS SECTIONS

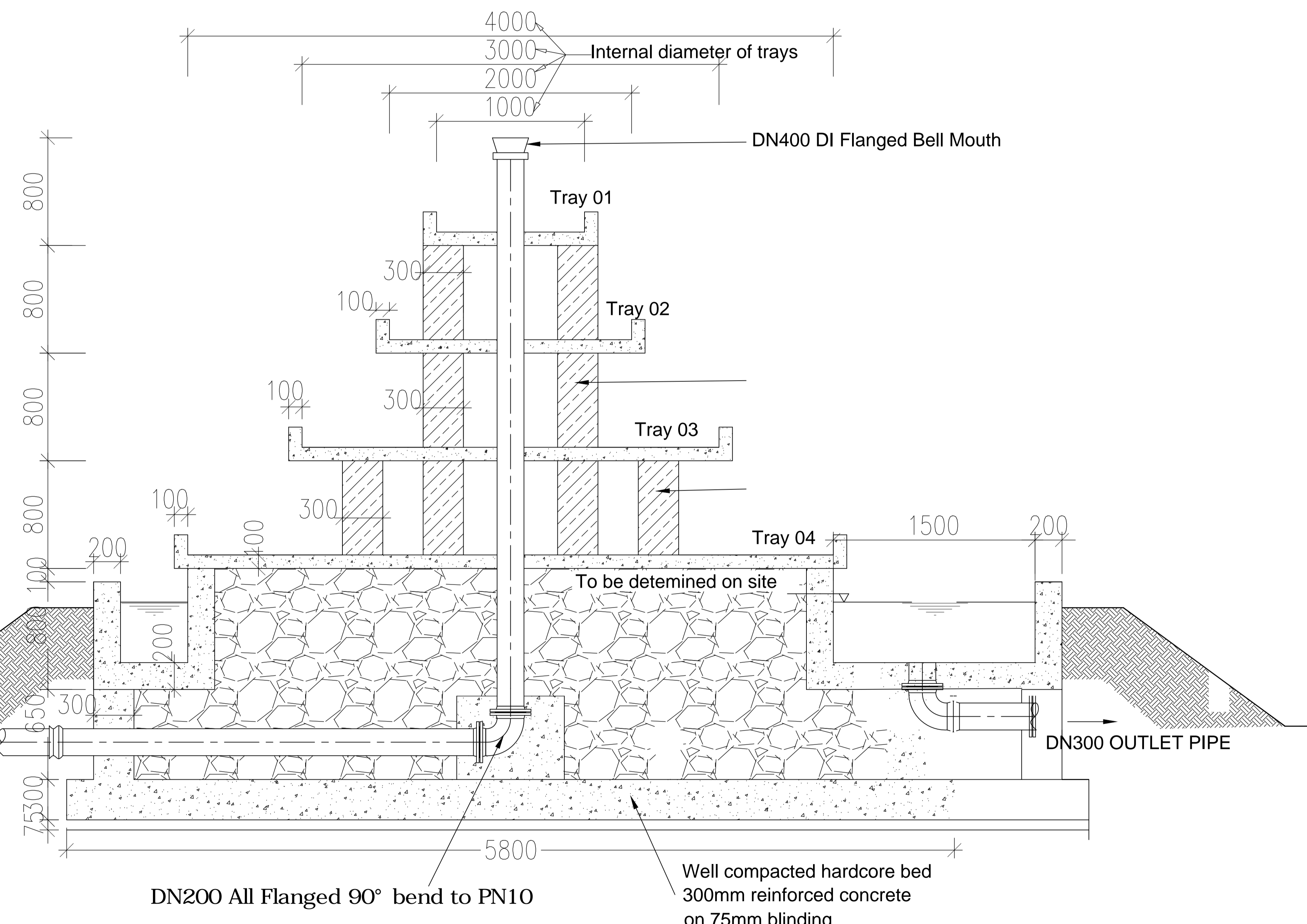
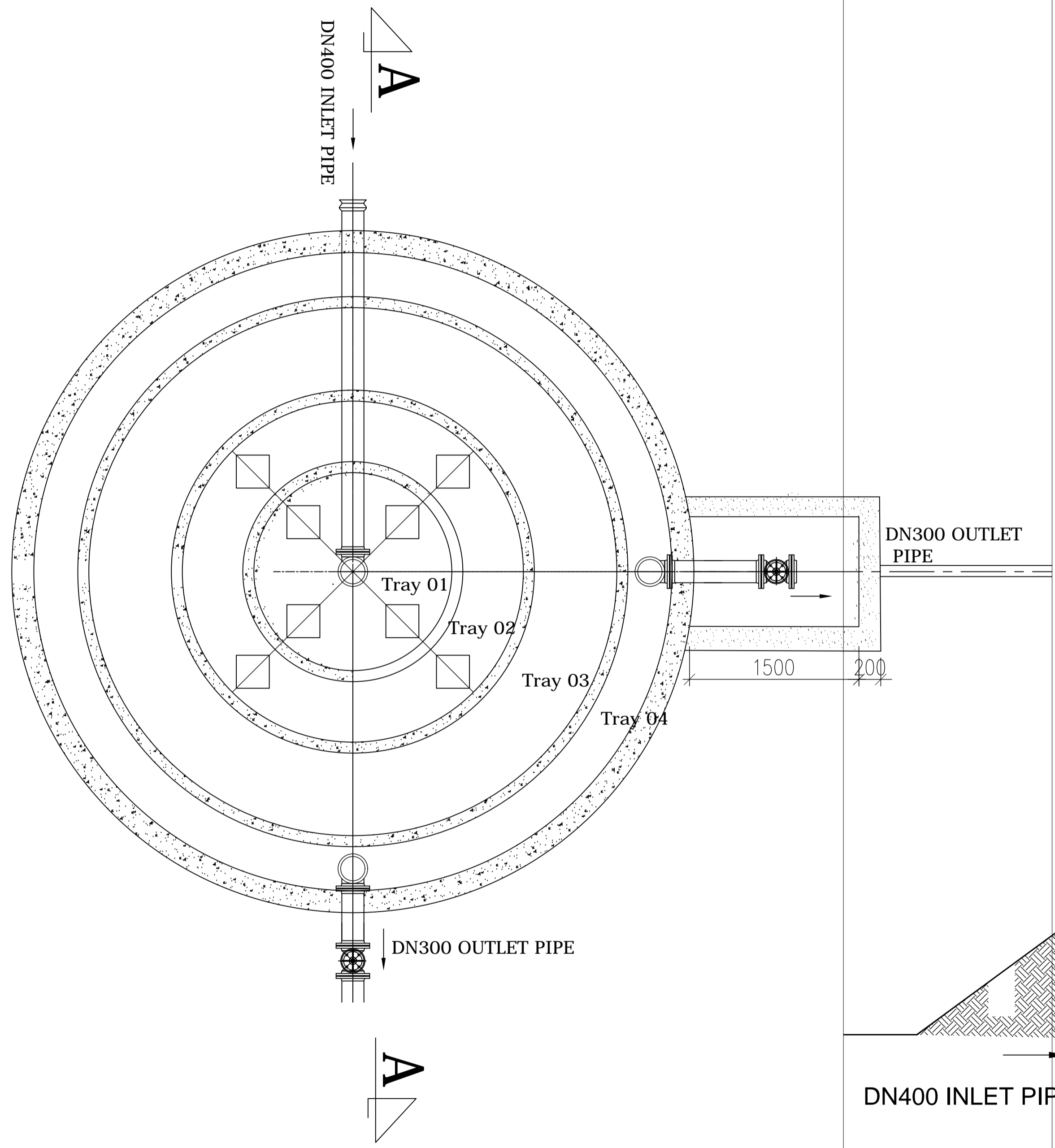
REVISIONS	DATE:			
		DRAWN BY:	A.A	
		CHECKED BY:	GS	
		APPROVED BY:	PJM	

SCALE:

DATUM: Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

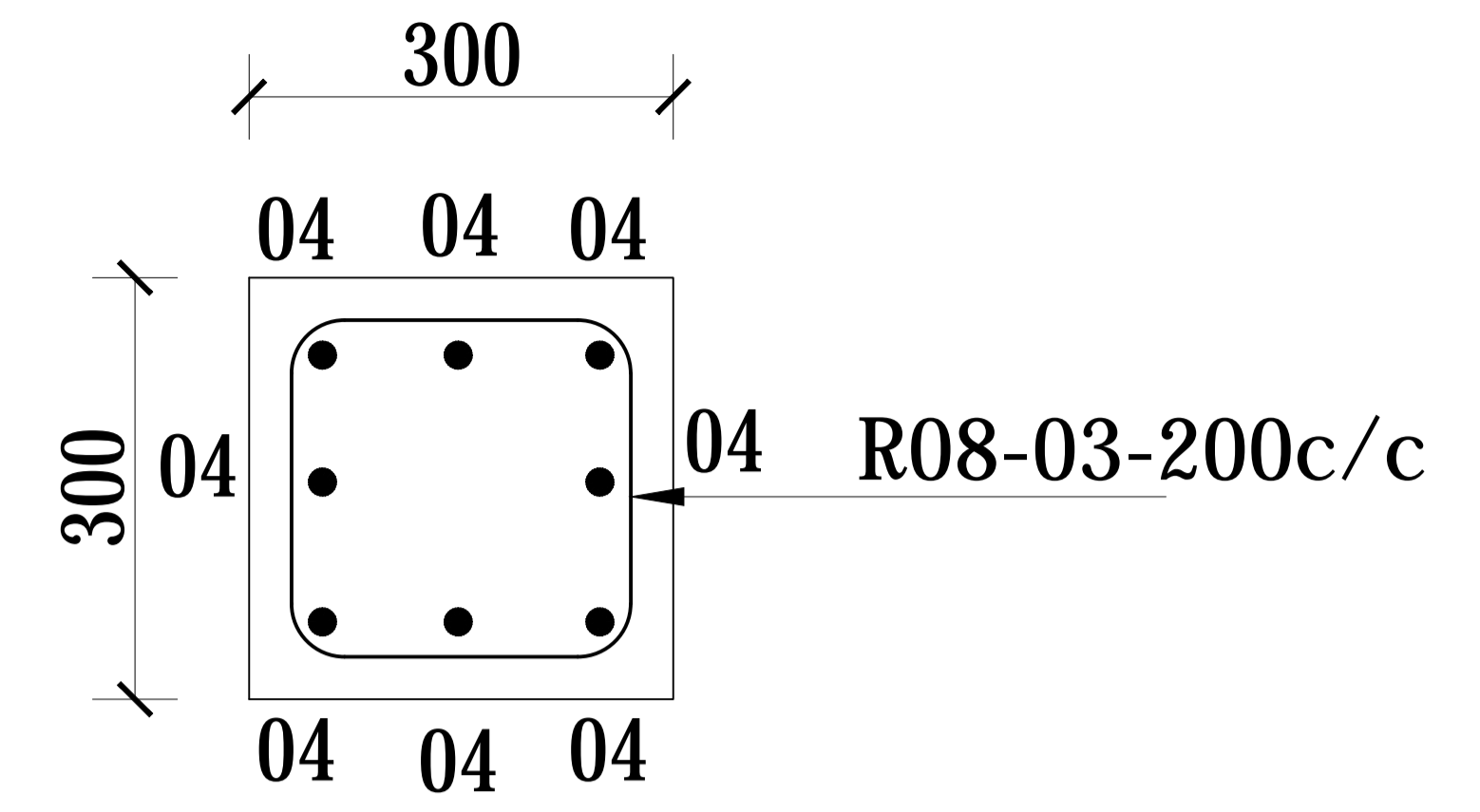
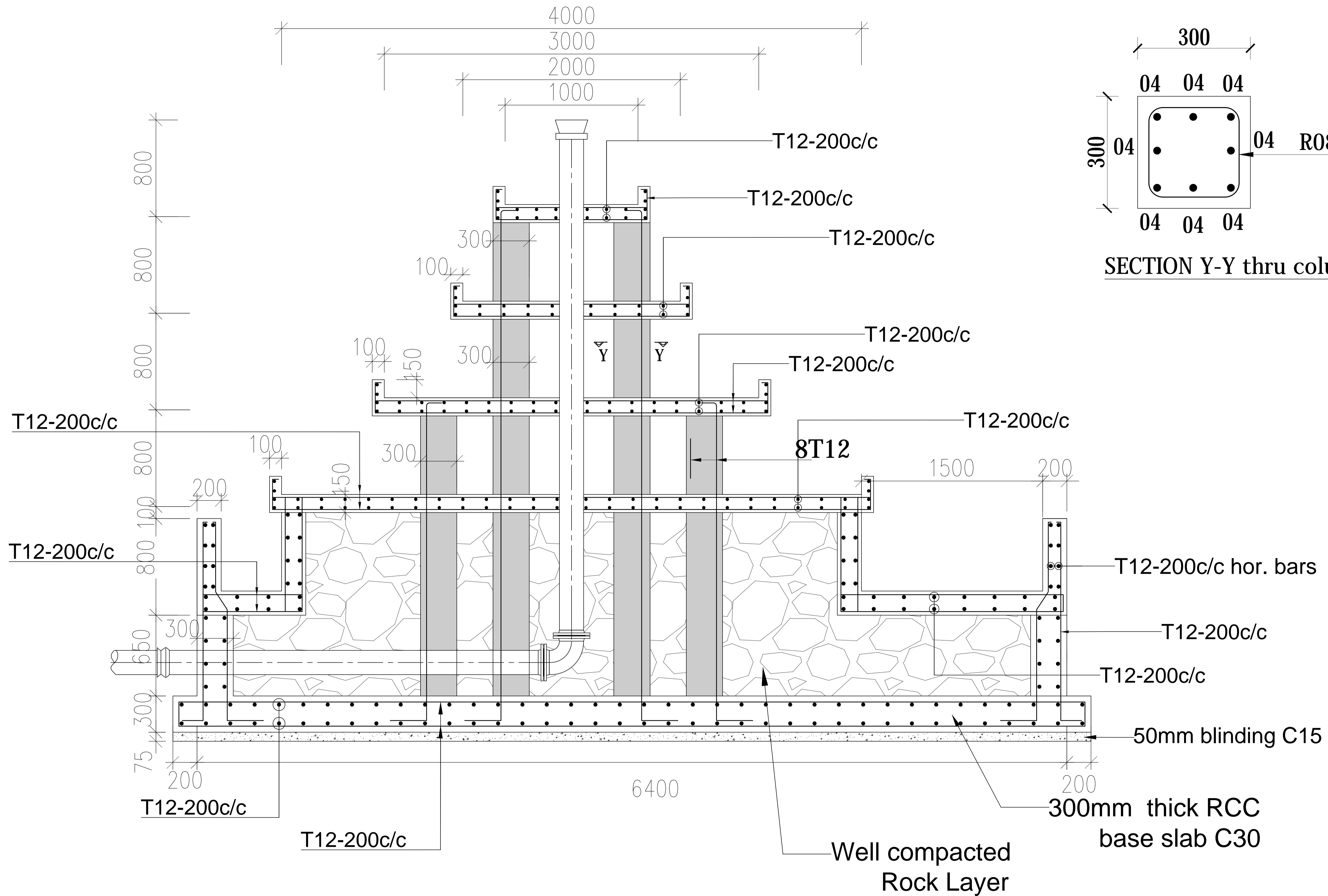
DWG. No. MWE/BWS/WTW/GEN_05

SHEET 05



SECTION A A

<p>GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT</p>	<p>KAGGA & PARTNERS PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.</p>	PROJECT:	<p>CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM</p>	REVISIONS	DATE:		SCALE:	DATUM	DWG. No.	SHEET
		DWG. TITLE		AERATOR PLAN AND SECTION			DRAWN BY:	A.A	Vertical: New Khartoum	
						CHECKED BY:	GS	Horizontal: UTM ZONE 36N ARC 60		
						APPROVED BY:	PJM			



SECTION Y-Y thru column

SECTION A-A

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:
DWG. TITLE

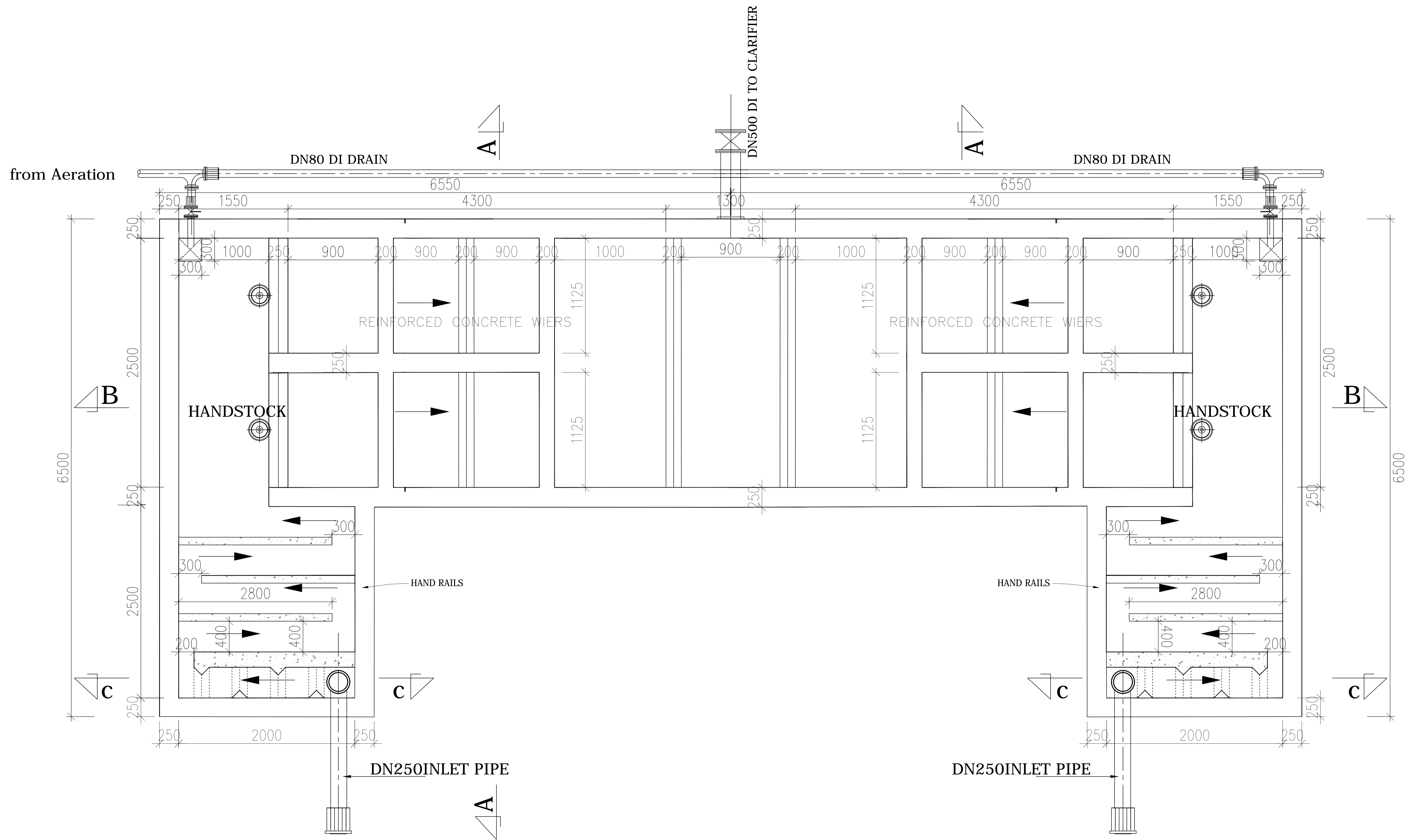
CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
AERATOR DETAILS

REVISIONS	DATE:	DRAWN BY:	A.A
		CHECKED BY:	GS
		APPROVED BY:	PJM

SCALE:
DATUM
Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

DWG. No.
KP/BWS/WTW/AE-02

SHEET



**FLOCCULATOR/COAGULATOR
PLAN LAYOUT**

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT
BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:

**CONSULTANCY SERVICES FOR DESIGN REVIEW AND
CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY
AND SANITATION SYSTEM**

DWG. TITLE

FLOCCULATOR PLAN

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

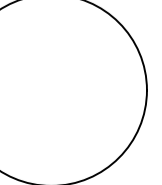
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Khartoum

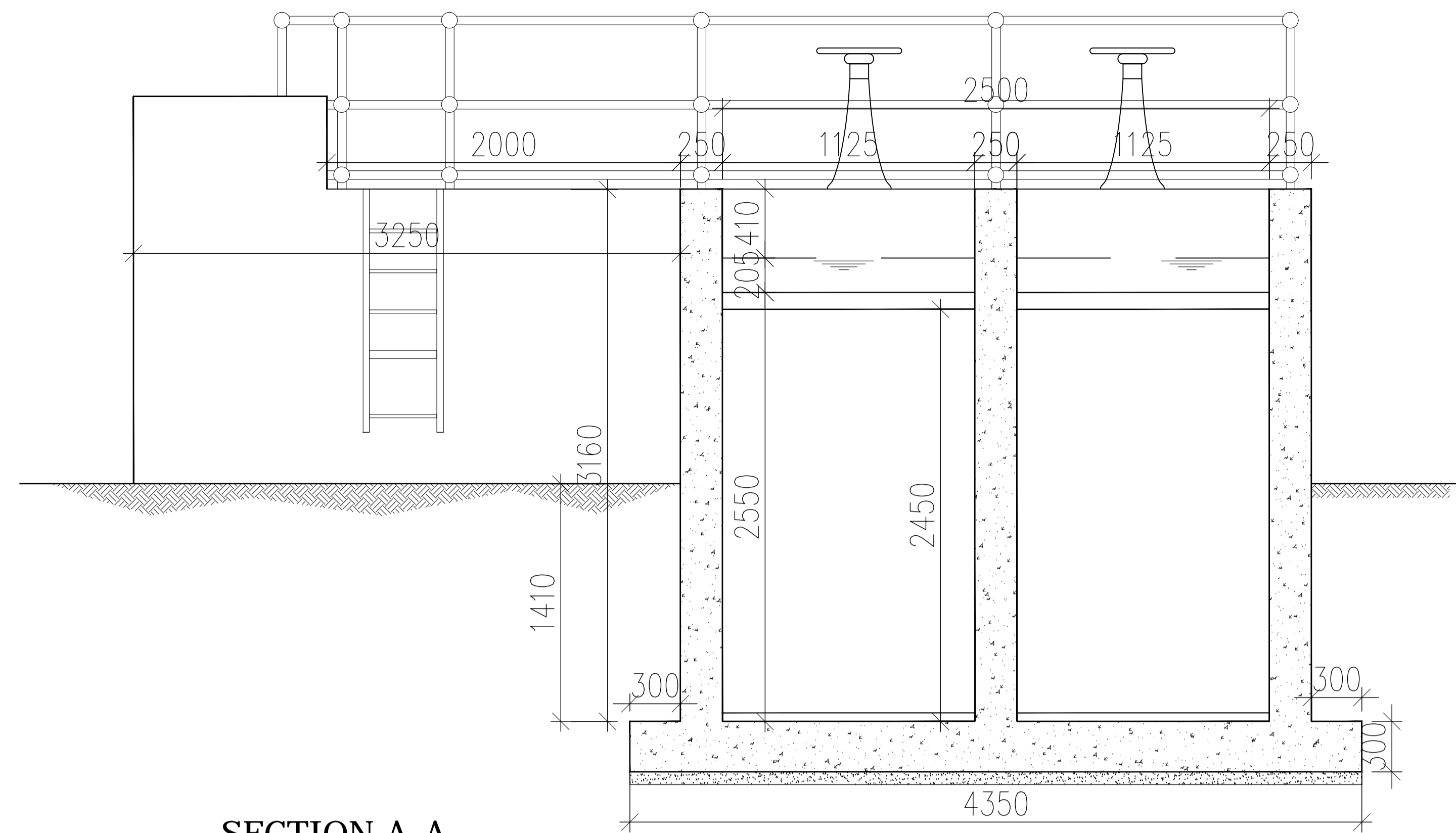
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ZONE 36N ARC 60

DWG. No.

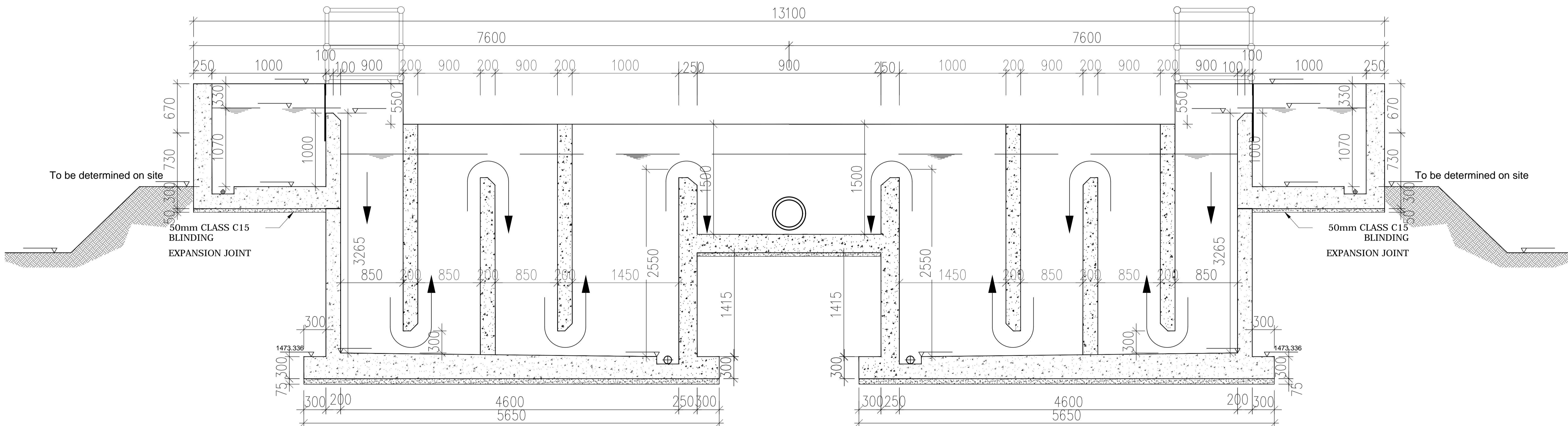
KP/BWS/WTW/FL-01

SHEET





SECTION A-A



SECTION A-A

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
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PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

FLOCCULATOR SECTIONS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

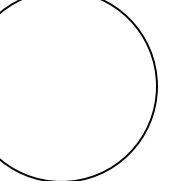
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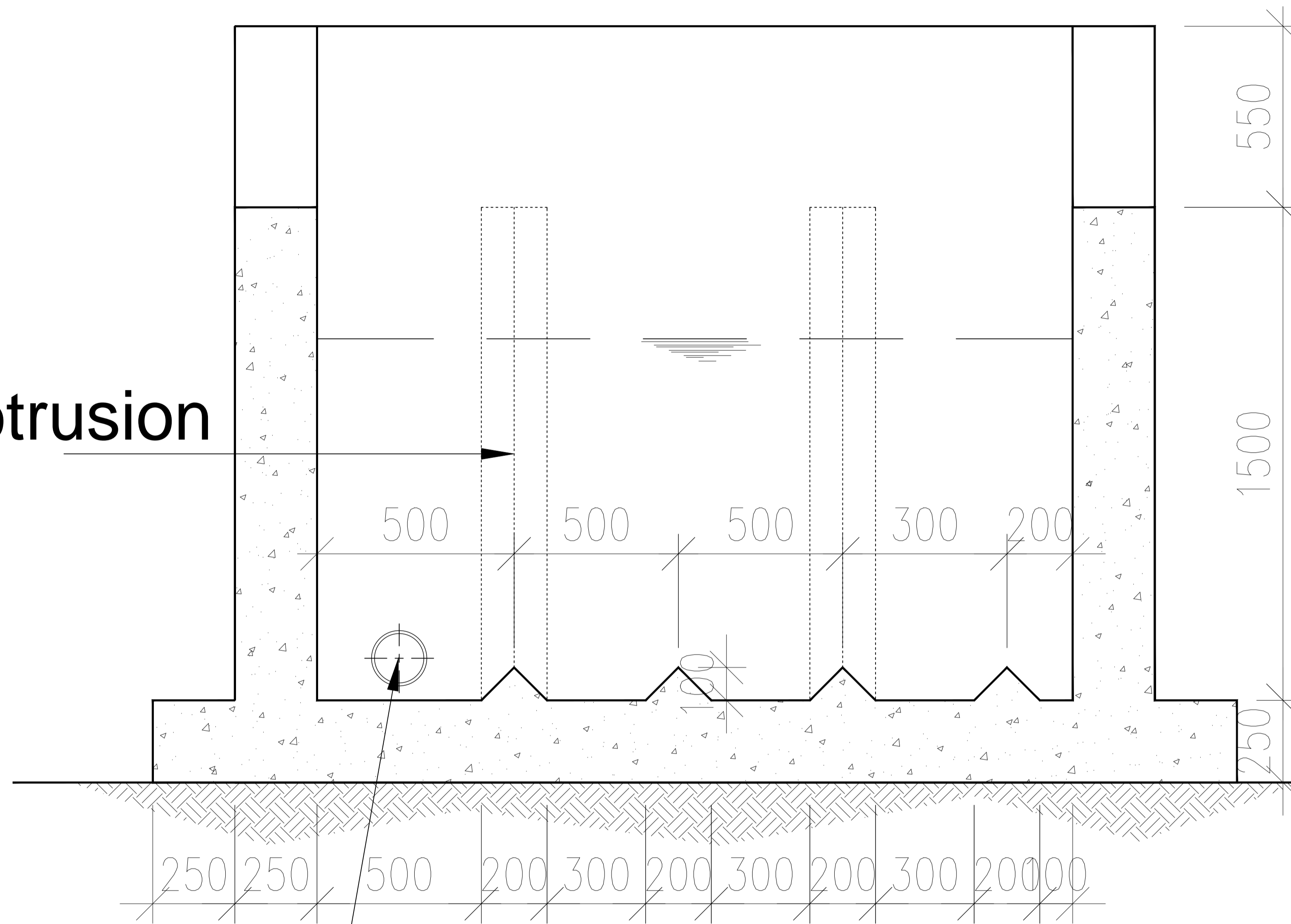
DWG. No.

KP/BWS/WTW/FL-02

SHEET



100mm Protrusion



Inlet pipe

SECTION C-C

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
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P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

FLOCCULATOR SECTION C-C

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

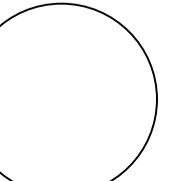
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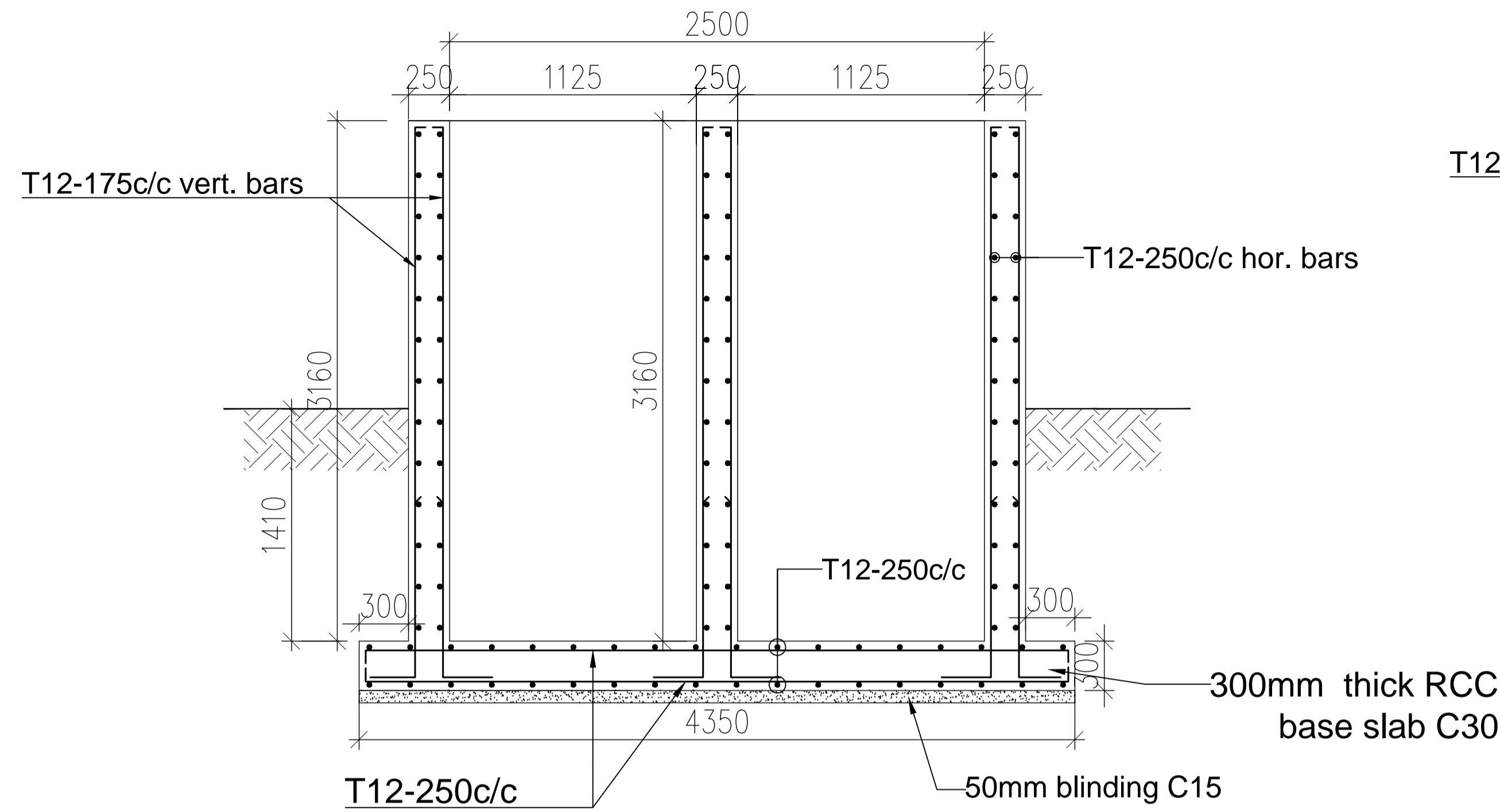
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DWG. No.

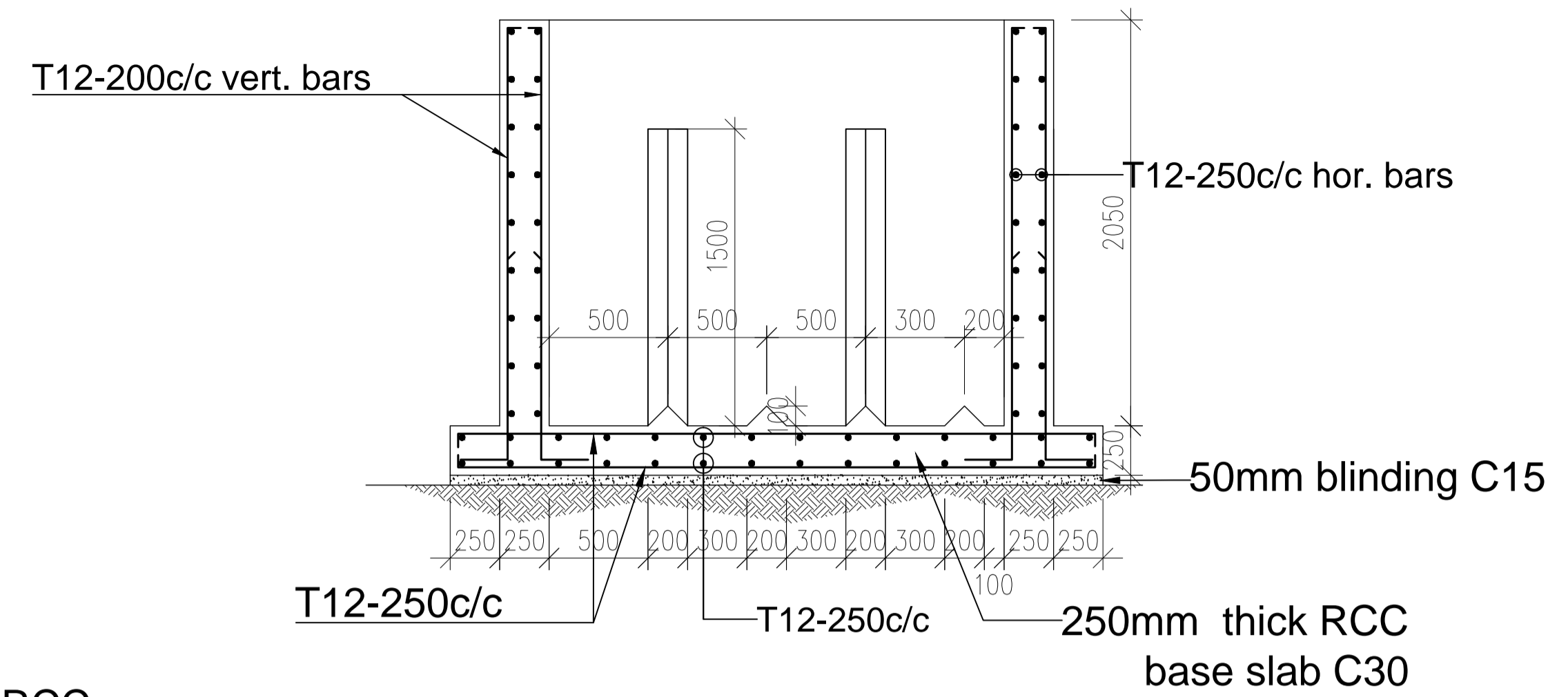
KP/BWS/WTW/FL-03

SHEET

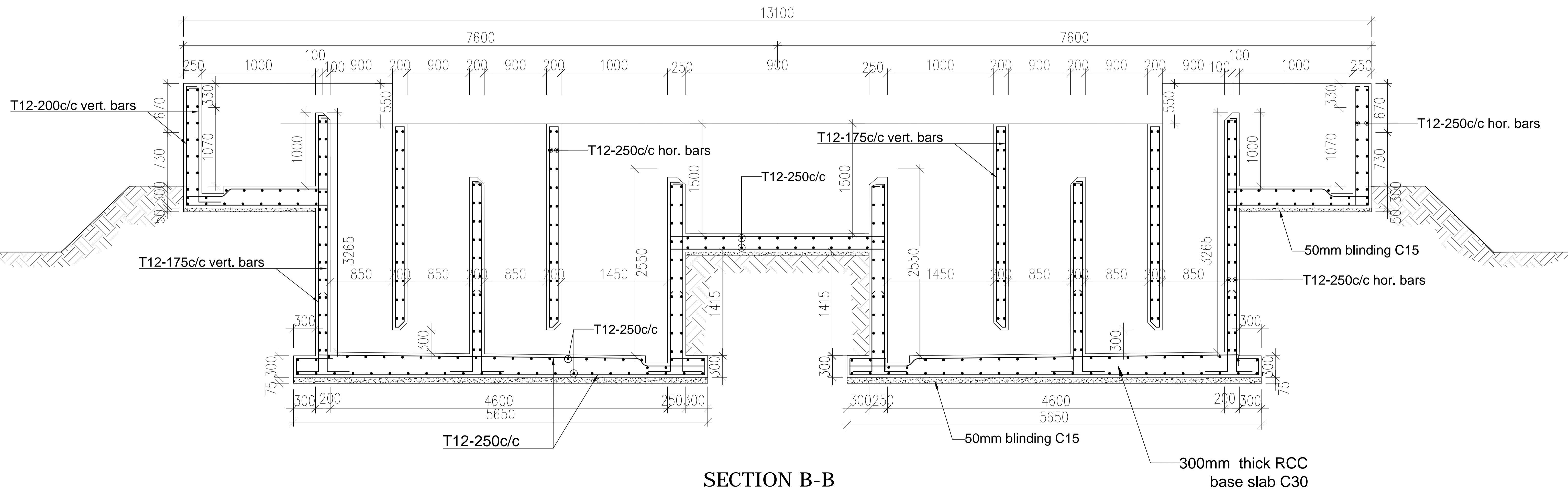




SECTION A-A

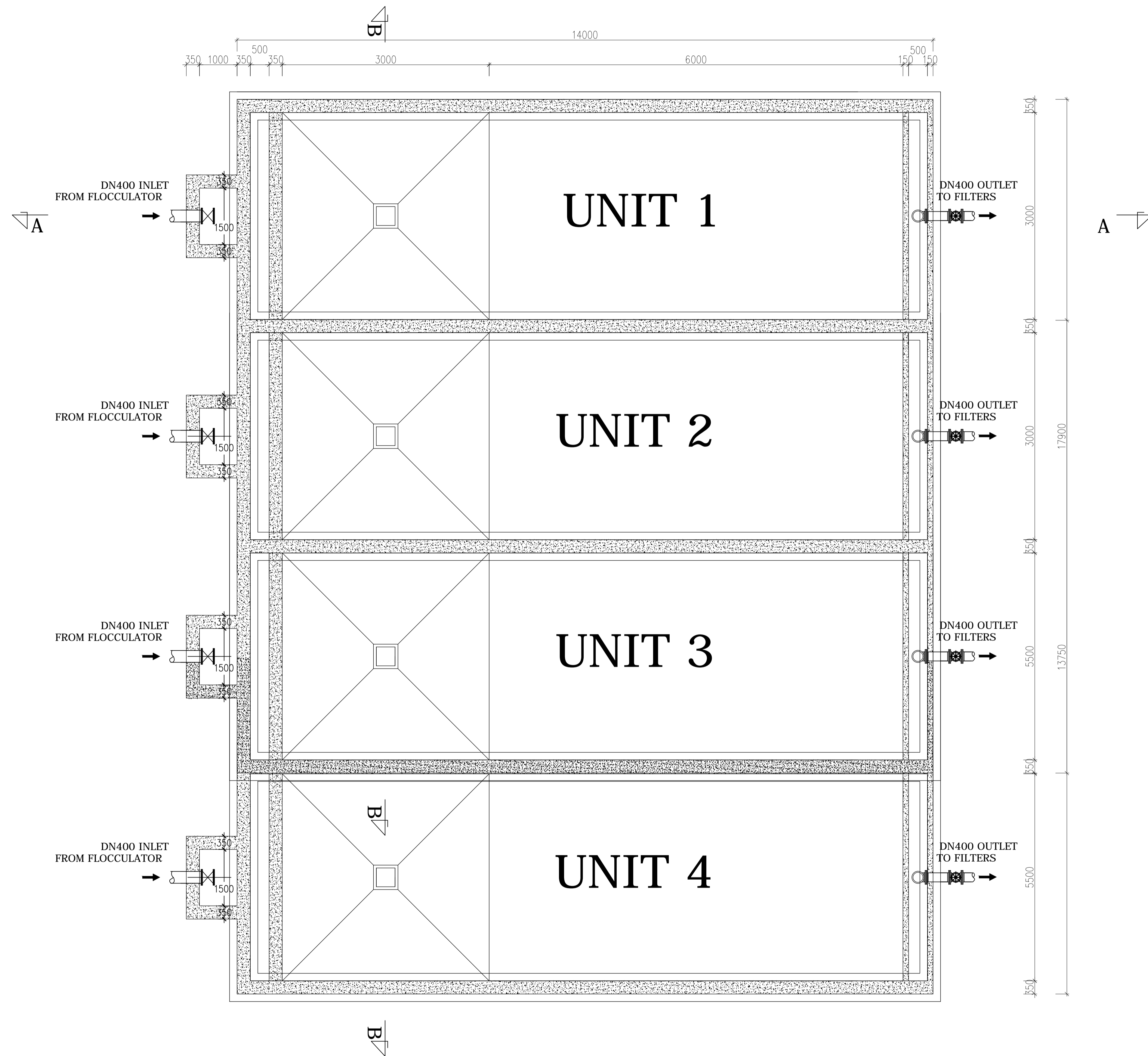


SECTION C-C



SECTION B-B

CLARIFIERS



GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:
DWG. TITLE

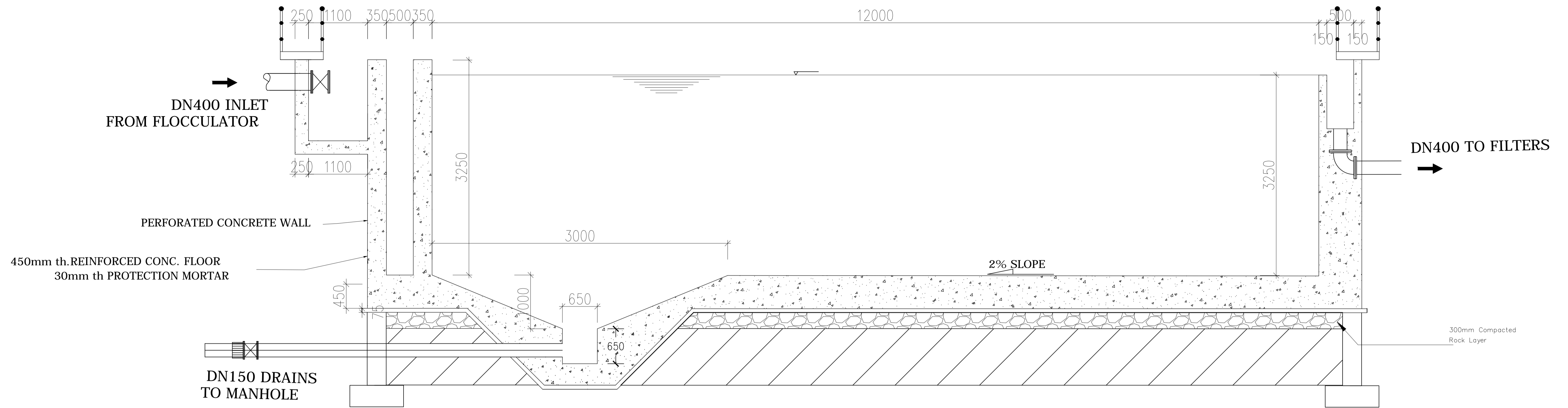
CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
CLARIFIER PLAN

REVISIONS	DATE:	DRAWN BY:	A.A
		CHECKED BY:	GS
		APPROVED BY:	PJM

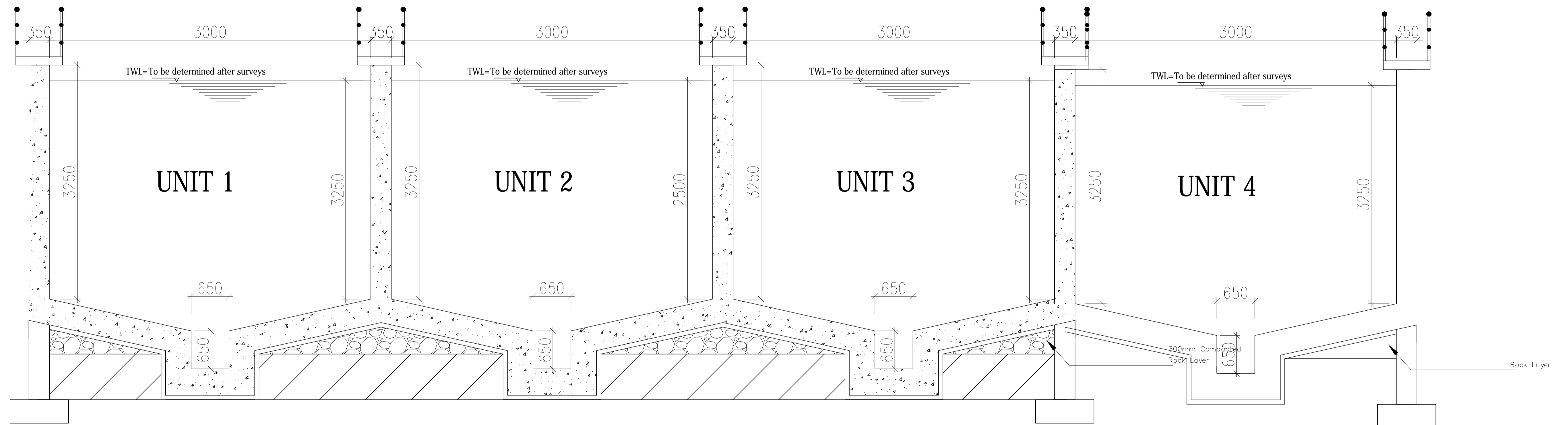
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DATUM
Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

DWG. No.
KP/BWS/WTW/CL-01

SHEET



SECTION A-A



SECTION B-B

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

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PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

CLARIFIER SECTIONS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

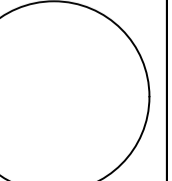
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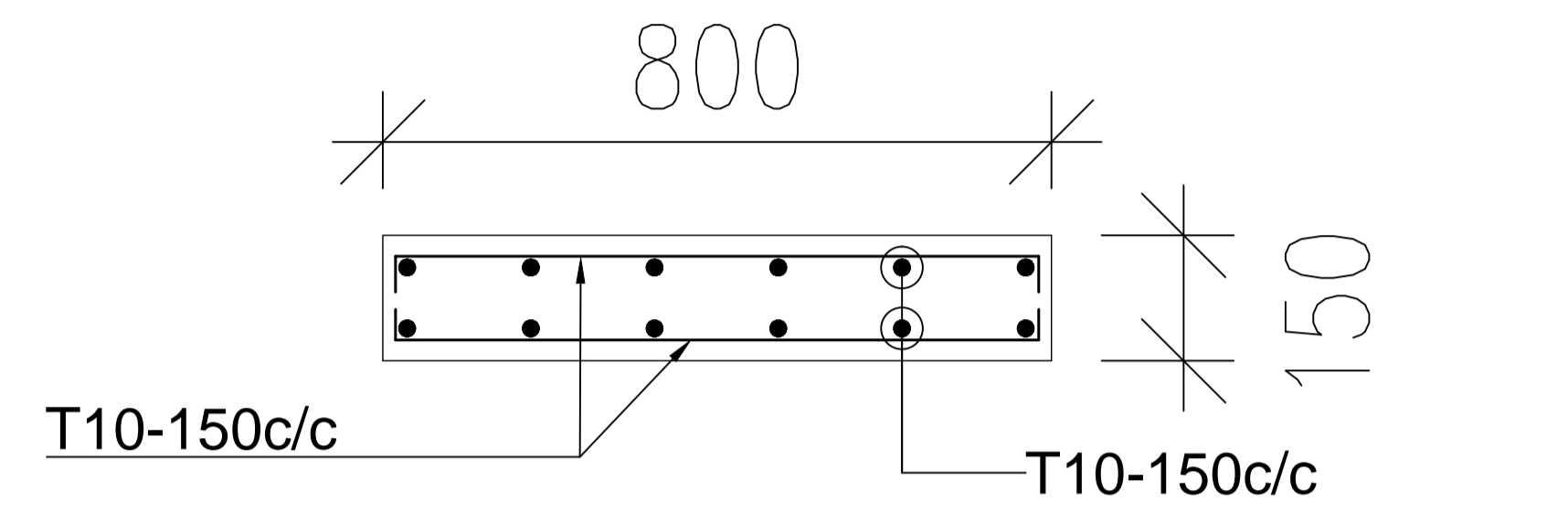
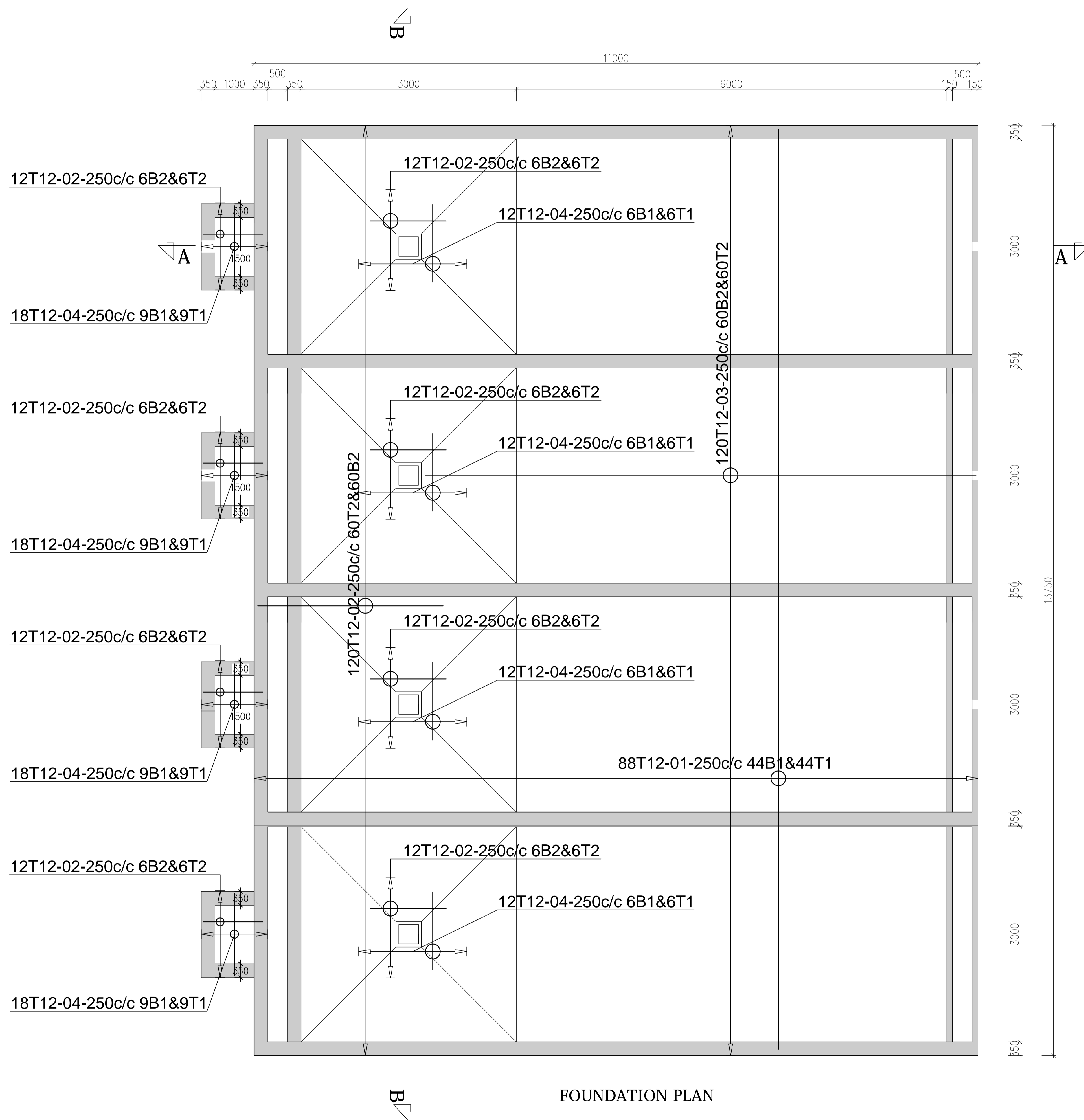
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DWG. No.

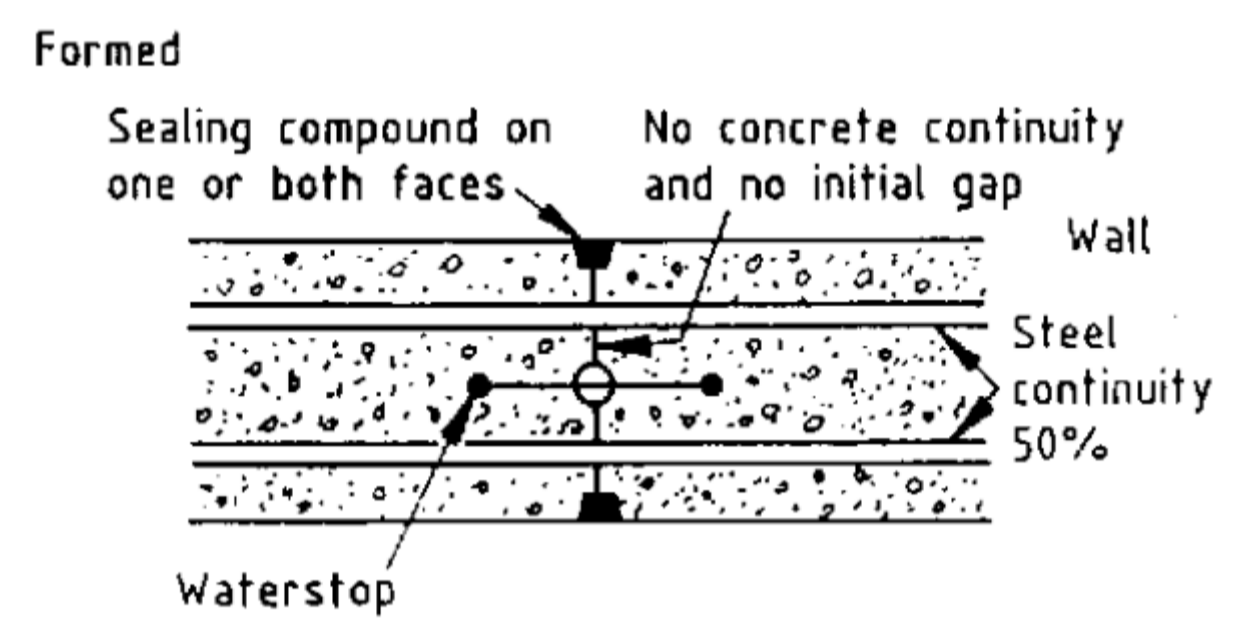
KP/BWS/WTW/CL-02

SHEET






SECTION THRU WALKWAY SLAB



TYPICAL JOINT

FOUNDATION PLAN

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS

 PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
 TEL: 256 41 220279,
 FAX: 256 41 220208,
 P.O. BOX 6583,
 KAMPALA, UGANDA.

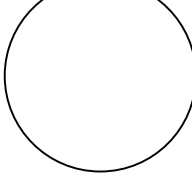
PROJECT: **CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM**

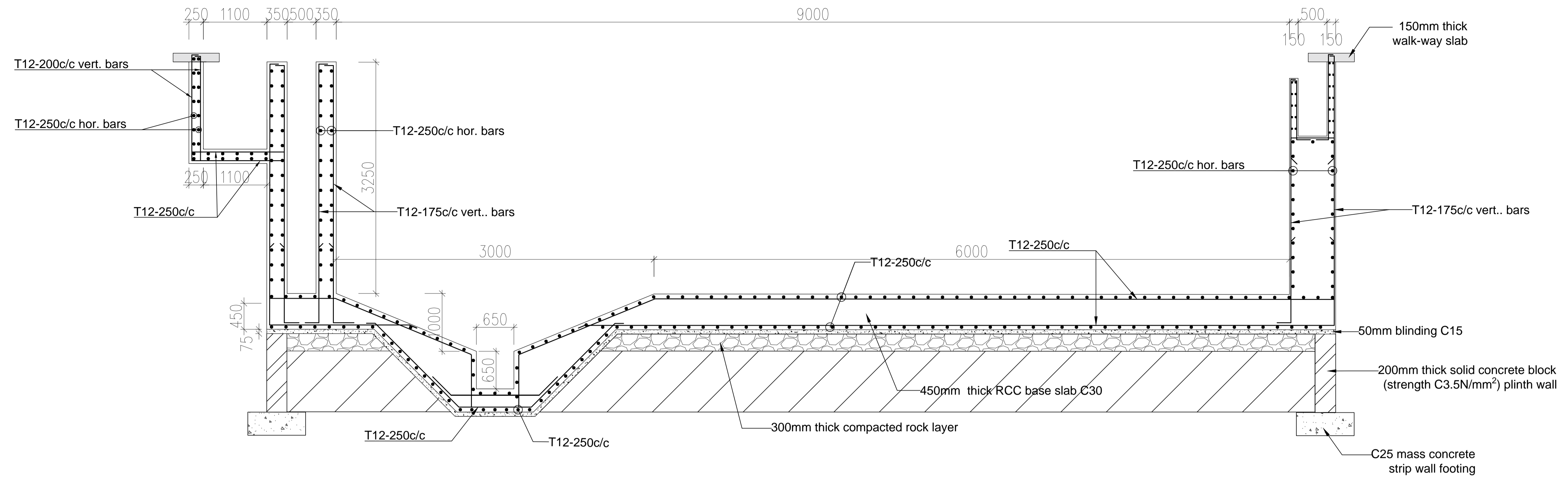
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REVISIONS	DATE:	DRAWN BY:	A.A
		CHECKED BY:	GS
		APPROVED BY:	PJM

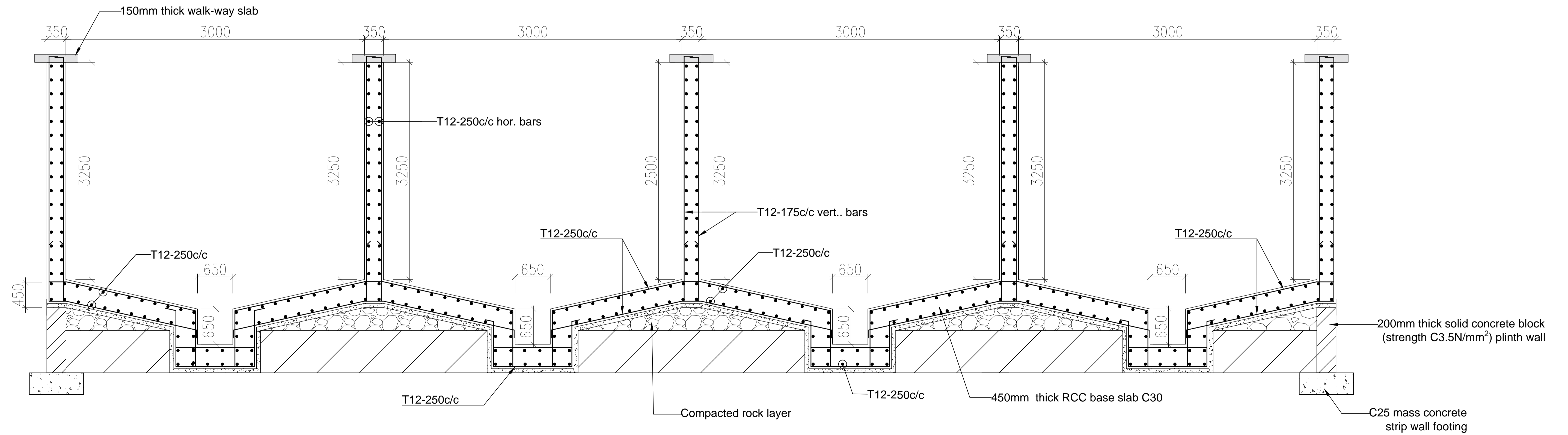
SCALE:	DATUM
	Vertical: New Khartoum
	Horizontal: UTM ZONE 36N ARC 60

DWG. No. KP/BWS/WTW/CL-03

SHEET 



SECTION A-A



SECTION B-B

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
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PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

CLARIFIER REINFORCEMENT DETAILS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

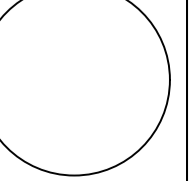
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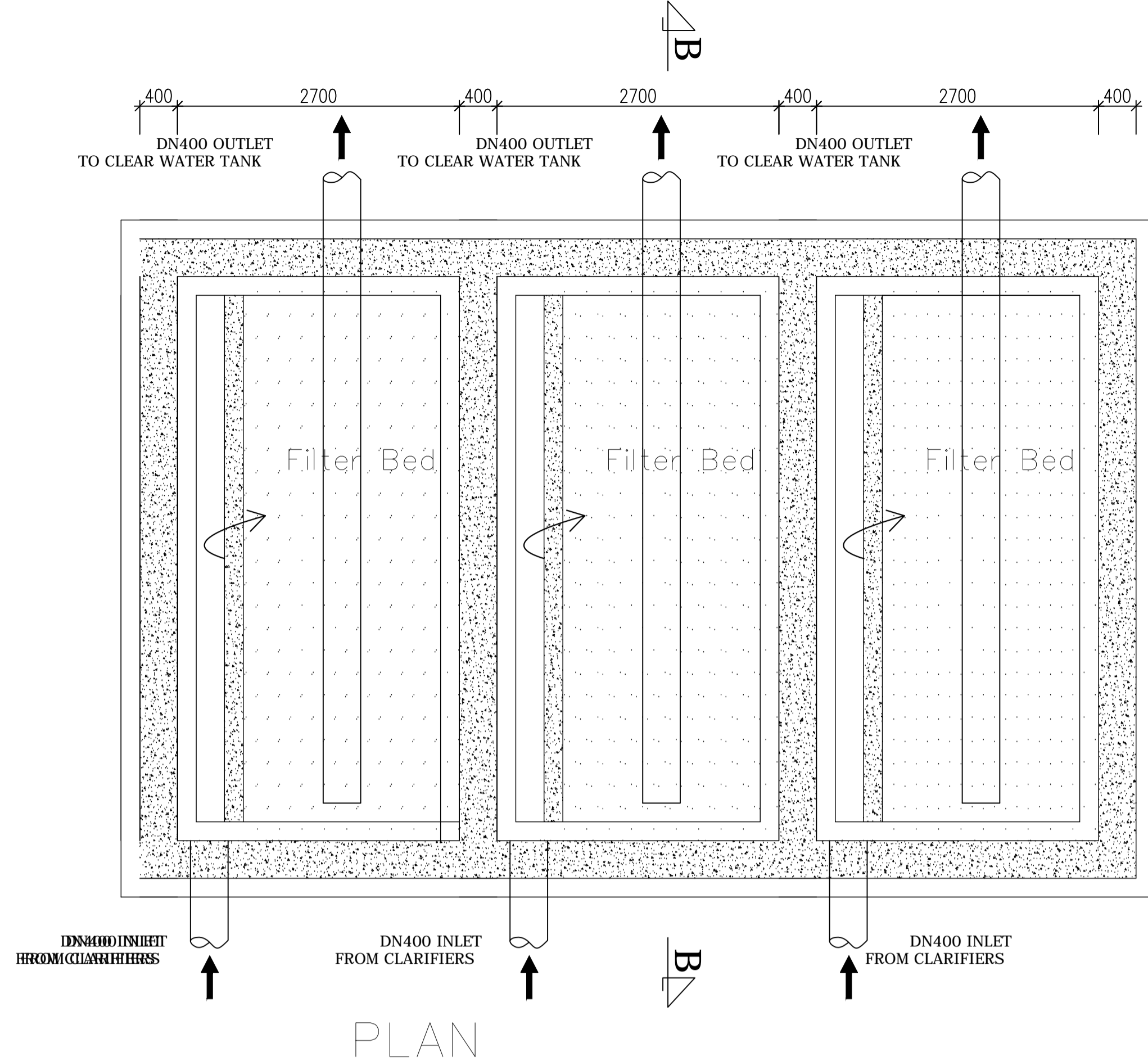
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KP/BWS/WTW/CL-04

SHEET

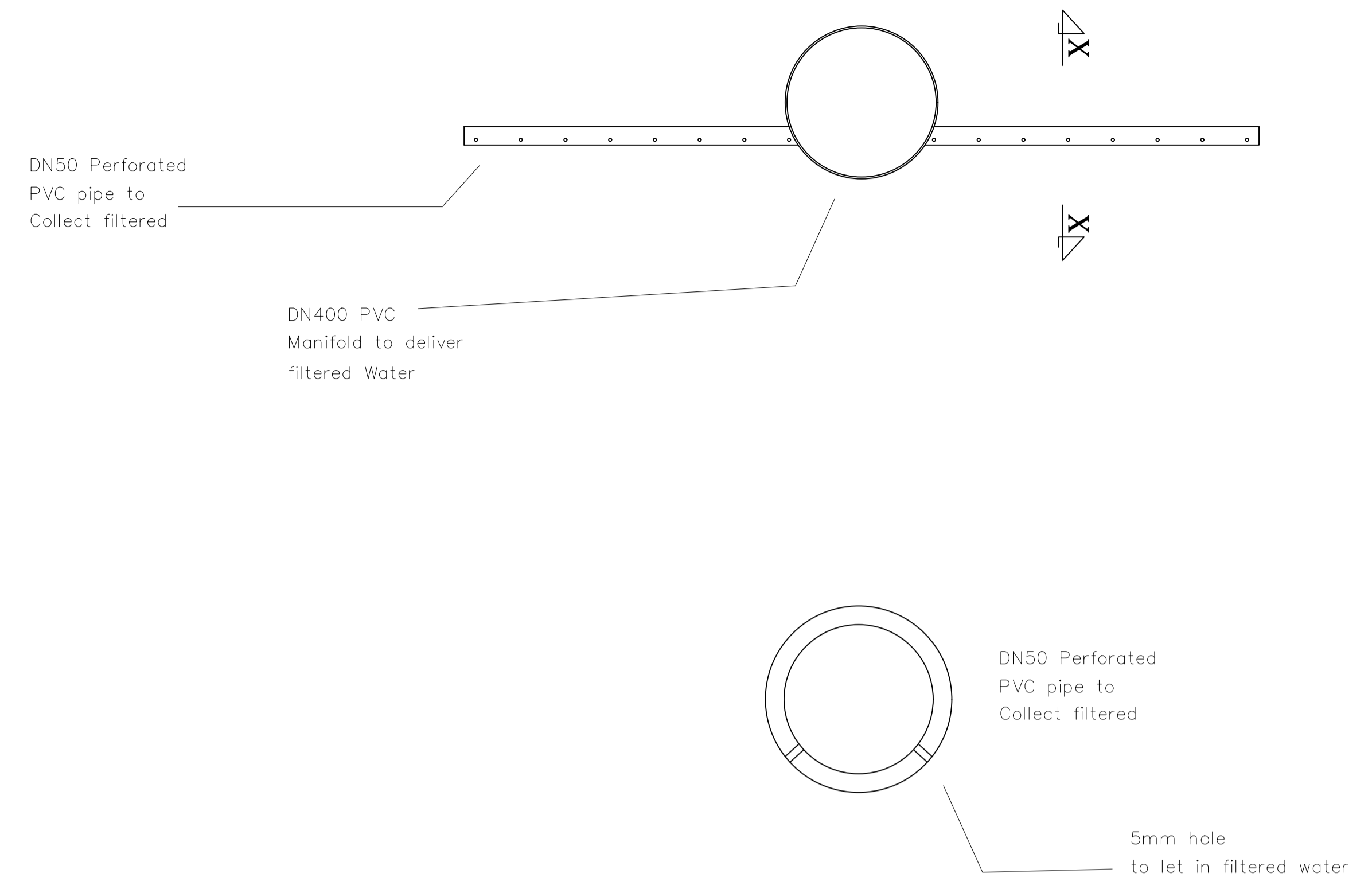


RAPID SAND FILTERS,

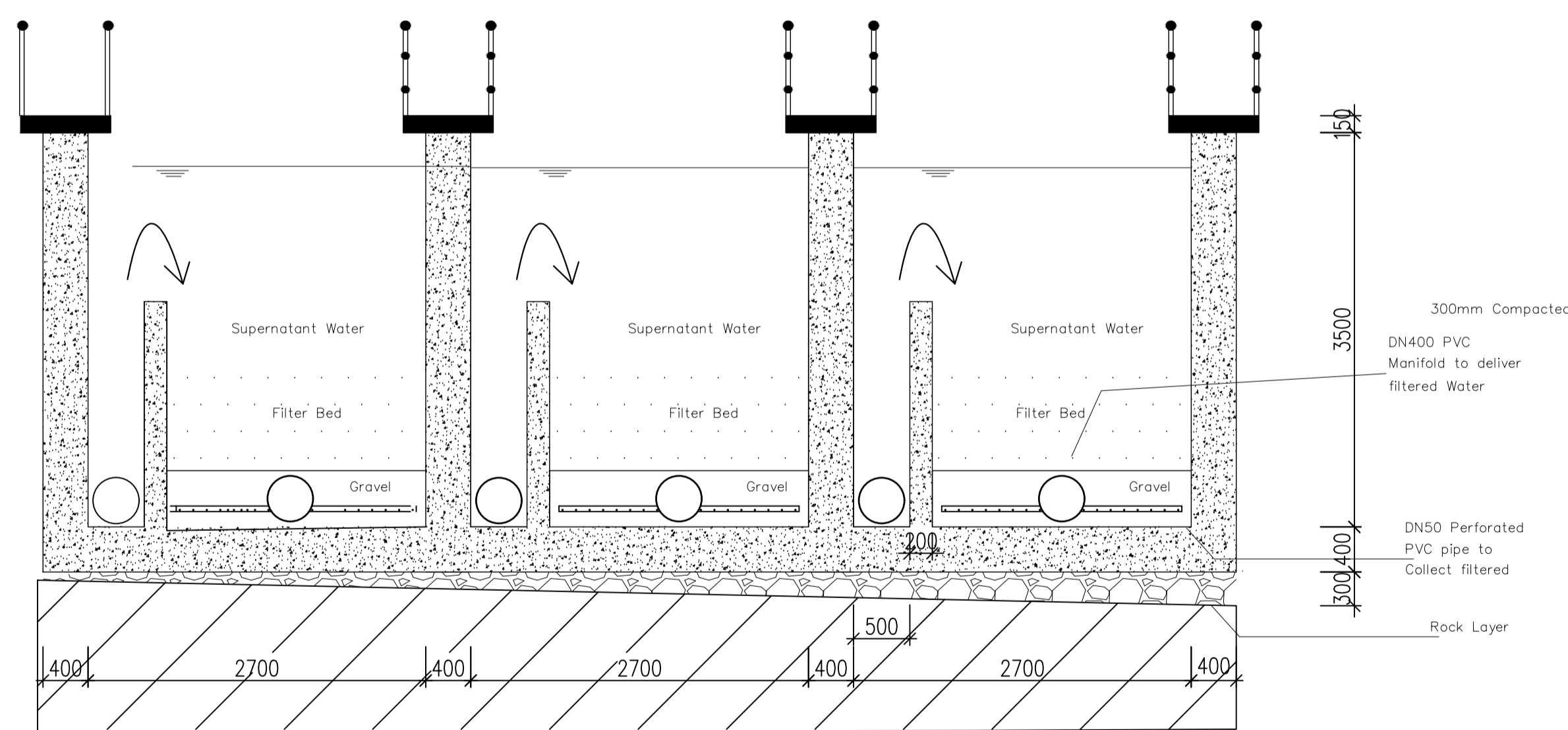


PLAN

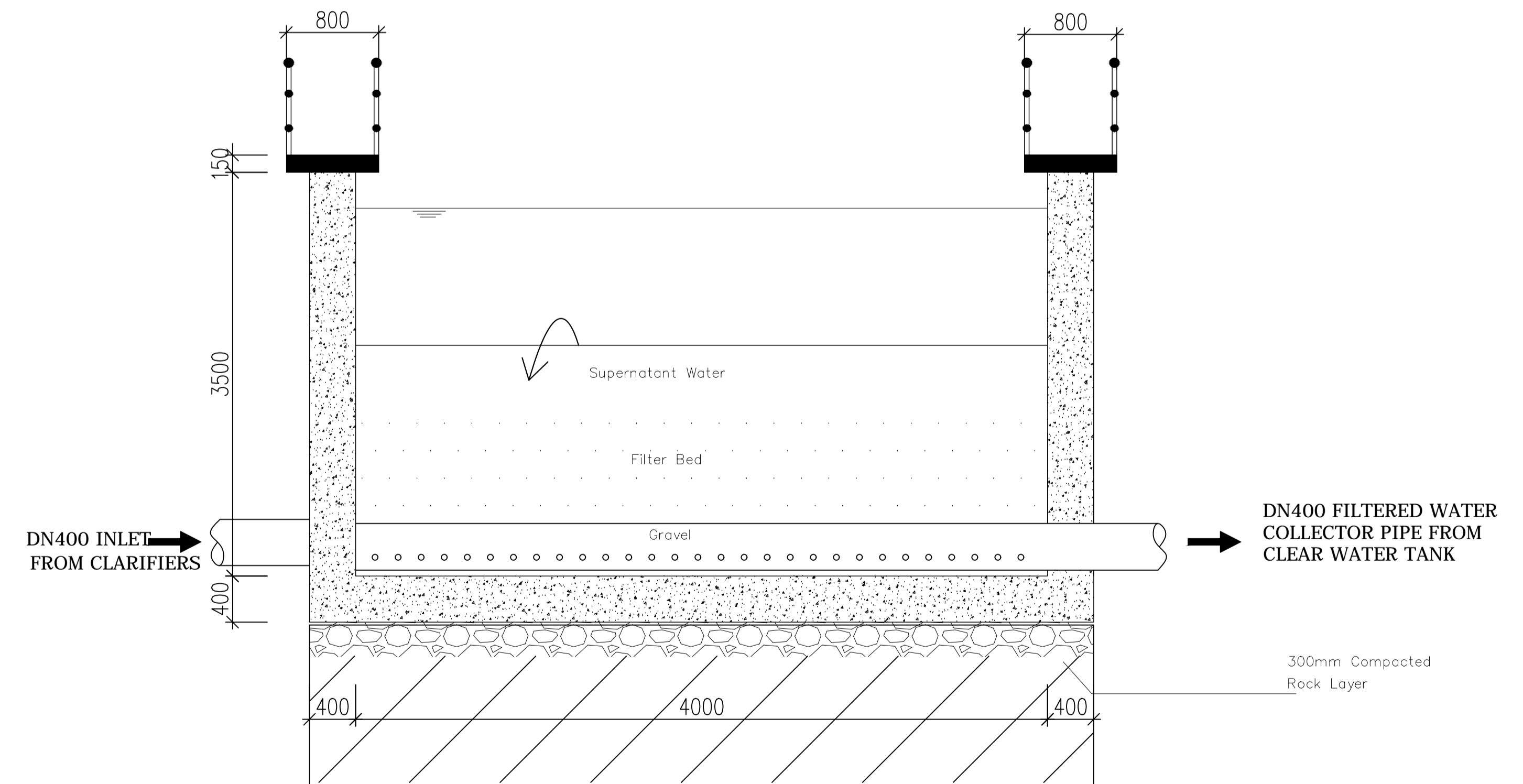
Manifold Detail



SECTION X - X



SECTION A - A



SECTION B - B

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
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FAX: 256 41 220208,
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PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

RAPID SAND FILTER PLAN AND SECTIONS

REVISIONS

DATE:

DRAWN BY:

A.A

CHECKED BY:

GS

APPROVED BY:

PJM

SCALE:

DATUM

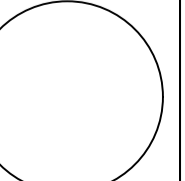
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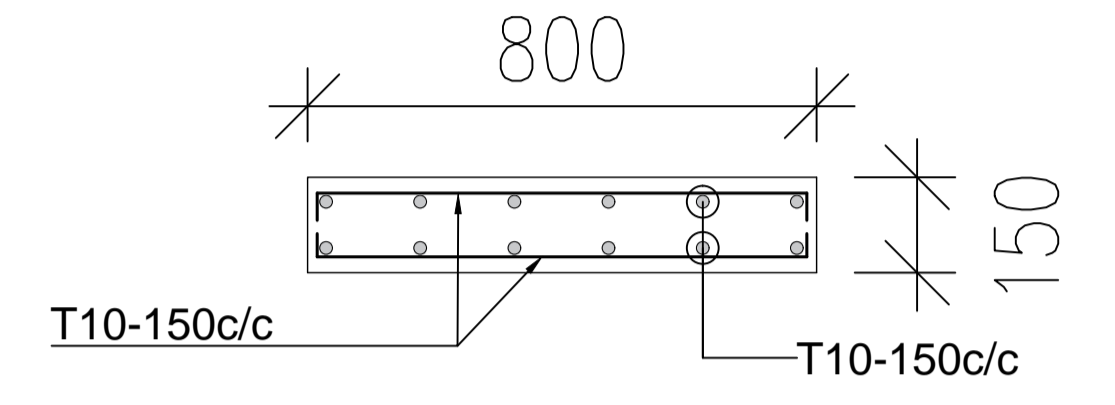
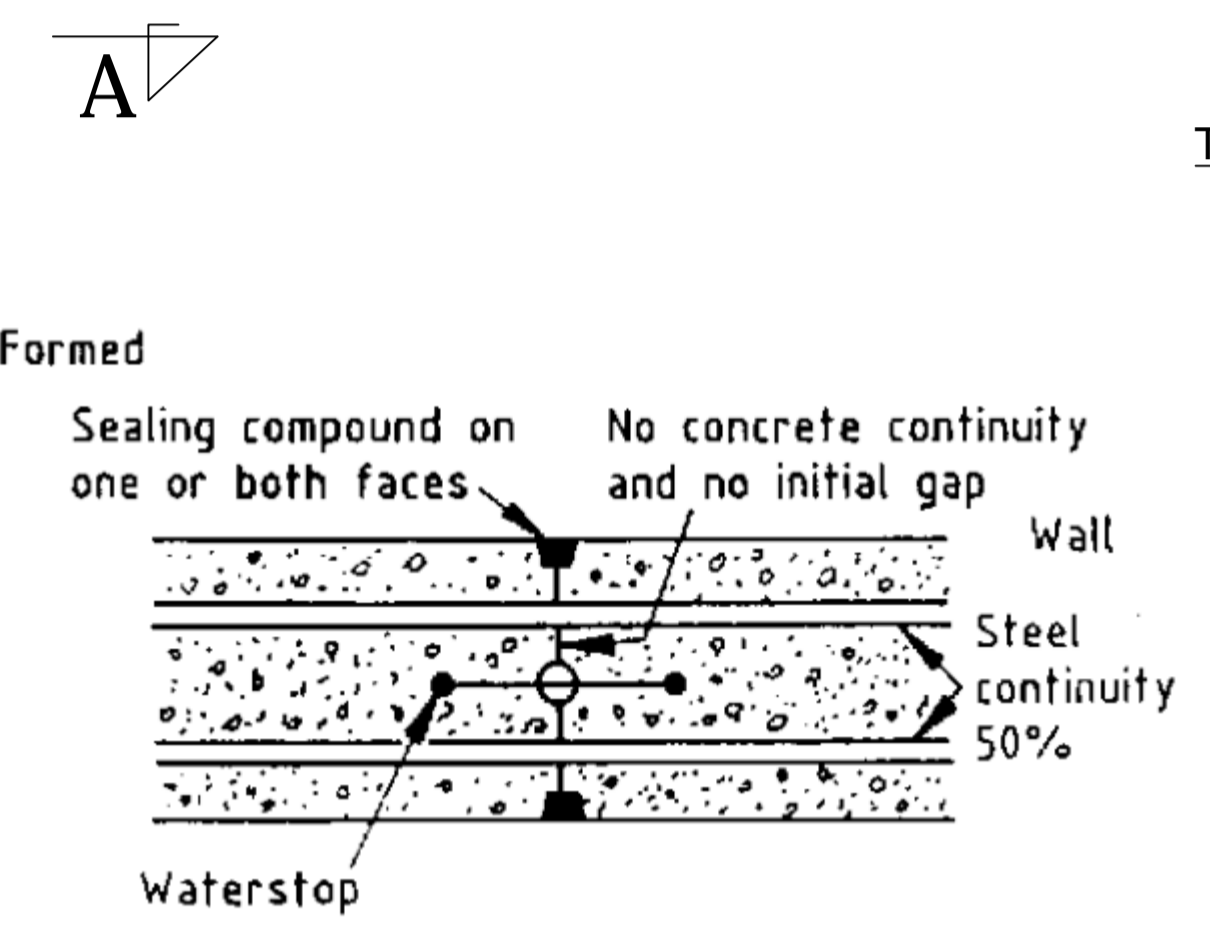
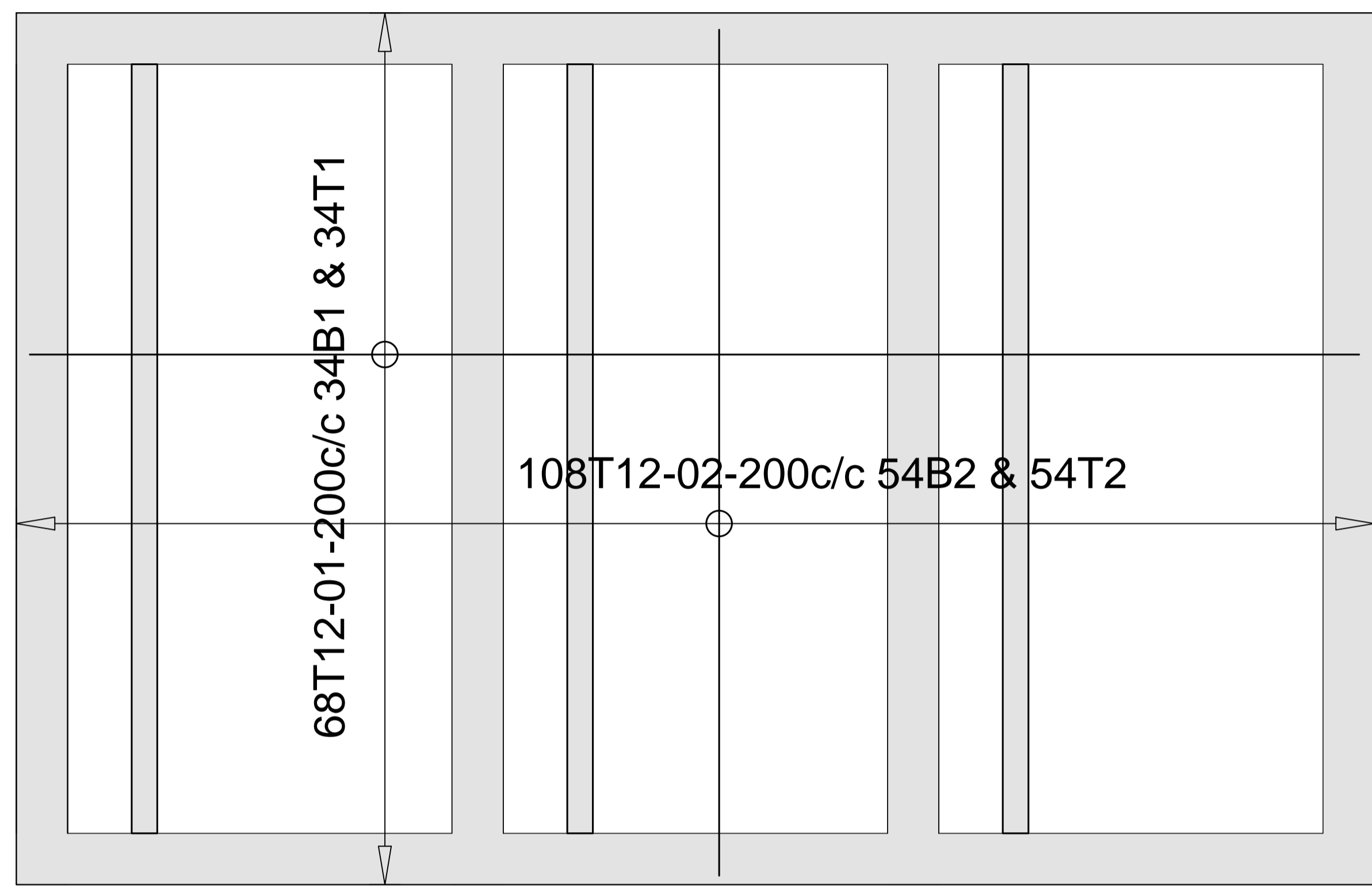
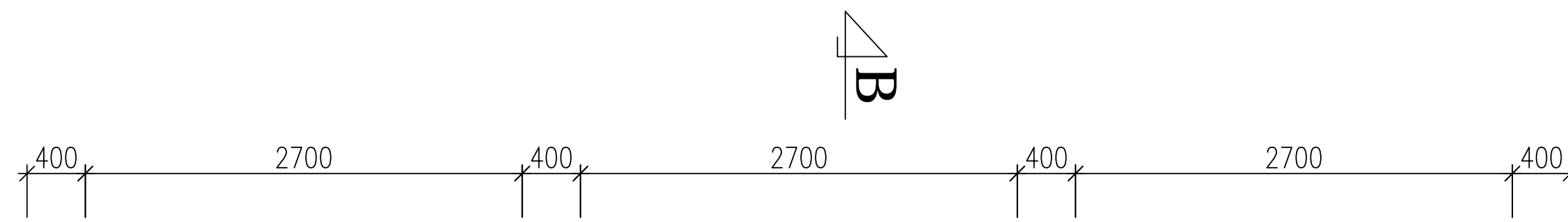
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DWG. No.

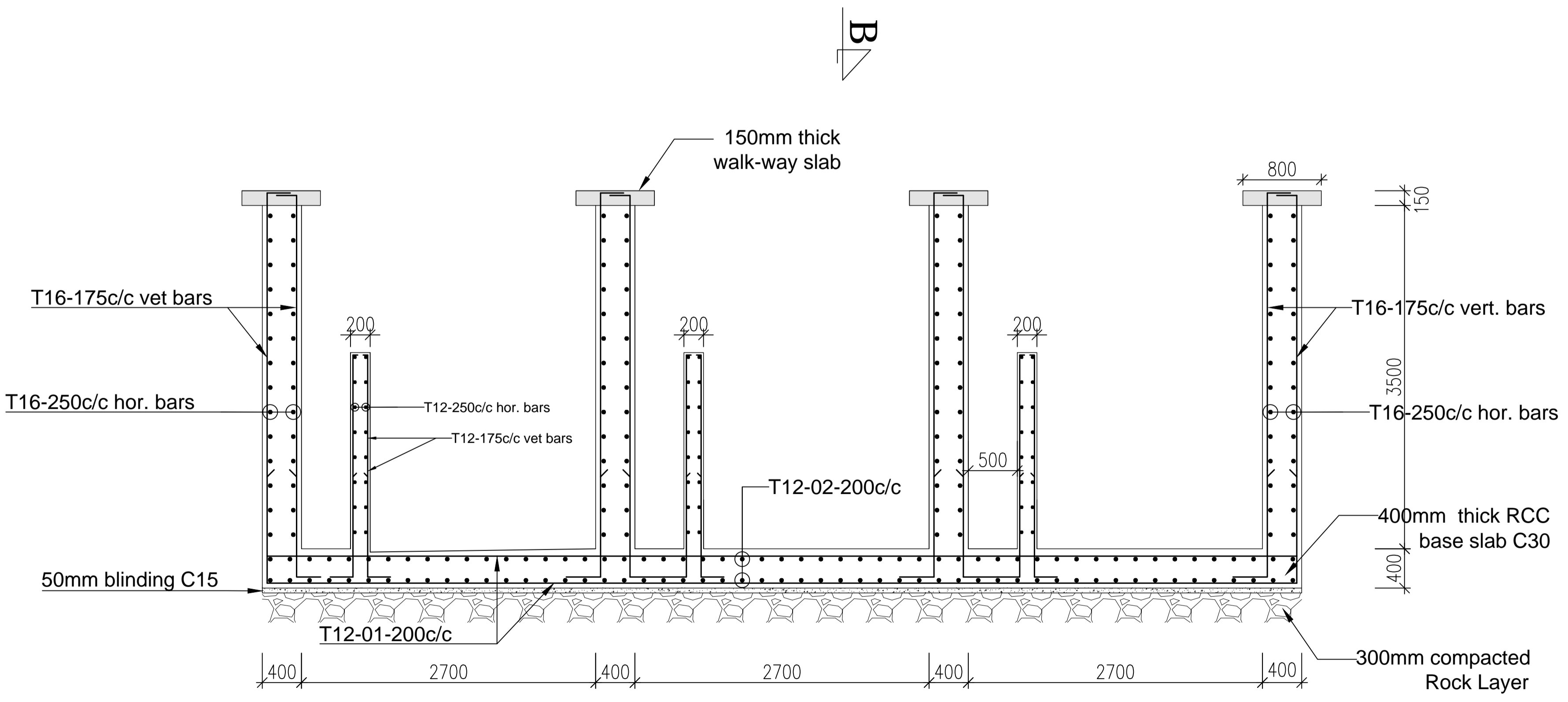
KP/BWS/WTW/SF-01

SHEET

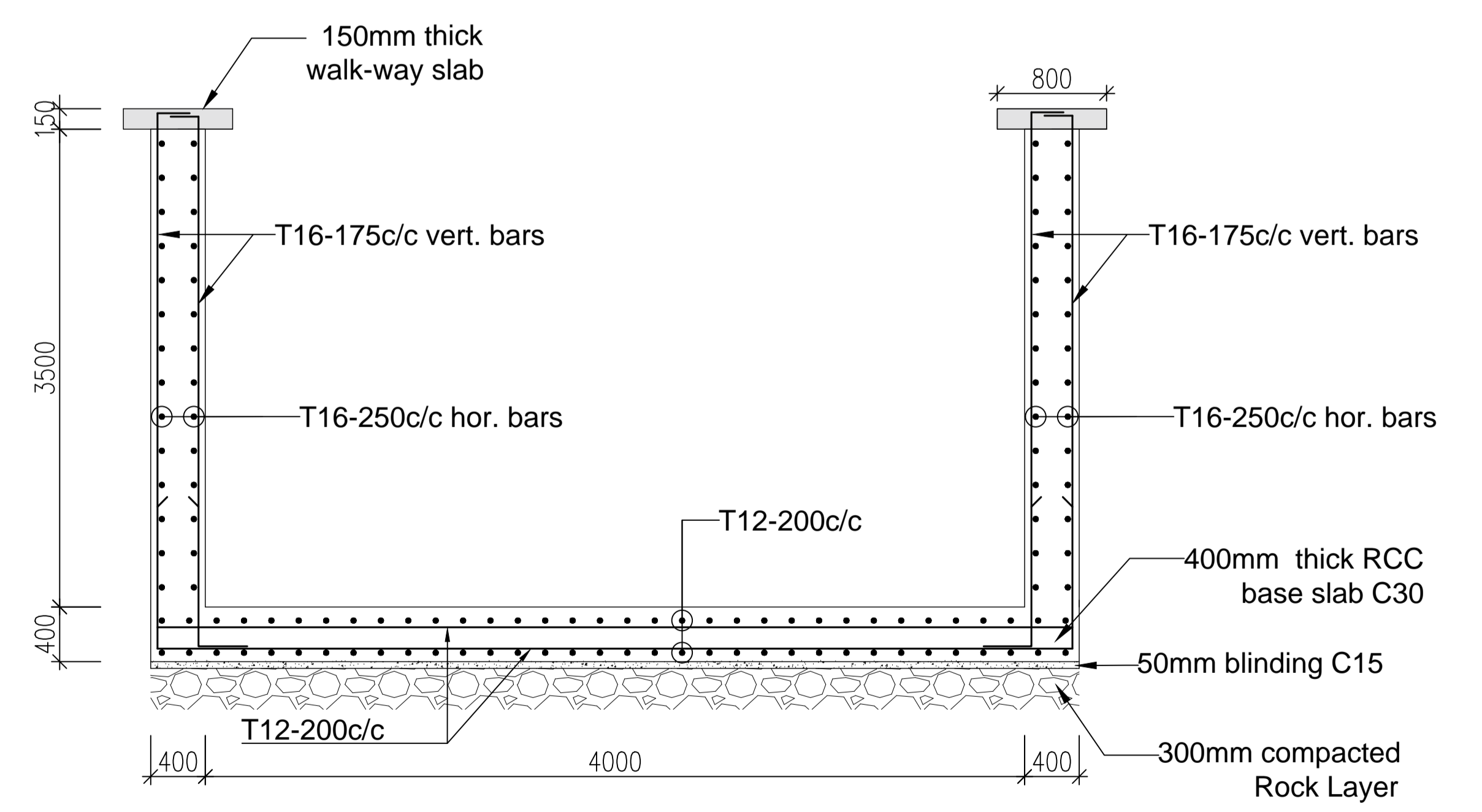




SECTION THRU WALKWAY SLAB



SECTION A - A



SECTION B - B

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:
DWG. TITLE

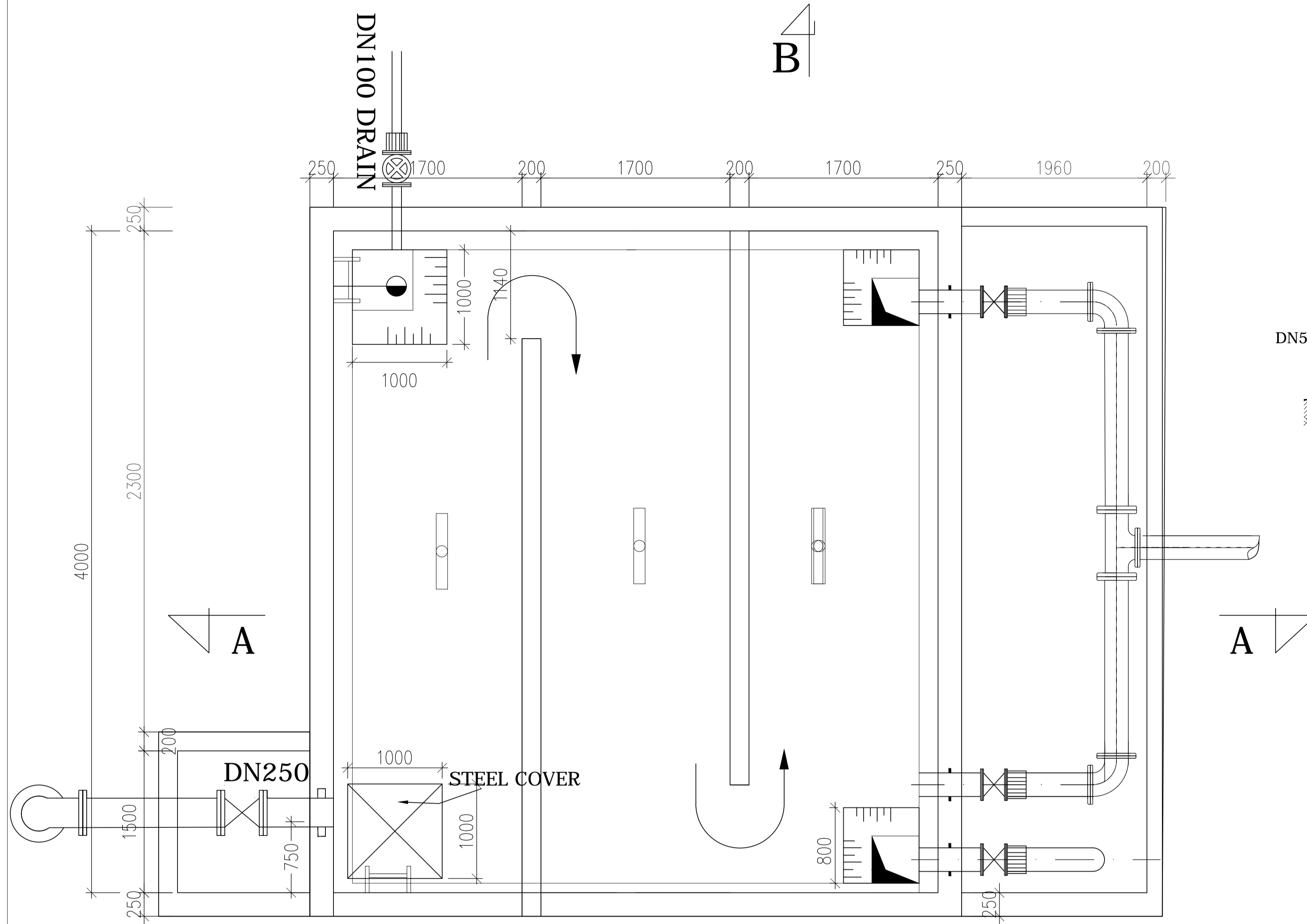
CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
RAPID SAND FILTER REINFORCEMENT DETAILS

REVISIONS	DATE:	DRAWN BY:	A.A
		CHECKED BY:	GS
		APPROVED BY:	PJM

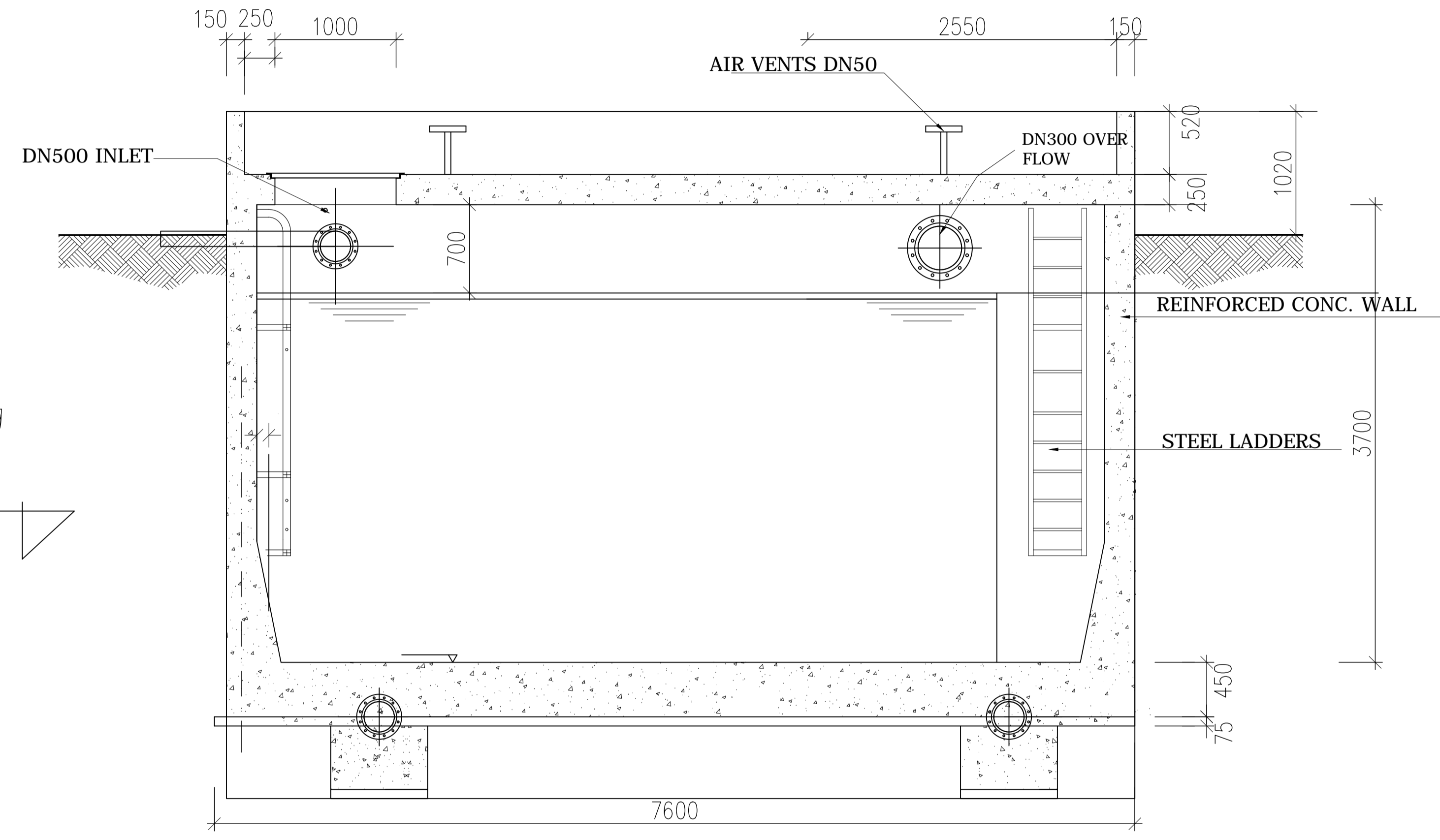
SCALE:
DATUM
Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

DWG. No.
KP/BWS/WTW/SF-02

SHEET



CLAER WATER TANK PLAN LAYOUT



SECTION B-B

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
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KAMPALA, UGANDA.

PROJECT:
DWG. TITLE

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
CLEAR WATER TANK PLAN AND SECTIONS

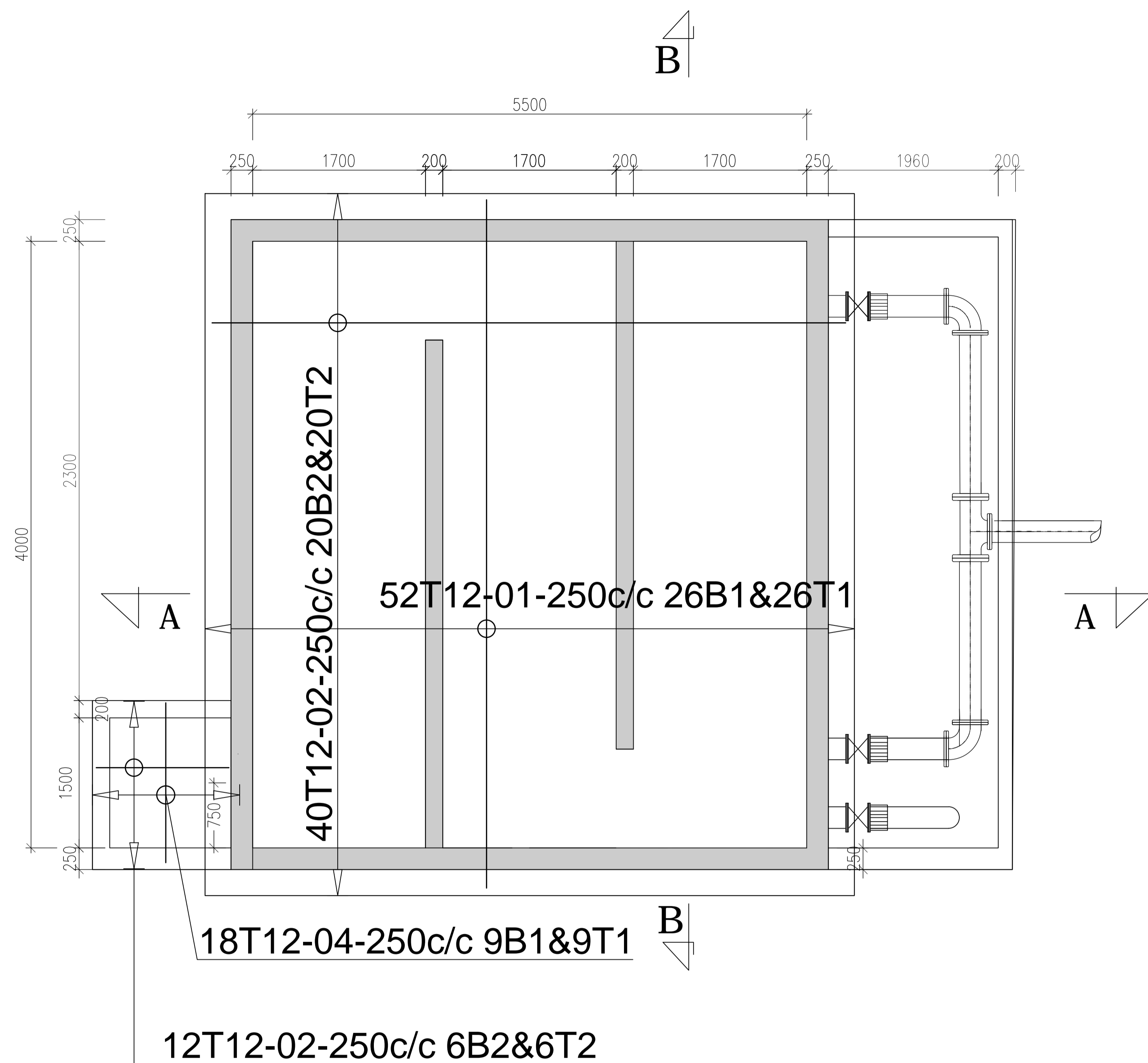
REVISIONS
DATE:

DRAWN BY: A.A
CHECKED BY: GS
APPROVED BY: PJM

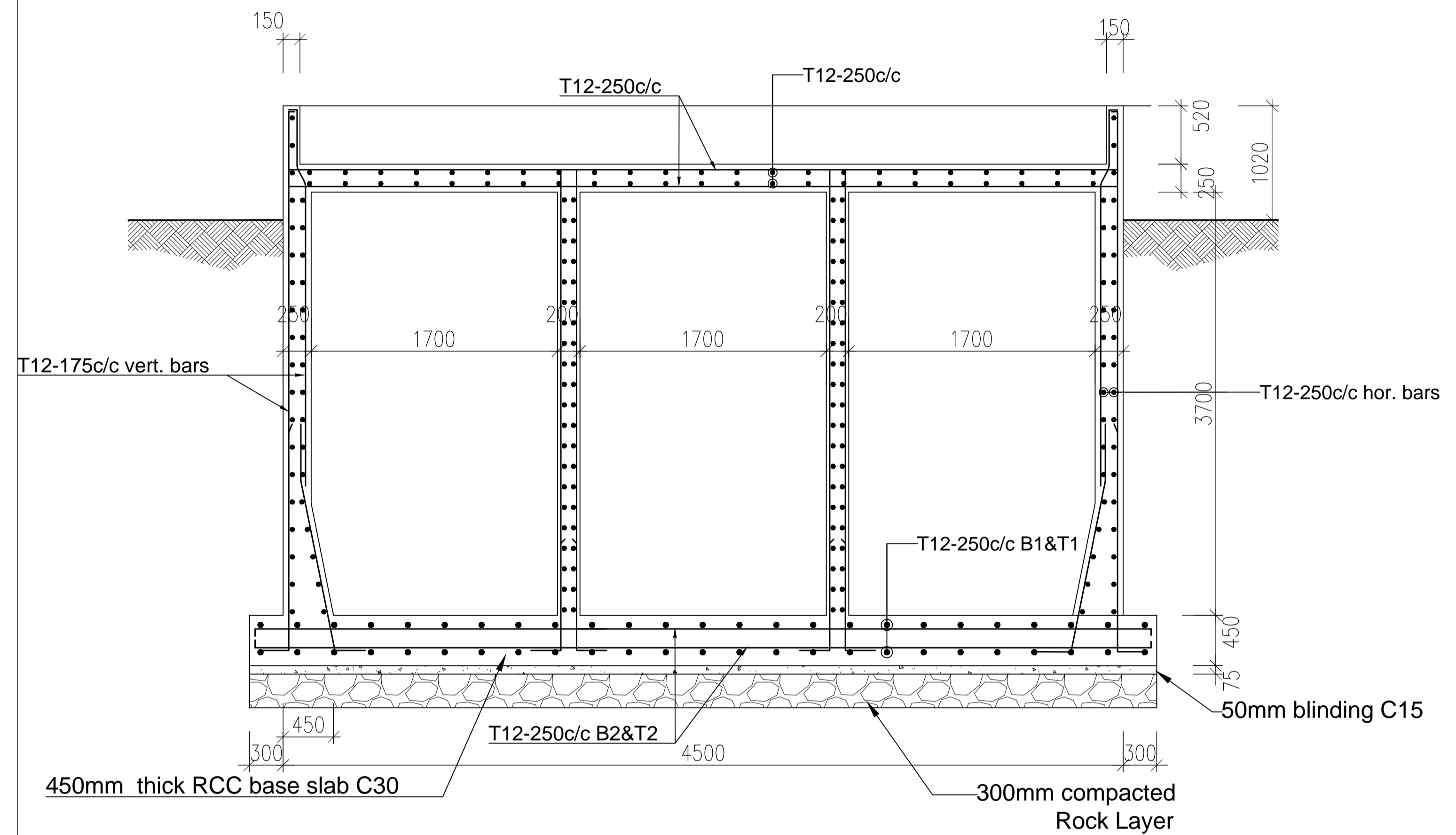
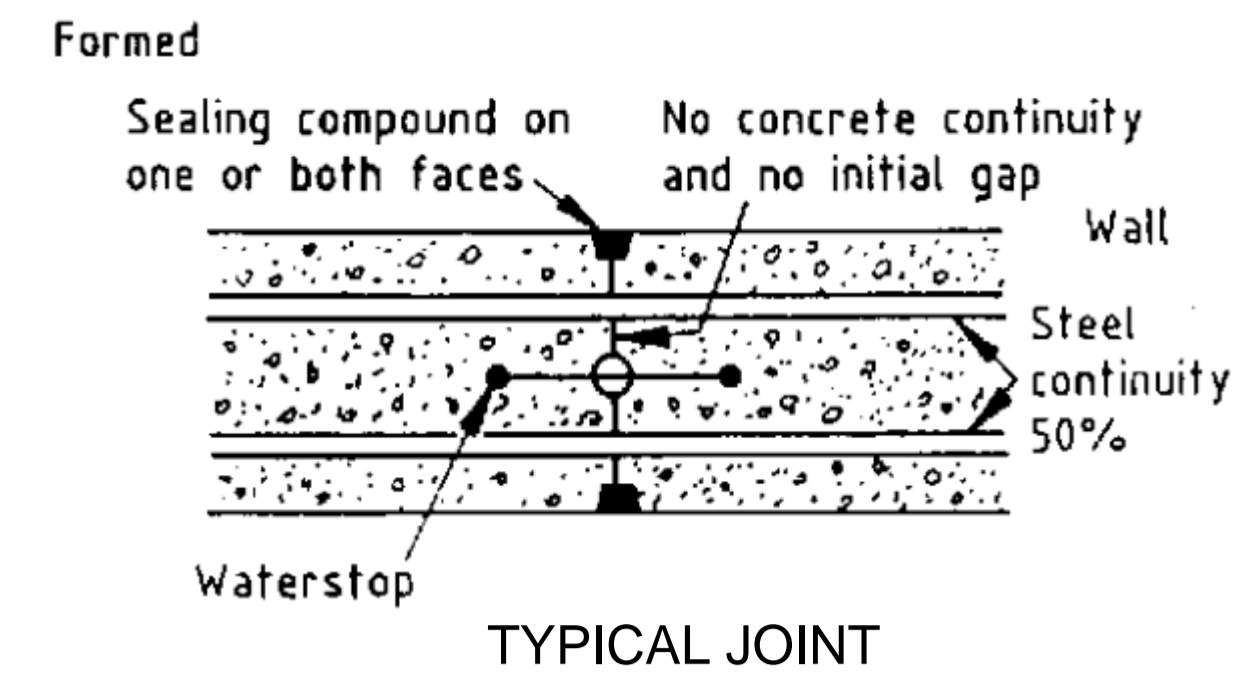
SCALE:
DATUM
Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

DWG. No.
KP/BWS/WTW/WT-01

SHEET



FOUNDATION PLAN



SECTION A-A

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
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PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

CLEAR WATER TANK PLAN AND SECTIONS

REVISIONS

DATE:

DRAWN BY: A.A
CHECKED BY: GS
APPROVED BY: PJM

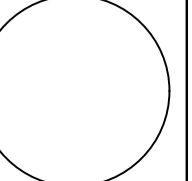
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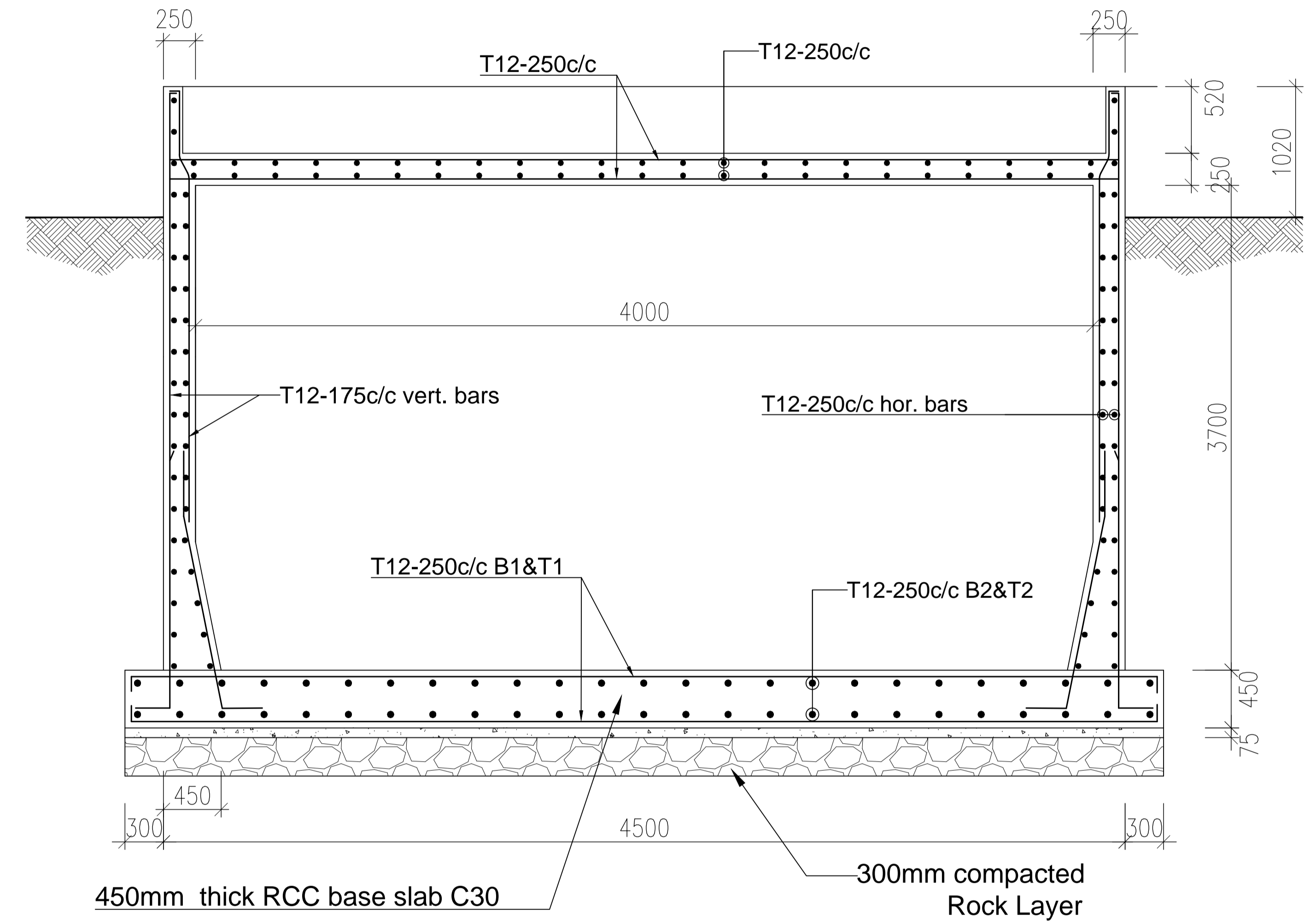
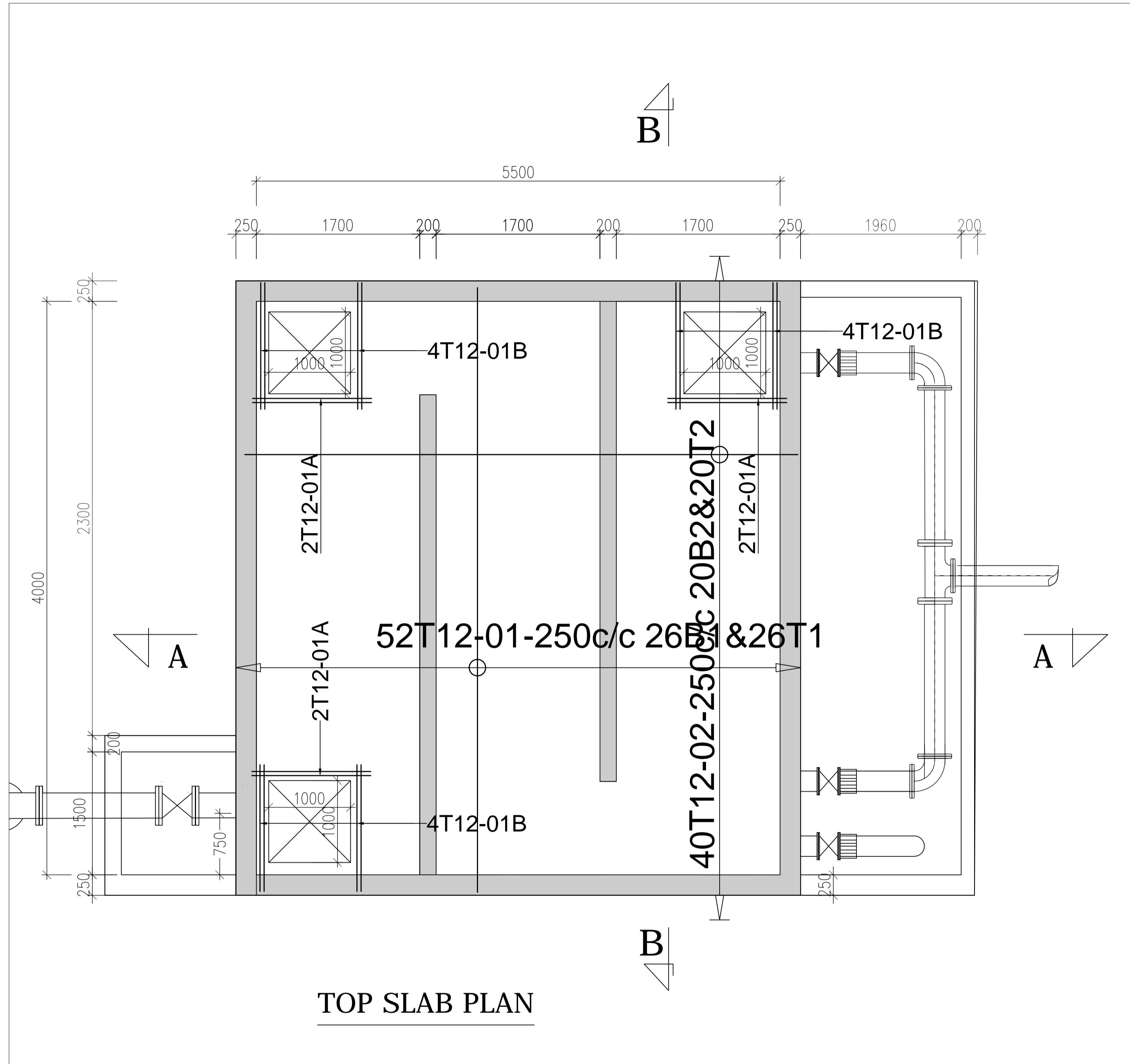
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DWG. No.

KP/BWS/WTW/WT-01

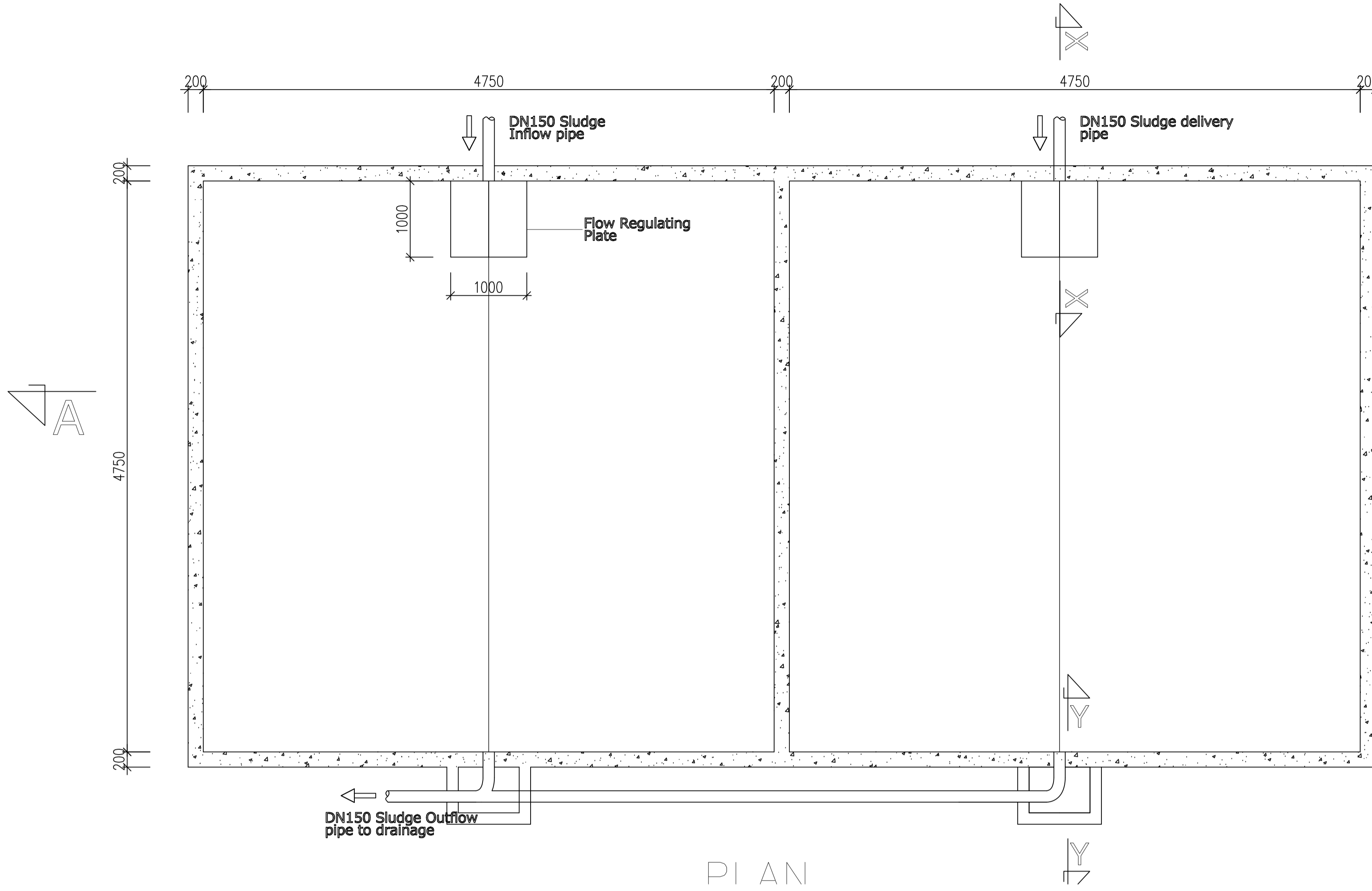
SHEET



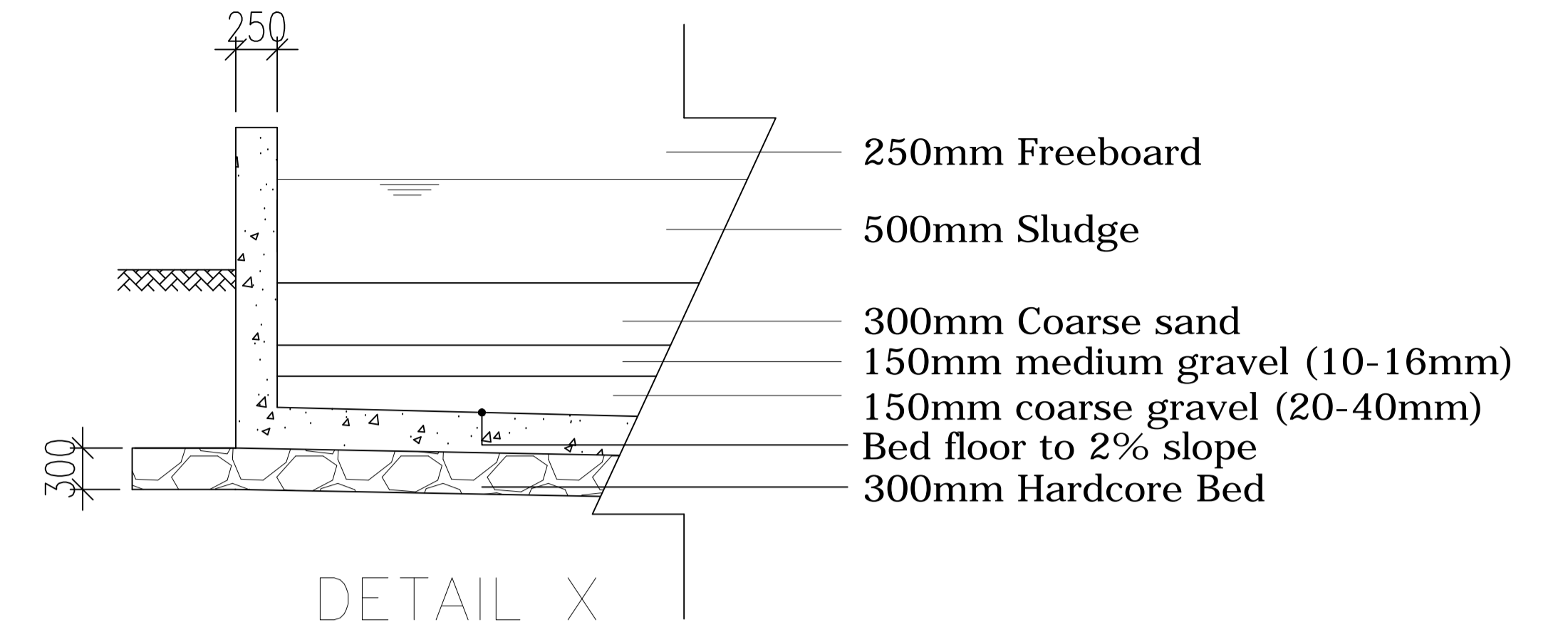


GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	KAGGA & PARTNERS  PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.	PROJECT:	CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM	REVISIONS	DATE:			SCALE:	DATUM	DWG. No.	SHEET 
		DWG. TITLE		CLEAR WATER TANK PLAN AND SECTIONS			DRAWN BY: A.A	CHECKED BY: GS	APPROVED BY: PJM	Vertical: New Khartoum	
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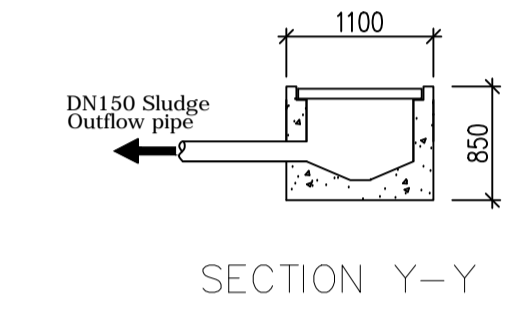
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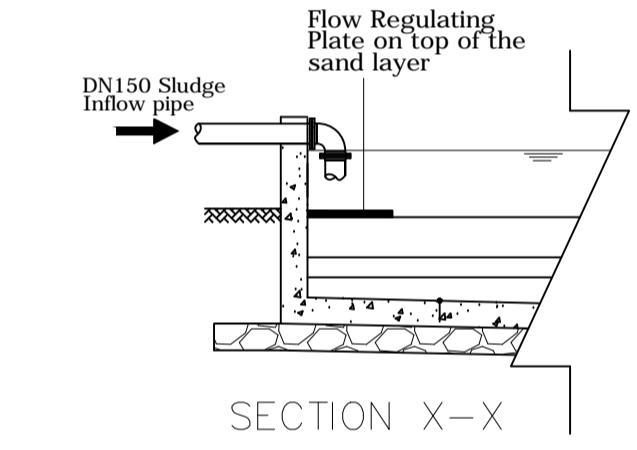
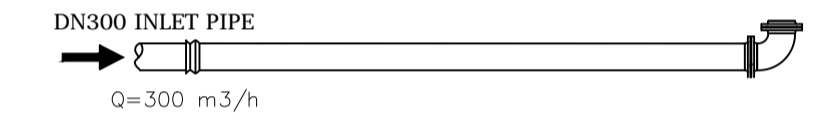
PLAN



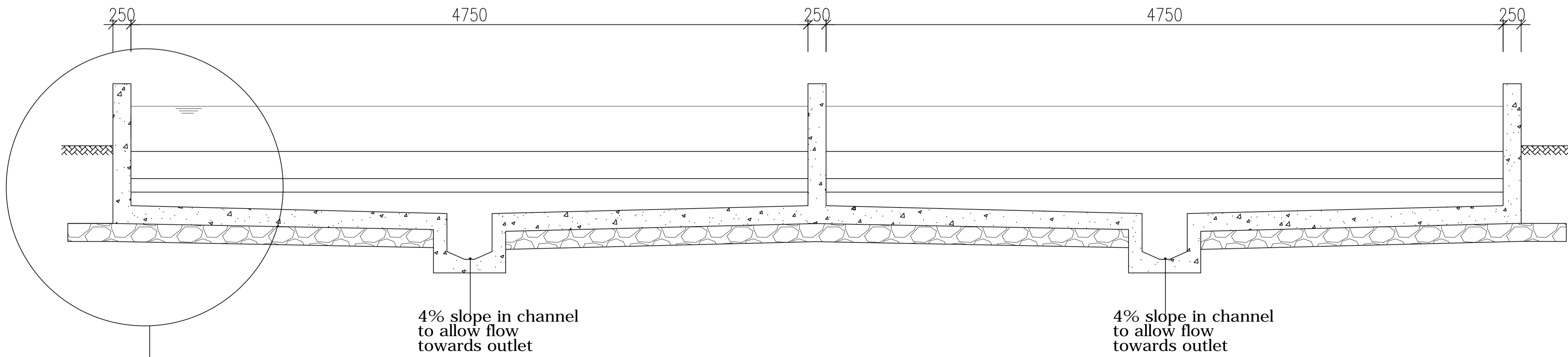
DETAIL X



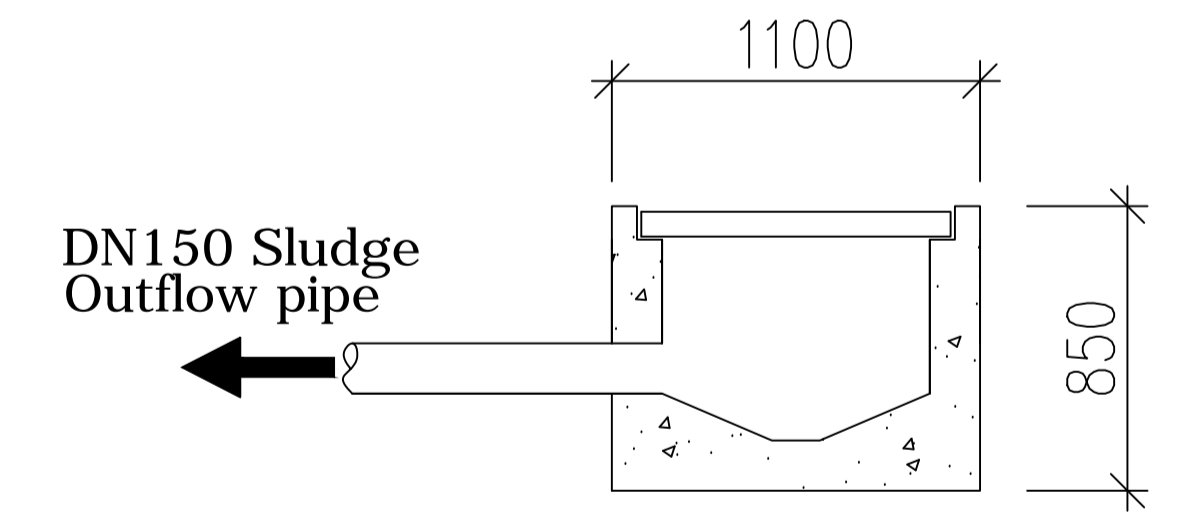
SECTION Y-Y



SECTION X-X



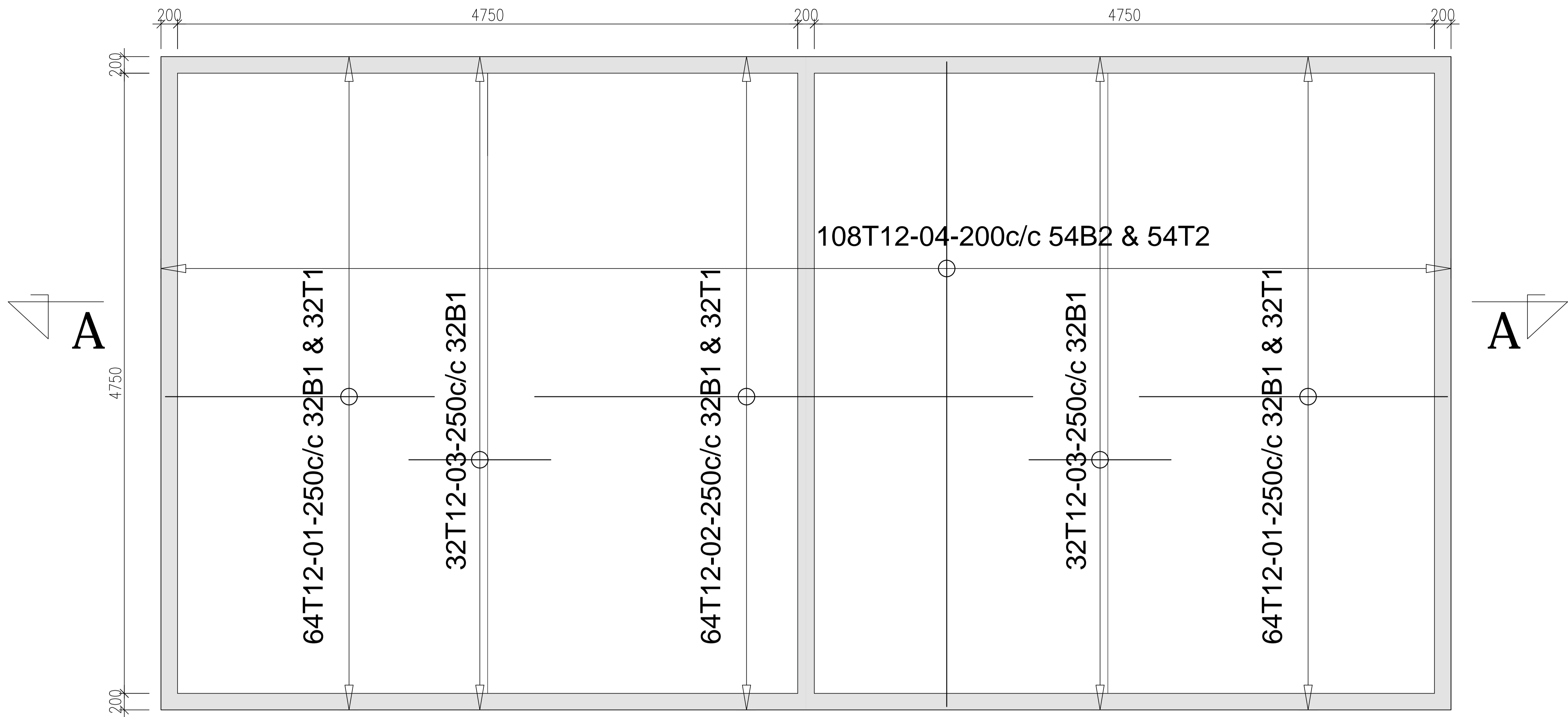
SECTION A - A



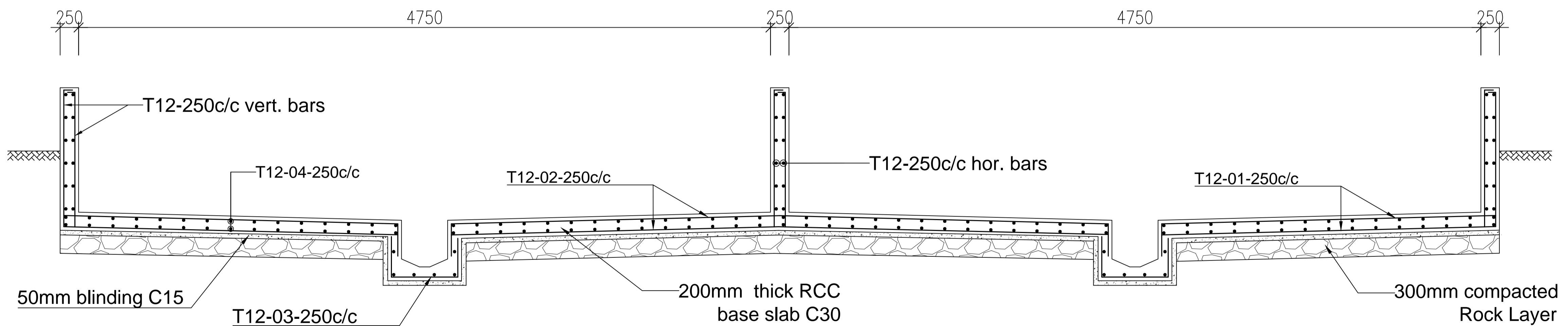
SECTION Y-Y

DETAIL X

GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	KAGGA & PARTNERS PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.	PROJECT:	CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM	REVISIONS	DATE:			SCALE:	DATUM	DWG. No.	SHEET
		DWG. TITLE		RAPID SAND FILTER PLAN AND SECTIONS			DRAWN BY: A.A	CHECKED BY: GS	APPROVED BY: PJM	Vertical: New Khartoum	
									Horizontal: UTM ZONE 36N ARC 60		



FOUNDATION PLAN



SECTION A - A

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS

 PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
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 P.O. BOX 6583,
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PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

SLUDGE DRYING BED REINFORCEMENT DETAILS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

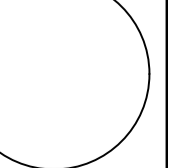
Vertical: New Khartoum

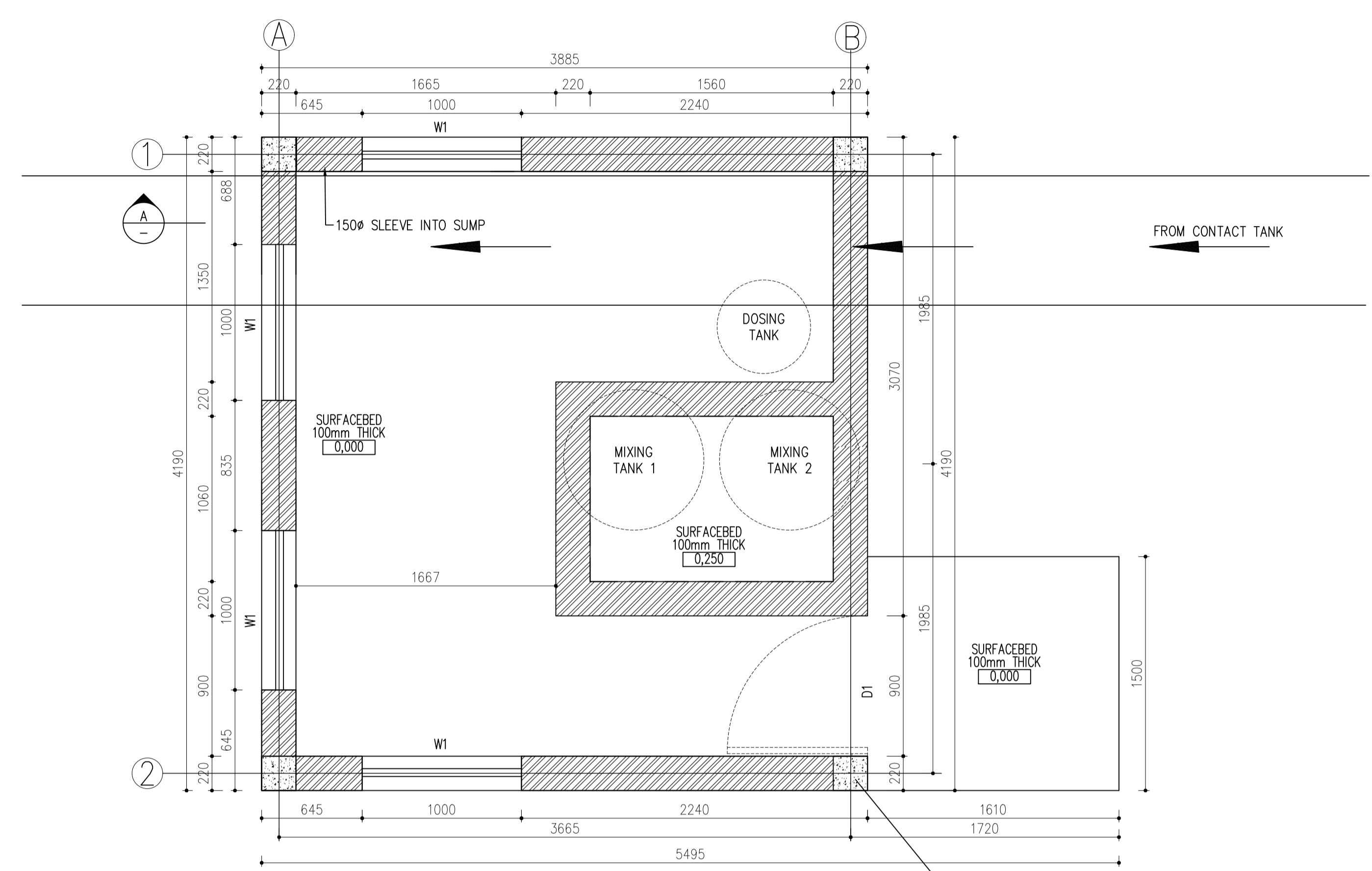
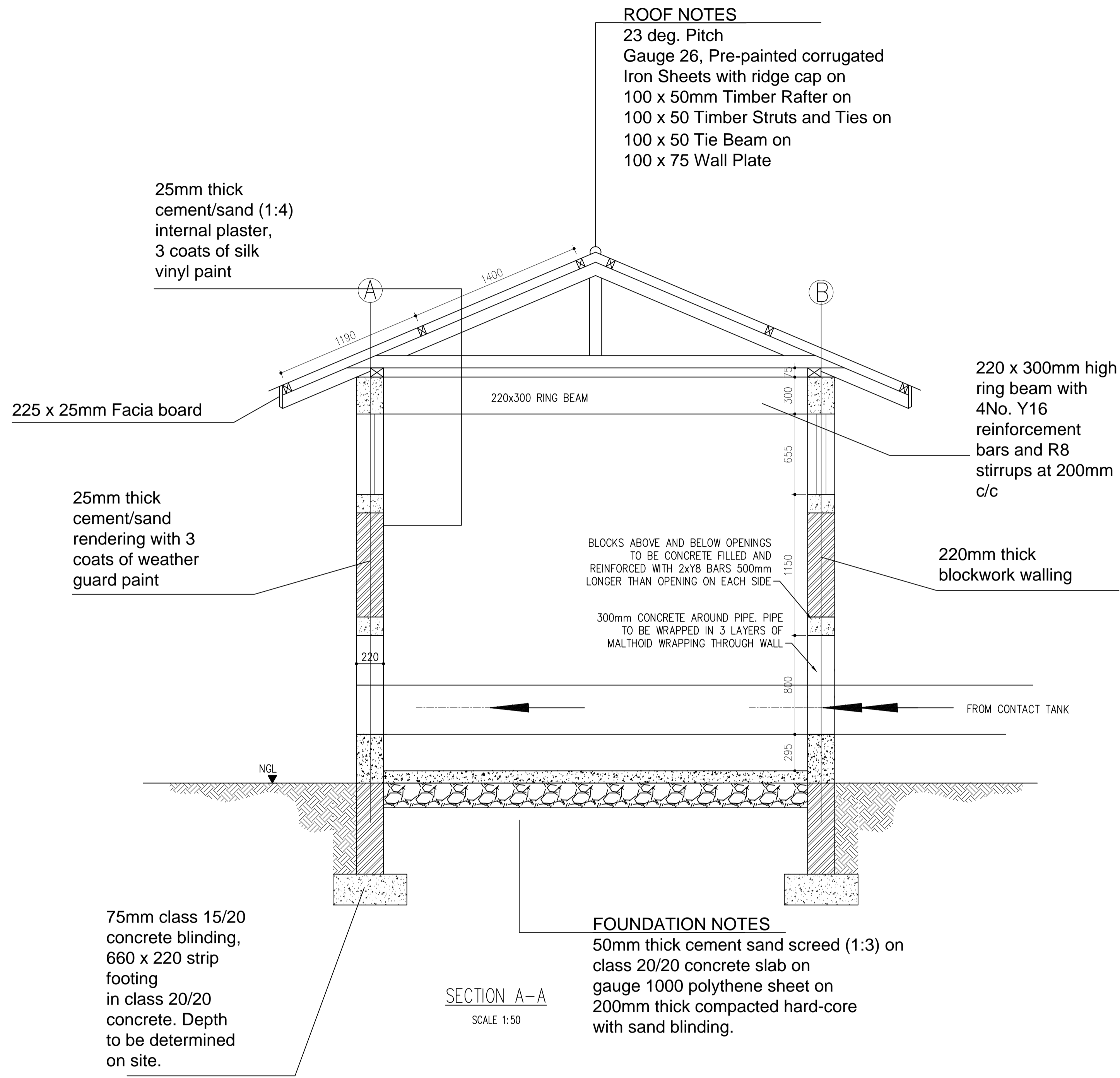
Horizontal: UTM ZONE 36N ARC 60

DWG. No.

KP/BWS/WTW/SDB-01

SHEET





PLAN LAYOUT
SCALE 1:25

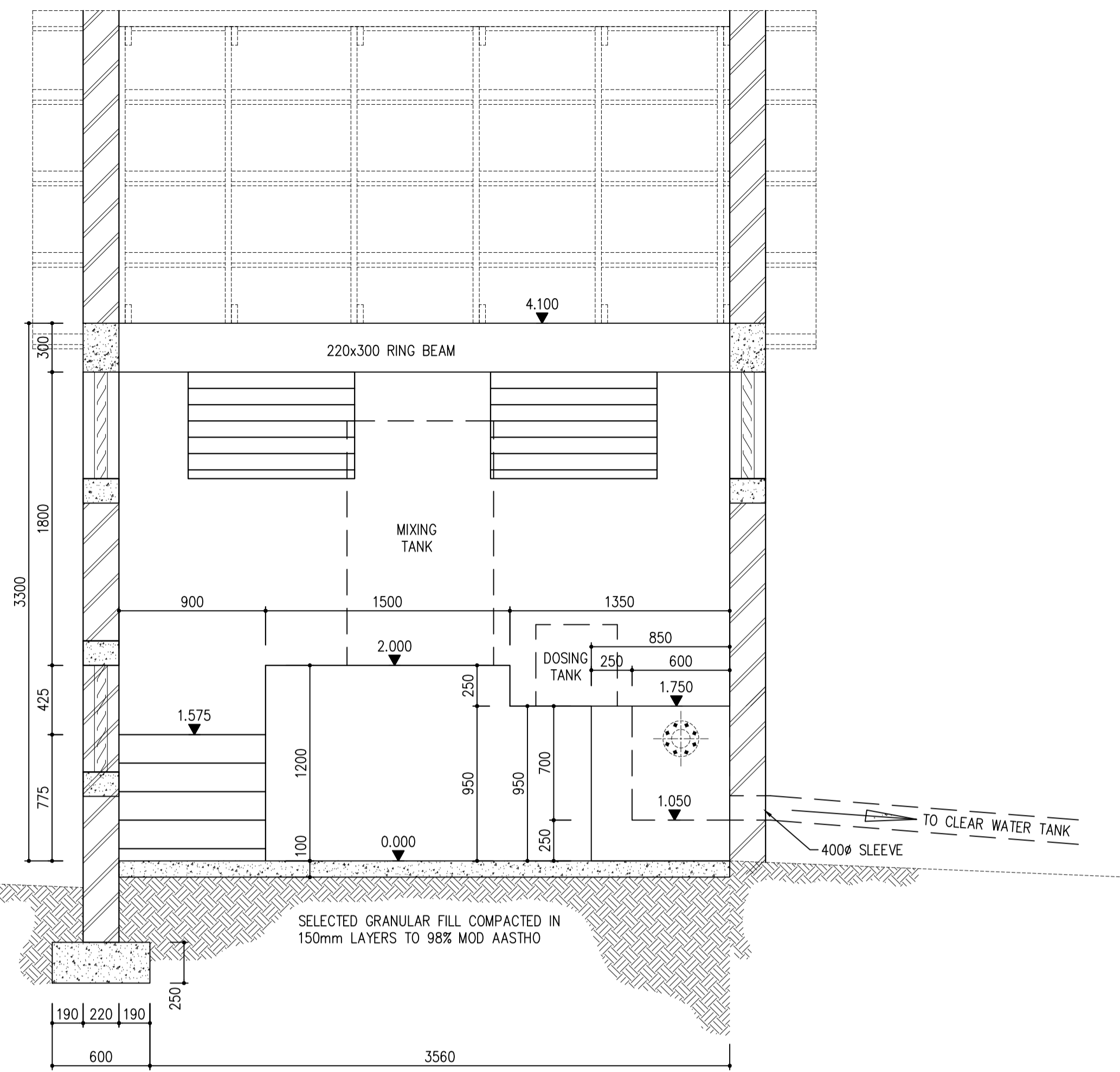
WINDOW SCHEDULE

TYPE OF WINDOW	TOTAL NO.	SIZE
Steel Casement Side hung Window W1 with 4mm clear sheet glass complete with fasteners, stays and burglar proof to Engineers approval	4	1000 x 650mm high

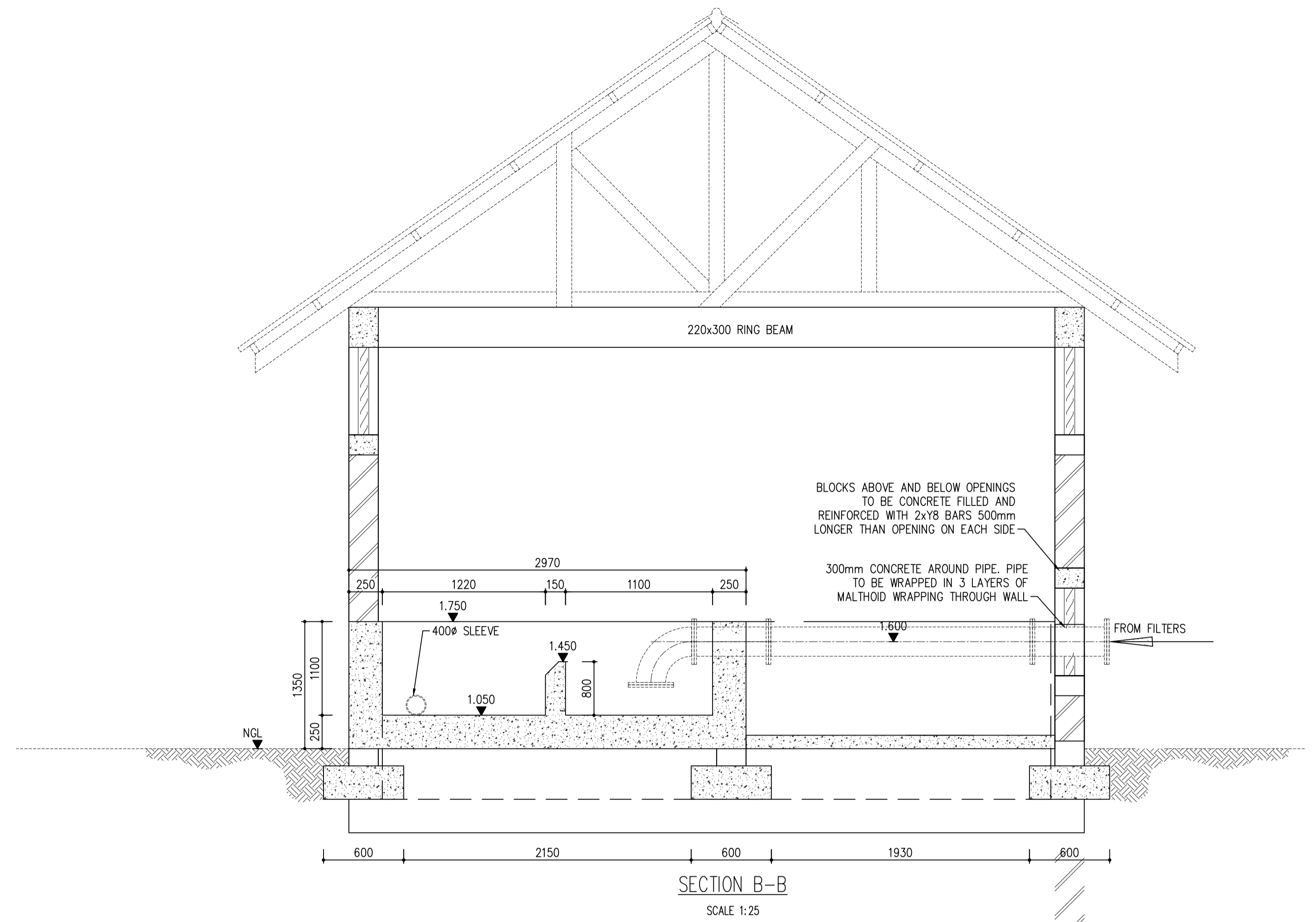
DOOR SCHEDULE

TYPE OF DOOR	TOTAL NO.	SIZE
Steel Door D1 with PVO, Fabricated from 3mm thick Mild Steel Plate to Engineers approval	1	900 x 2400mm high

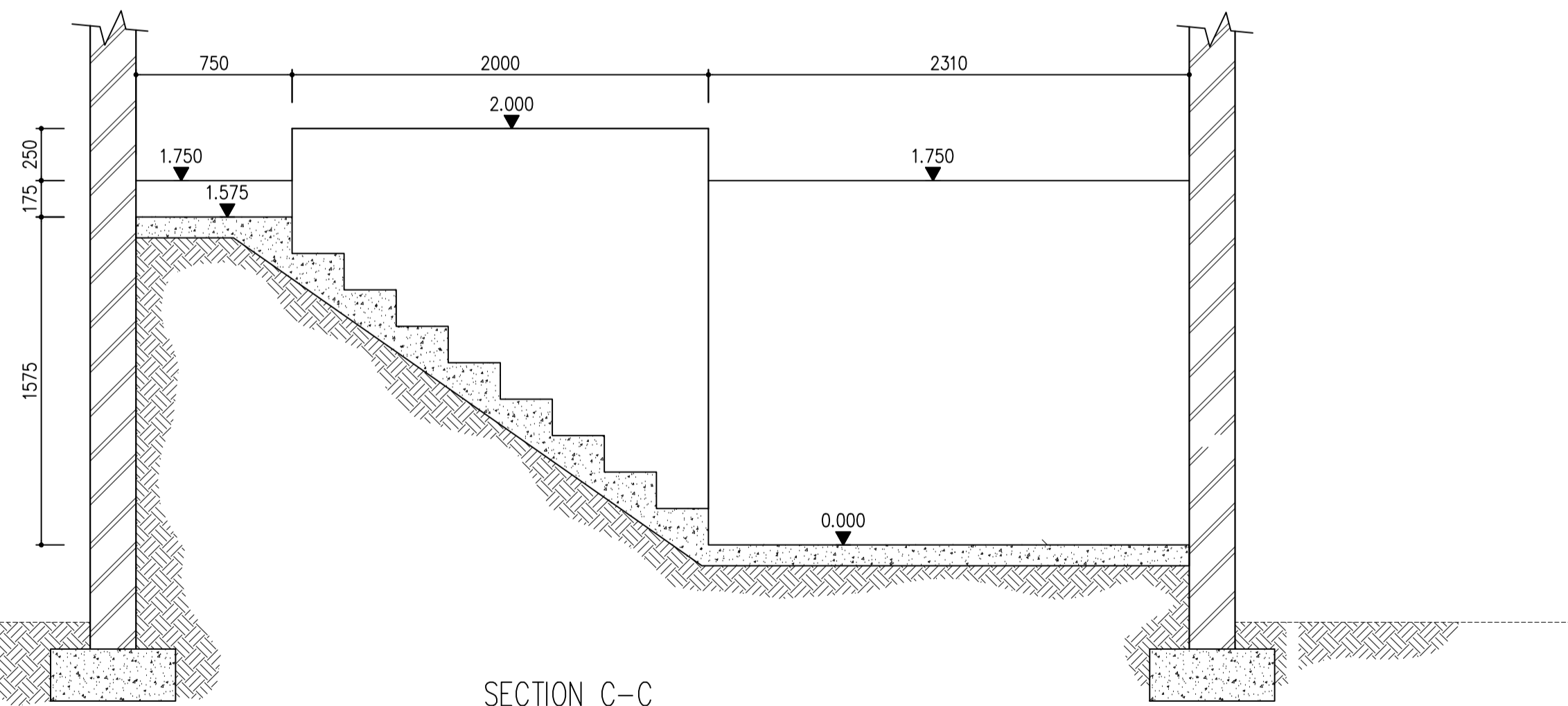
- NOTES**
1. Walls to be painted with 3 coats of silkvinly internally and 3 coats of weather gaurd externally.
 2. Soft board Ceiling (with Pine Timber Blandering) to be painted with 3 coats of emulsion paint.
 3. Class C20/20 Reinforced Concrete Lintel with 4Y12 and R6 rebars at 150mm c/c to be provide at door opening.



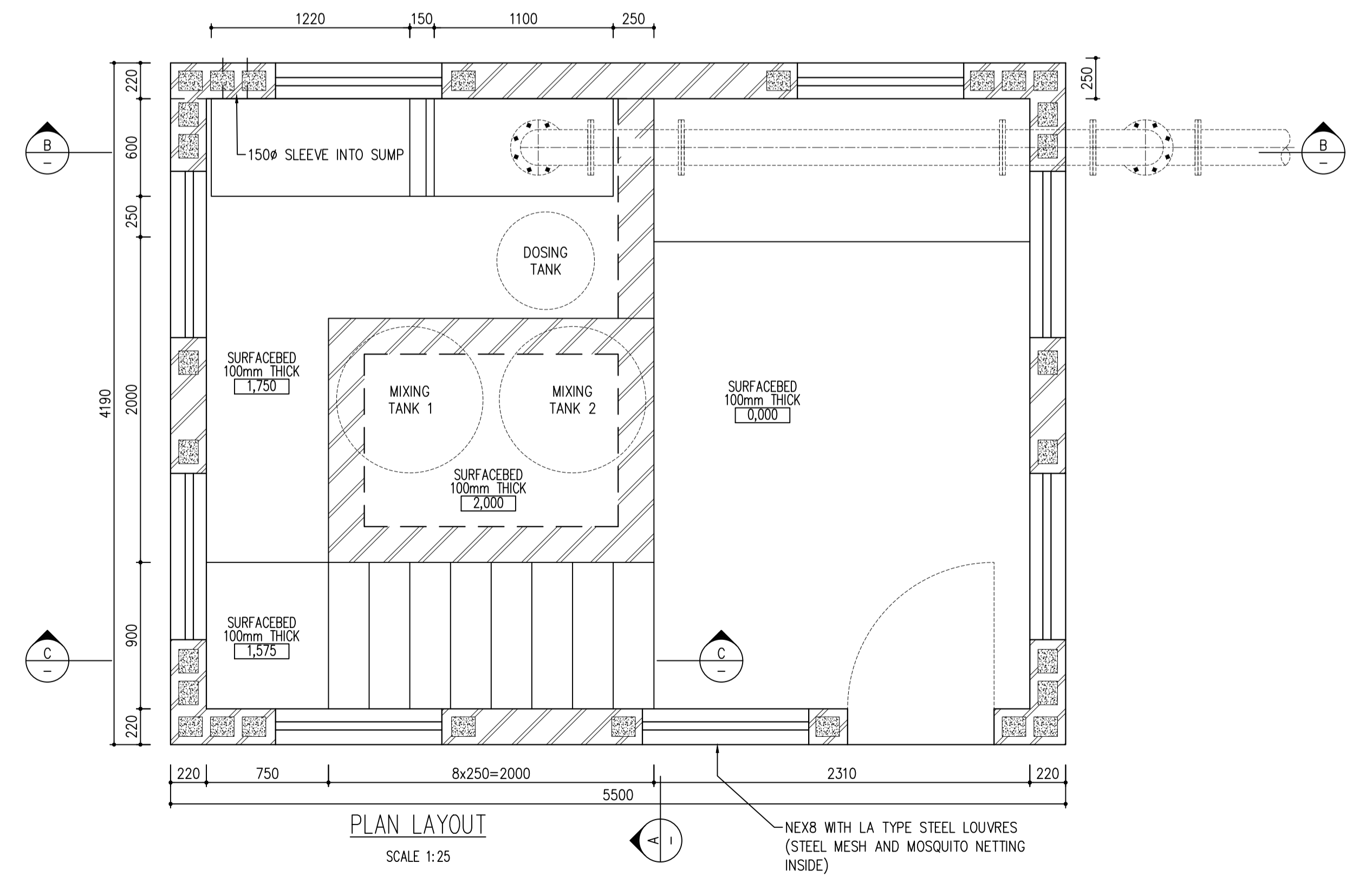
SECTION A-A
SCALE 1:25



SECTION B-B
SCALE 1:25



SECTION C-C
SCALE 1:25



PLAN LAYOUT
SCALE 1:25

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

CHLORINE DOSING UNIT

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

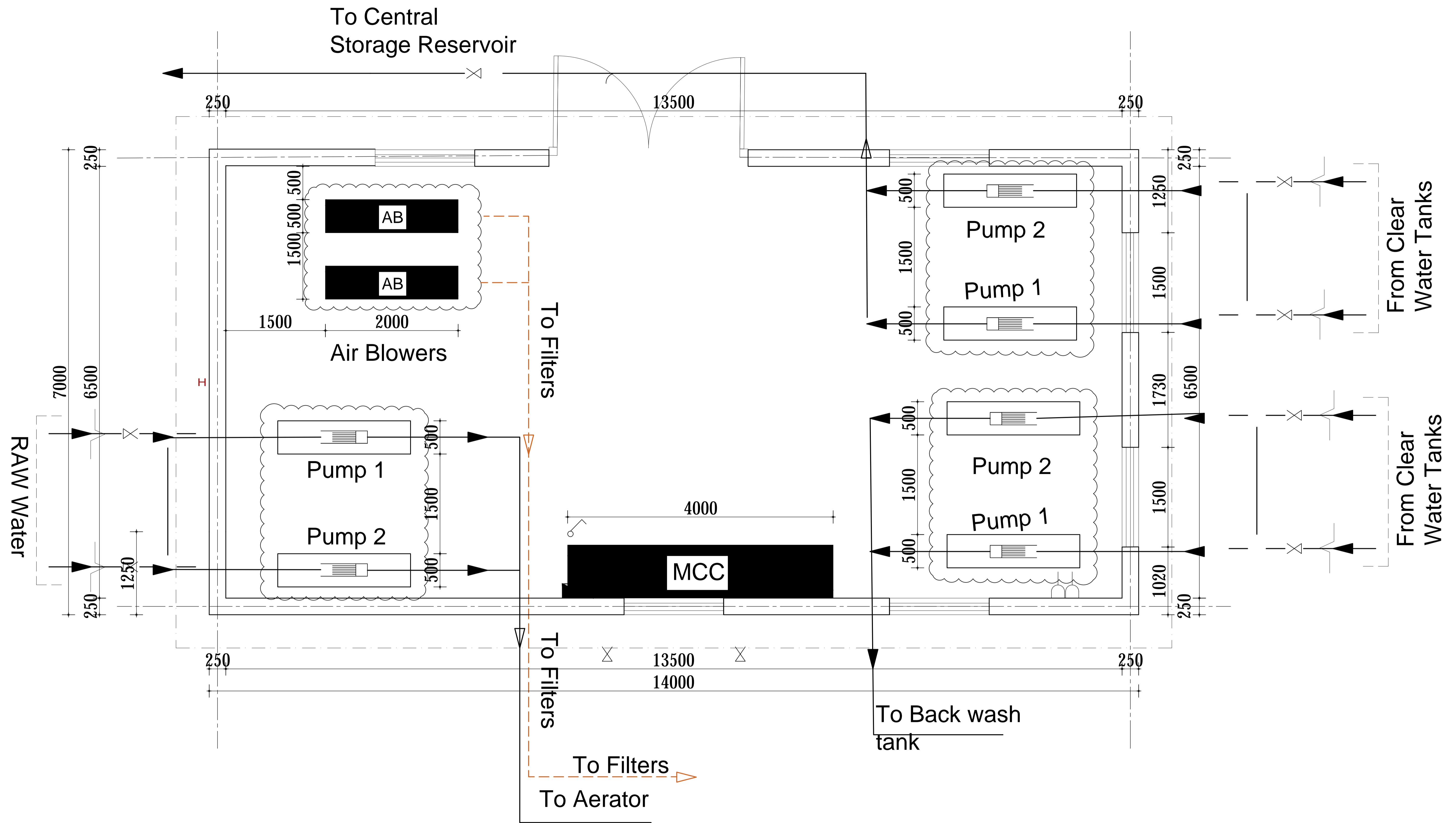
Vertical: New Khartoum

Horizontal: UTM ZONE 36N ARC 60

DWG. No.

KP/BWS/WTW/CDU-01

SHEET



RAW AND TREATED WATER PUMP HOUSE LAY-OUT

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

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CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

MAIN RAW AND TREATED WATER PUMP HOUSE

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

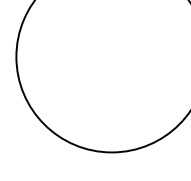
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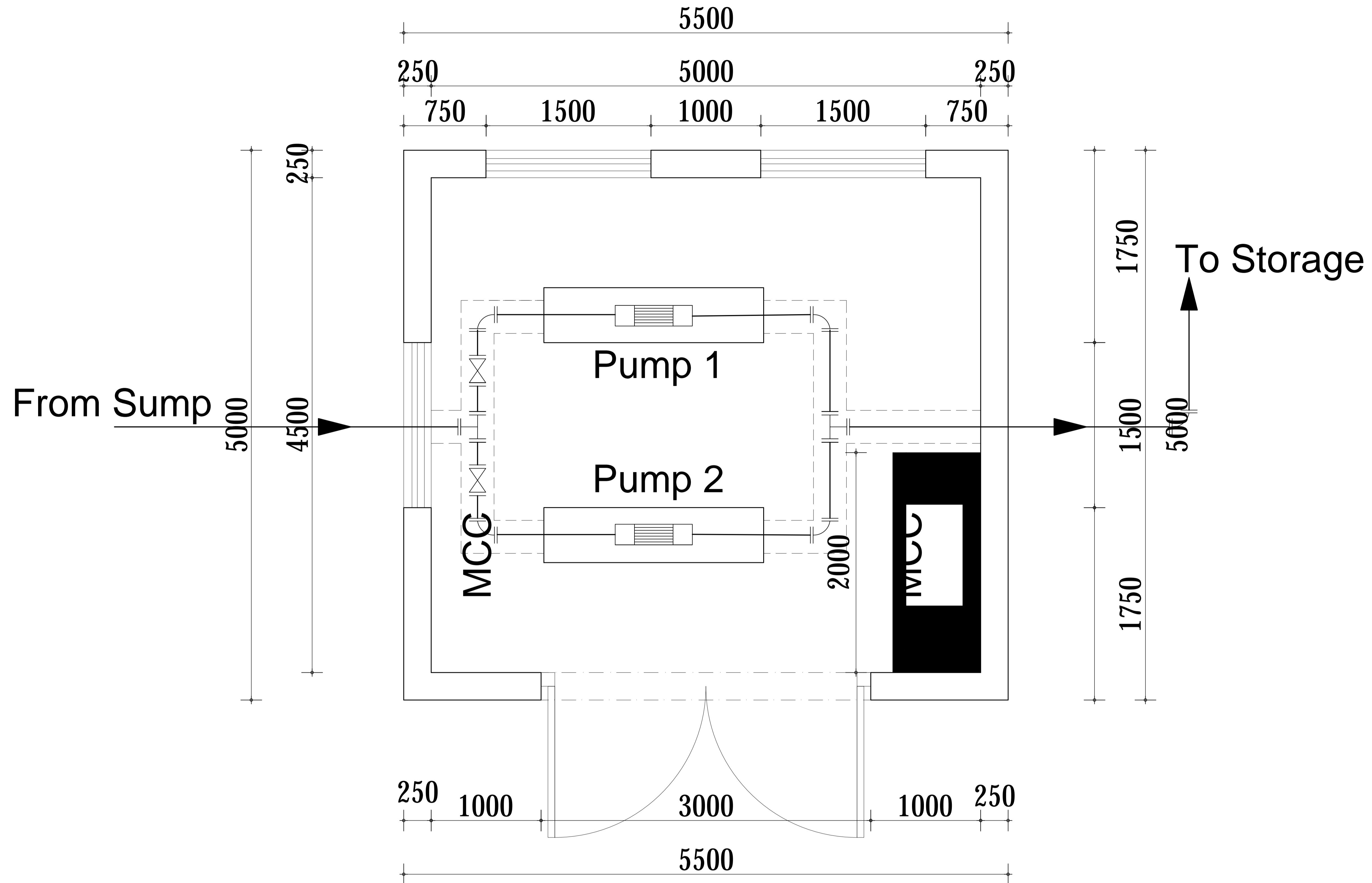
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DWG. No.

KP/BWS/WTW/PH-01

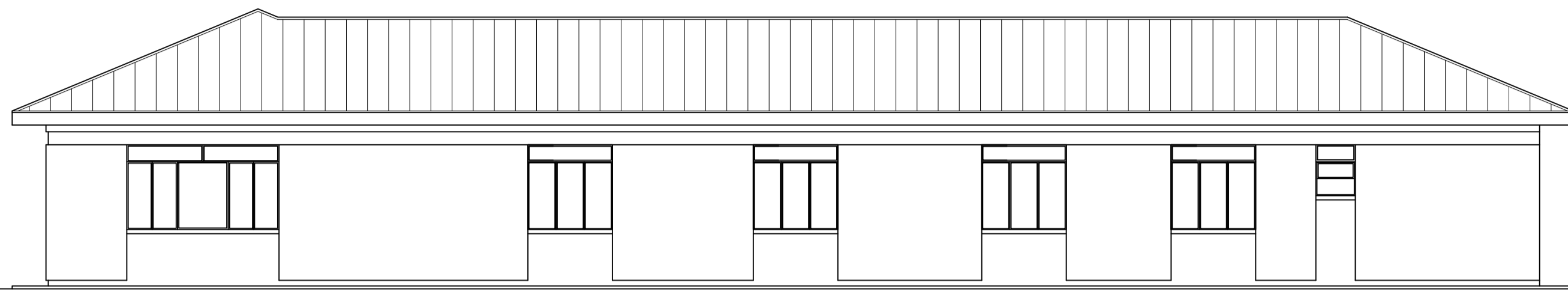
SHEET





KARUNGU BOOSTER PUMP HOUSE LAY-OUT PLAN

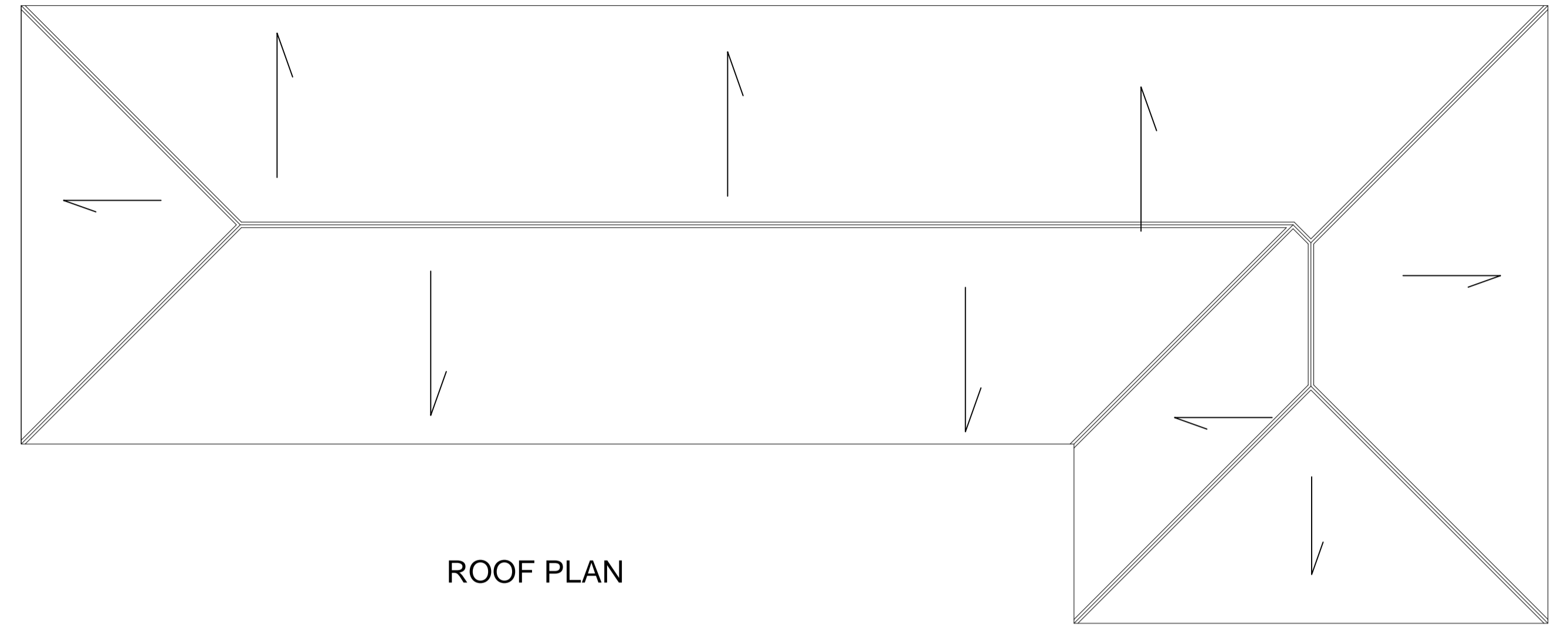
GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	KAGGA & PARTNERS PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.	PROJECT:	CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM	REVISIONS	DATE:	DRAWN BY:	A.A	SCALE:	DATUM	DWG. No.	SHEET
		DWG. TITLE	KARUNGU BOOSTER PUMP HOUSE PLAN			DRAWN BY:	GS			Vertical: New Khartoum	
						APPROVED BY:	PJM		Horizontal: UTM ZONE 36N ARC 60		



REAR ELEVATION



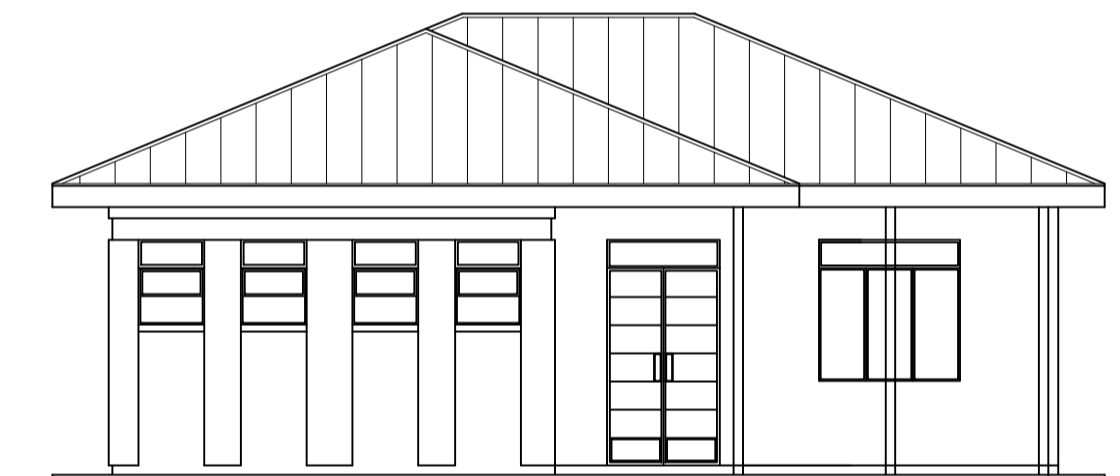
FRONT ELEVATION



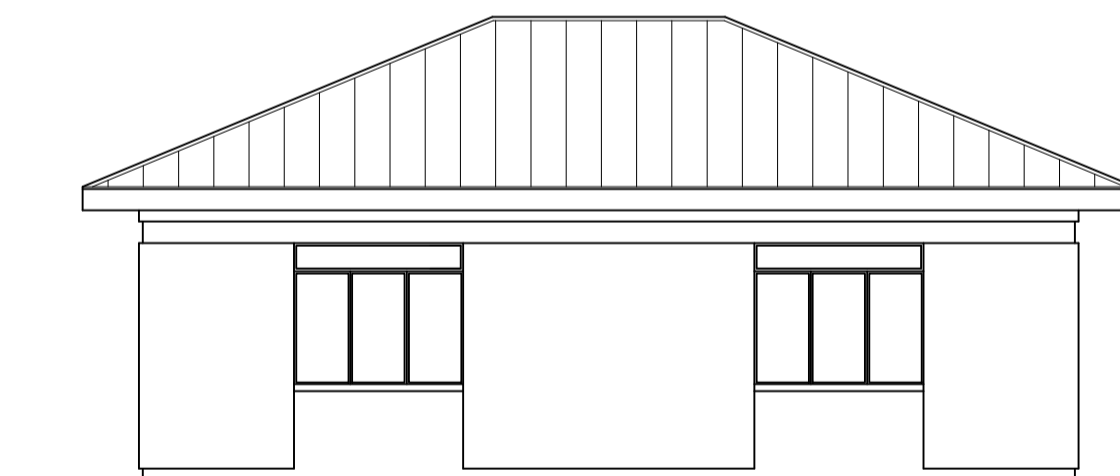
ROOF PLAN

DOOR SCHEDULE.				
SYMBOL	HEIGHT	WIDTH	No. REQ	REMARK.
D1	2100	1200	2	STEEL CASEMENT DOORS WITH.PV
D2	2100	900	3	STEEL CASEMENT DOORS WITH.PV
D3	2100	900	1	FRAMED WOODEN DOORS.PV
D4	2100	800	5	FRAMED WOODEN DOORS.

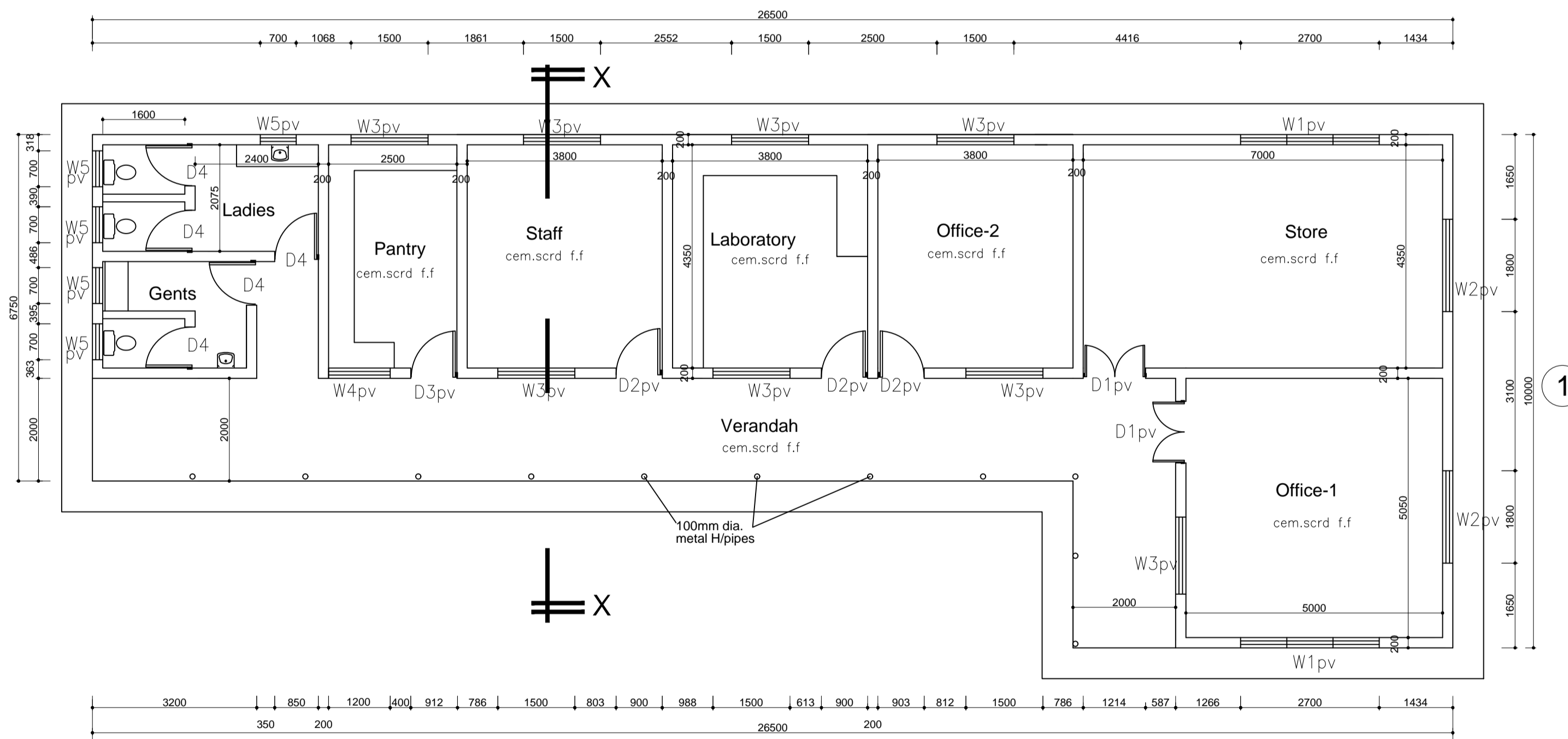
WINDOW SCHEDULE.				
SYMBOL	HEIGHT	WIDTH	No. REQ	REMARK.
W1	1200	2700	2	STEEL CASEMENT WINDOW
W2	1200	1800	2	-DO-
W3	1200	1500	8	-DO-
W4	1200	1200	1	-DO-
W5	600	700	5	STEEL WINDOW TOP HANG



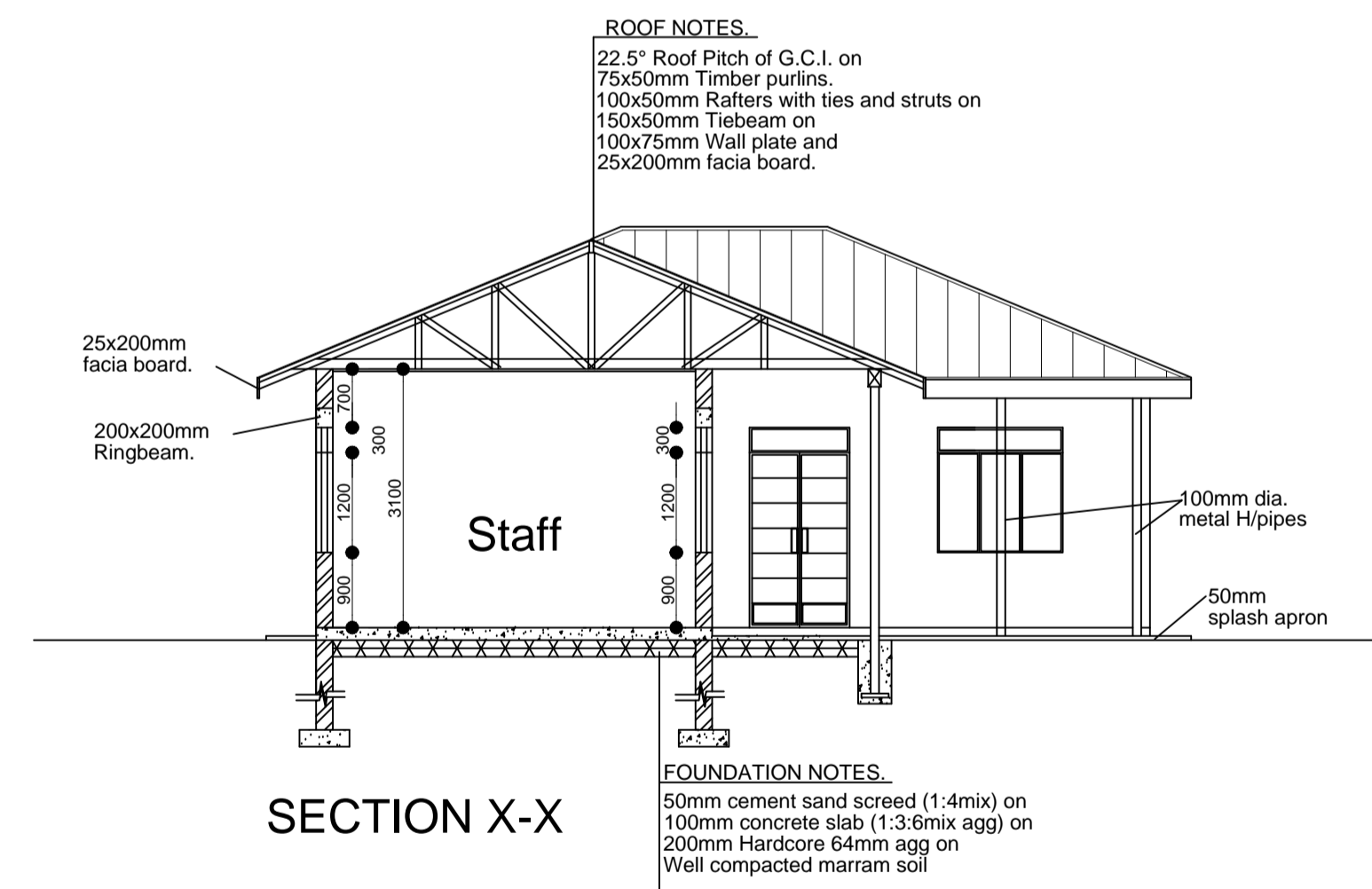
SIDE 2 ELEVATION



SIDE 1 ELEVATION



GROUND PLAN



SECTION X-X


ROOF NOTES.
 22.5° Roof Pitch of G.C.I. on
 75x50mm Timber purlins.
 100x50mm Rafter with ties and struts on
 150x50mm Tiebeam on
 100x75mm Wall plate and
 25x200mm fascia board.

FOUNDATION NOTES.
 50mm cement sand screed (1:4mix) on
 100mm concrete slab (1:3:6mix agg) on
 200mm Hardcore 64mm agg on
 Well compacted marram soil

2

1

GOVERNMENT OF UGANDA
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DWG. TITLE

WTW ADMINISTRATION AND LAB BLOCK DETAILS

REVISIONS

DATE:

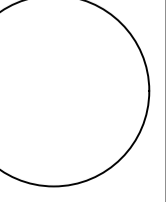
DRAWN BY: A.A
 CHECKED BY: GS
 APPROVED BY: PJM

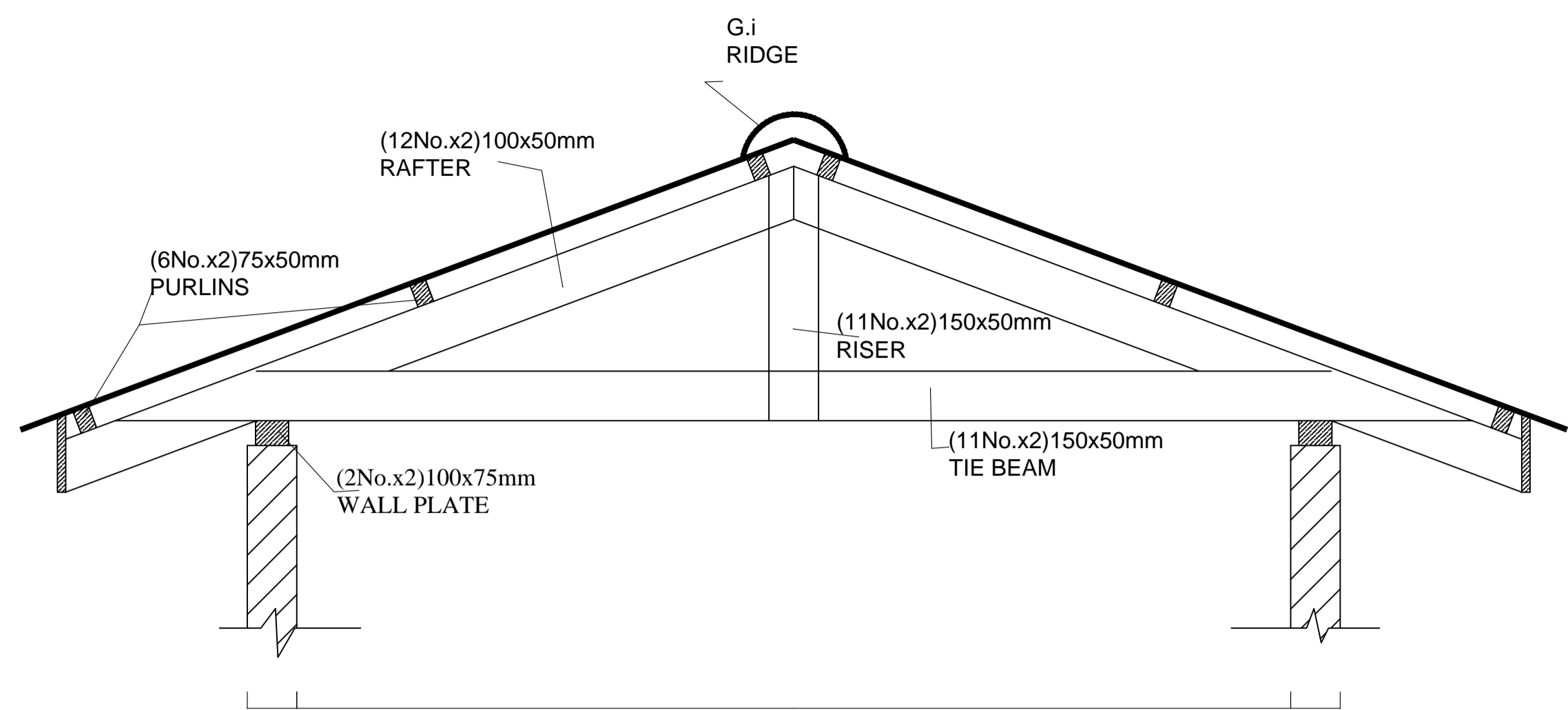
SCALE:

DATUM
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 Horizontal: UTM ZONE 36N ARC 60

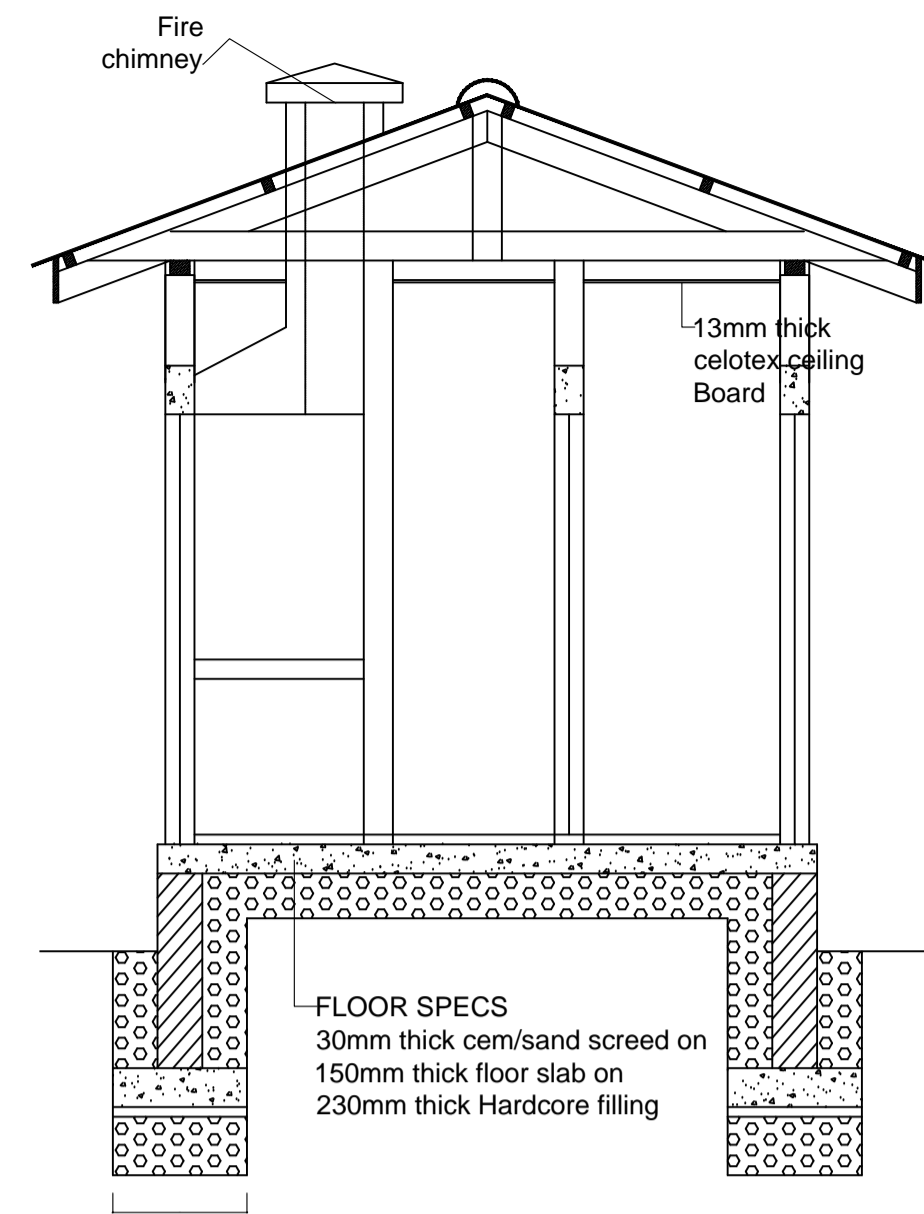
DWG. No.
 KP/BWS/WTW/ST-01

SHEET

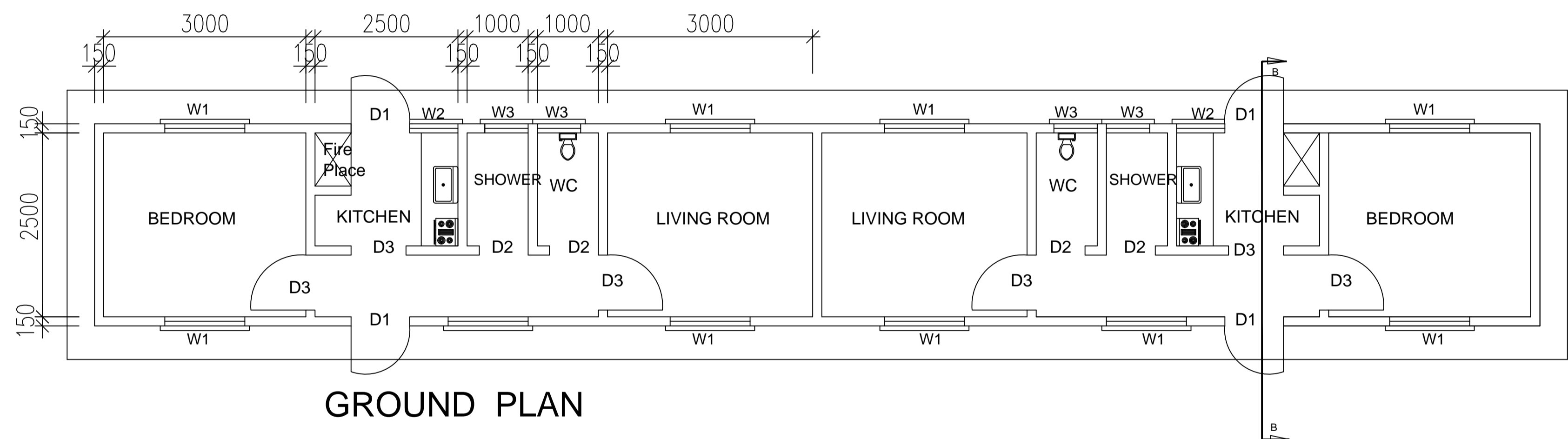
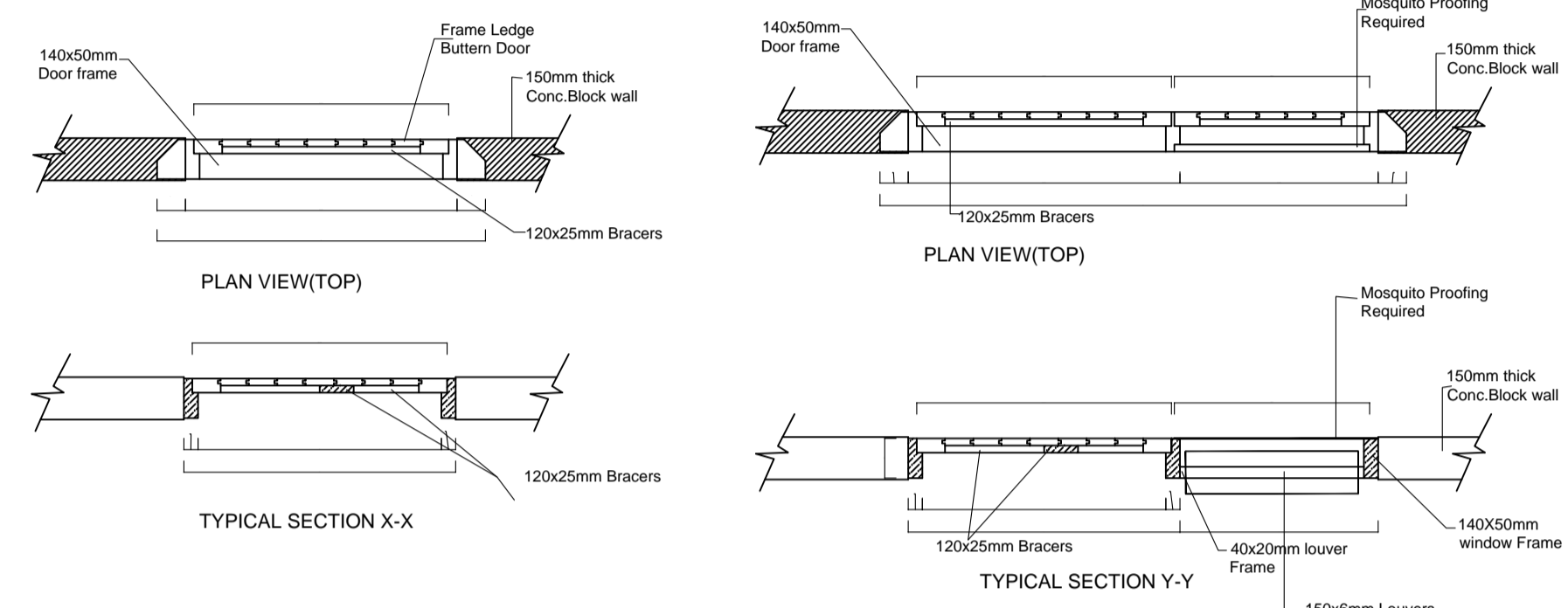
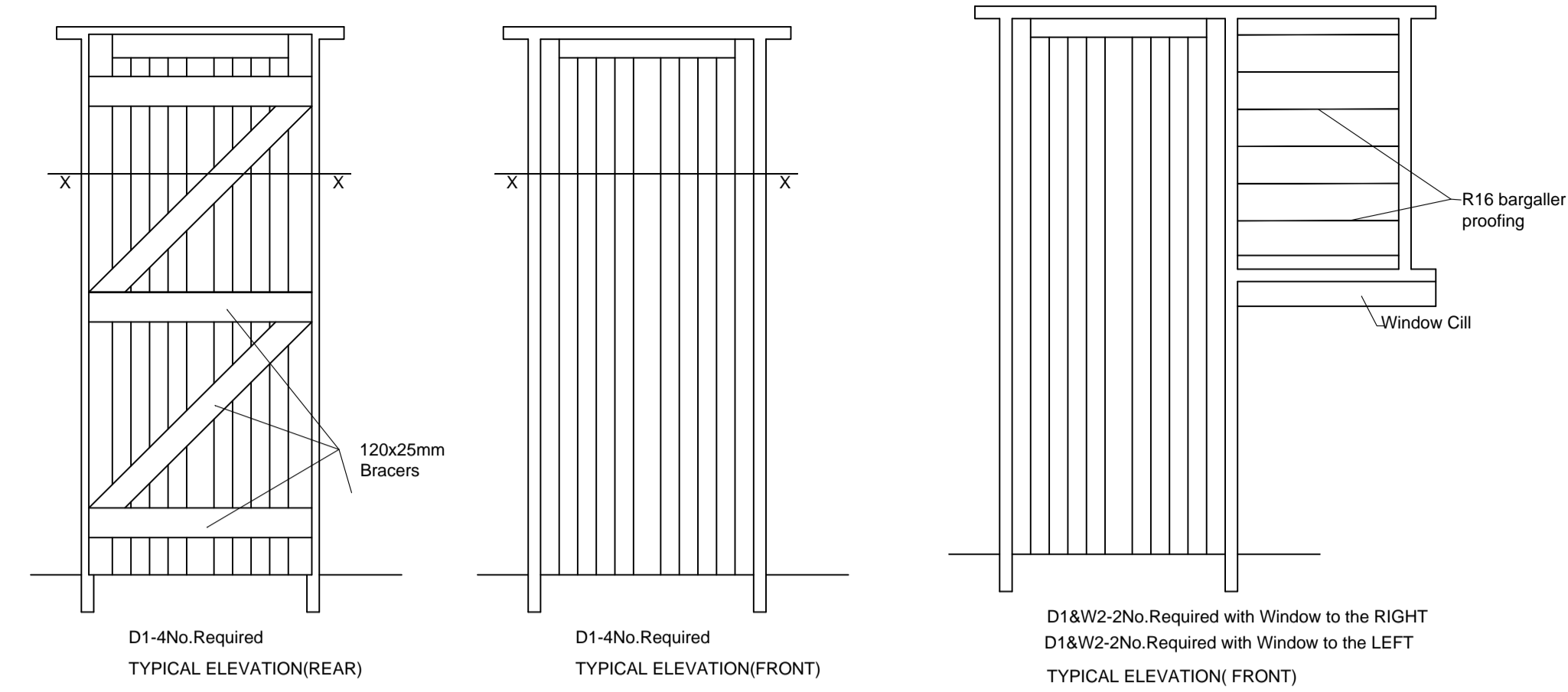




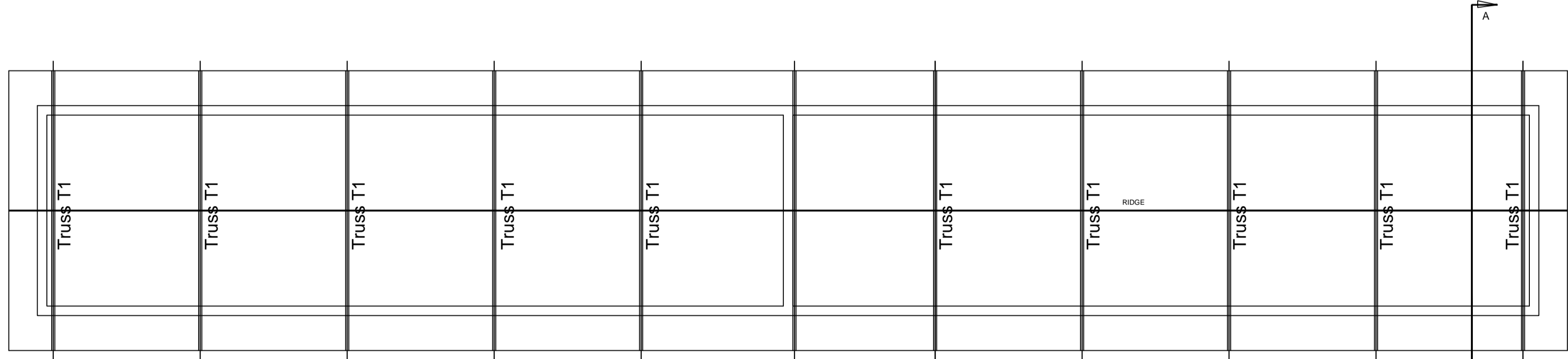
TYPICAL SECTION A-A
SCALE 1:25



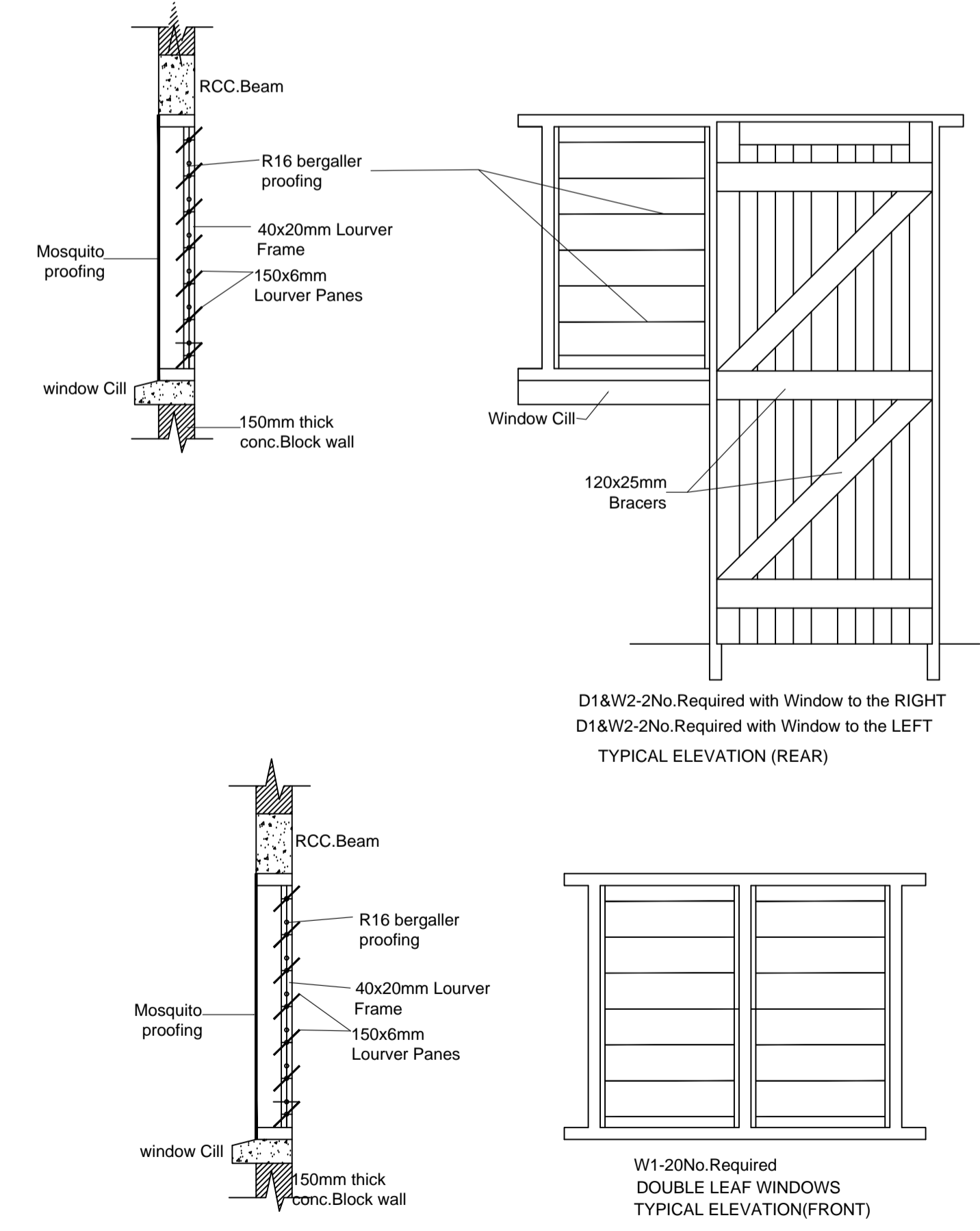
TYPICAL SECTION B-B
SCALE 1:50



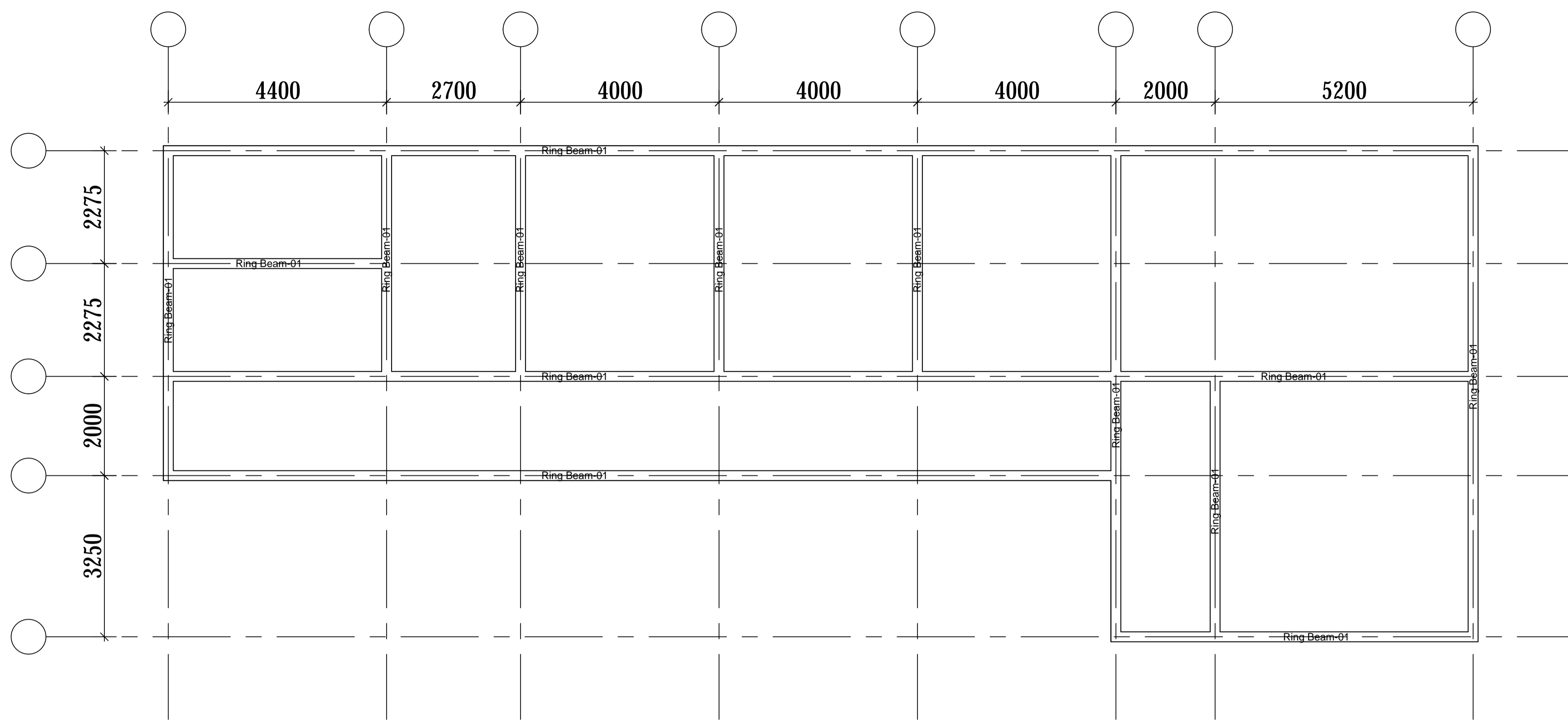
GROUND PLAN



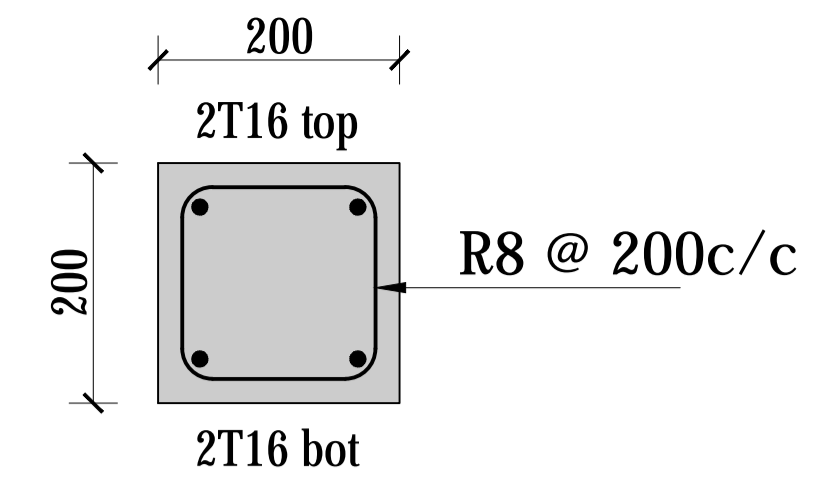
TYPICAL ROOF PLAN
SCALE 1:100



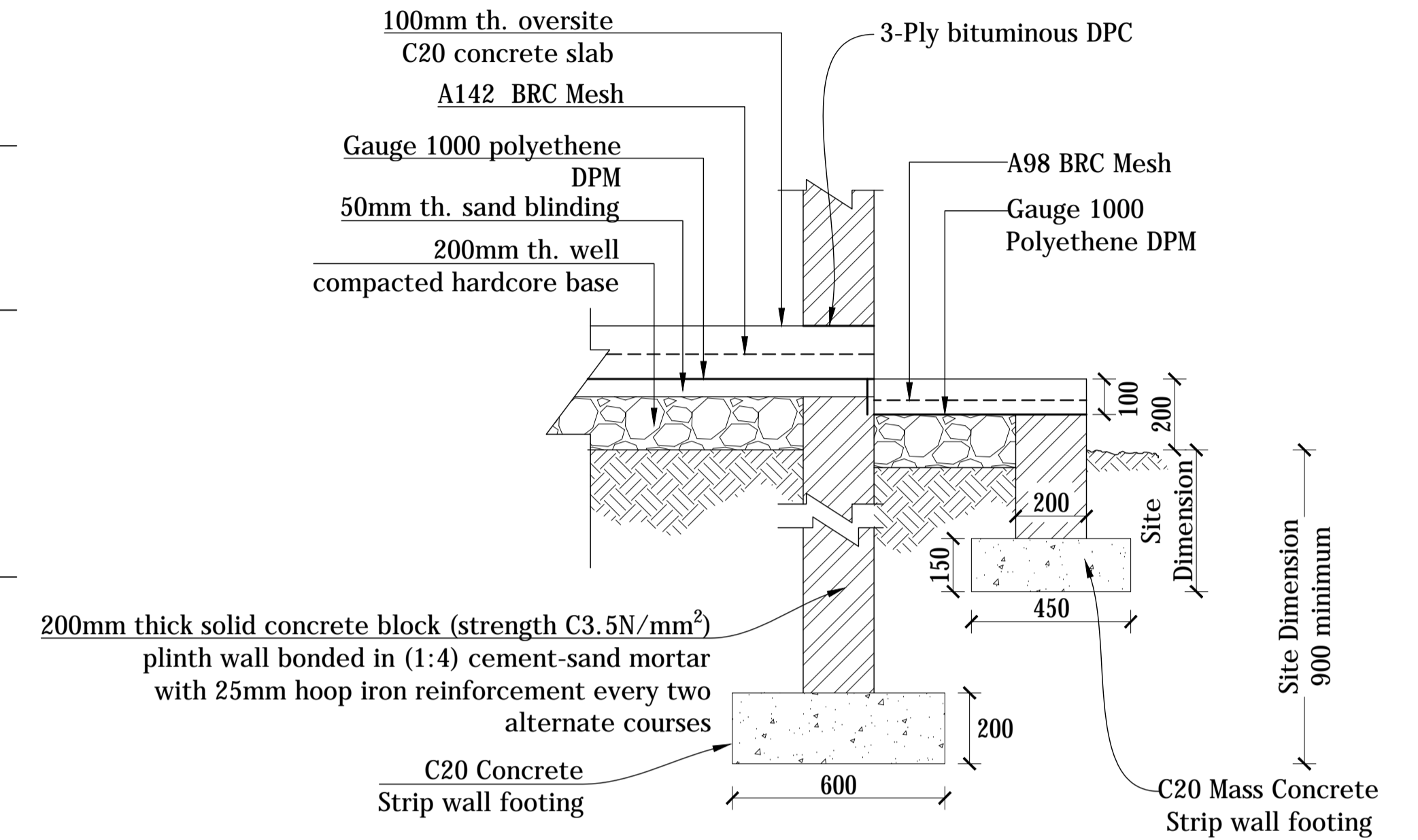
TYPE 'C' HOUSING BLOCK DOORS AND WINDOWS SCHEDULE						
NOTATION	NO	FRAMES		SHUTTERS		REMARKS
		HEIGHT (mm)	WIDTH (mm)	HEIGHT (mm)	WIDTH (mm)	
D1	4	2210	960	2180	900	Framed Ledge bottom doors
D1 & W2	2	2210	960	See Drawings		DITTO But window attached to the RIGHT
D1 & W2	2	2210	960	See Drawings		DITTO But window attached to the LEFT
D2	8	2210	800	2180	740	50mm thick Flush Doors
D3	12	2210	900	2180	840	DITTO
W1	20	1110	1310	1050-Frame	Louvers	150x6mm Louver Panes on 40x20mm frames
W2				Louvers		150x6mm Louver Panes on 40x20mm frames
W3	8	600	710	540-Frame	Louvers	150x6mm Louver Panes on 40x20mm frames



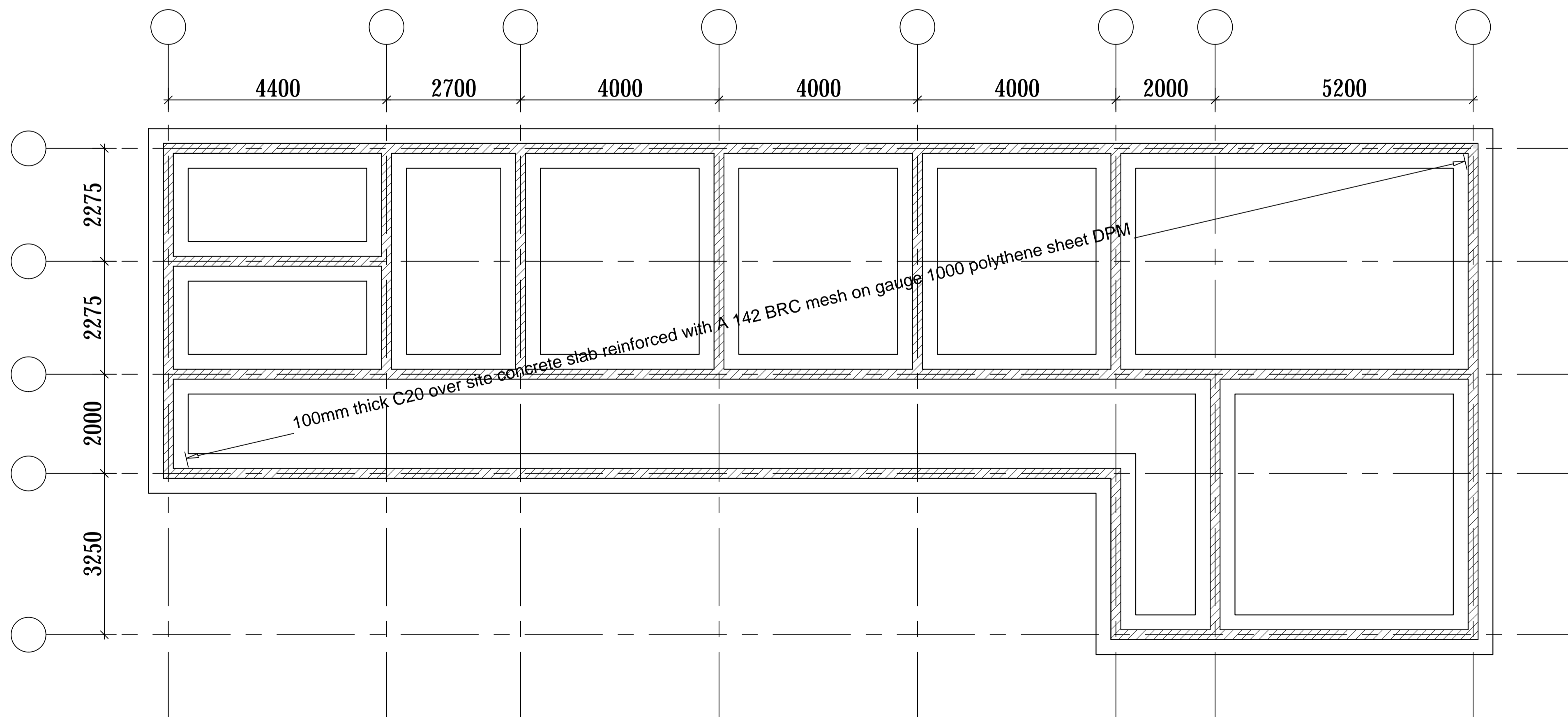
RING BEAM LAYOUT



Section thru Ring beam-01



Section through edge Concrete strip foundations.



Section through internal Concrete strip foundations.

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DWG. TITLE

WTW ADMINISTRATION AND LAB BLOCK DETAILS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

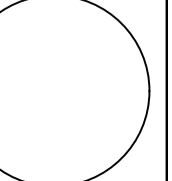
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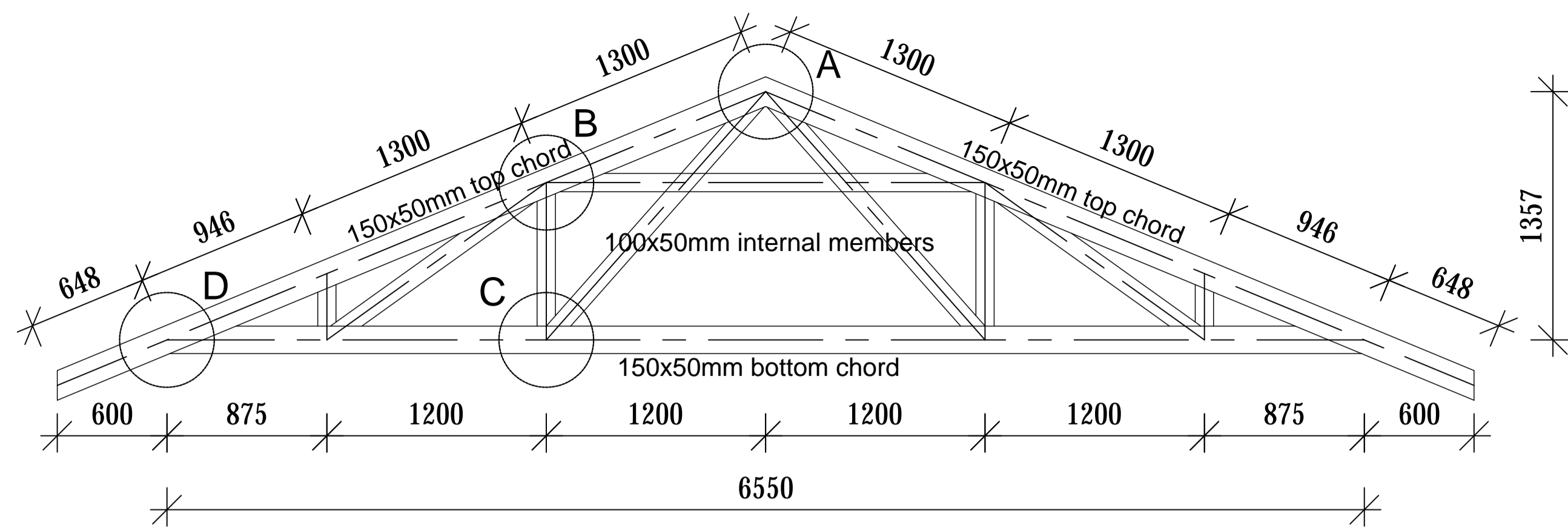
Horizontal: UTM ZONE 36N ARC 60

DWG. No.

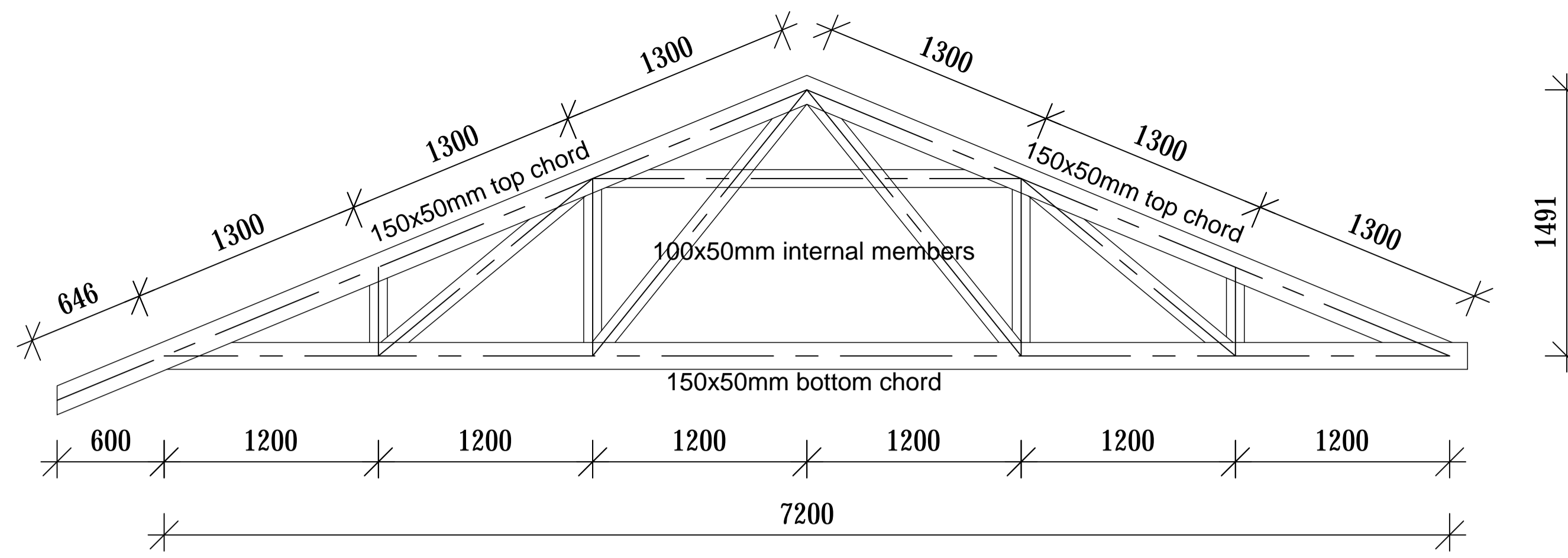
KP/BWS/WTW/ST-03

SHEET

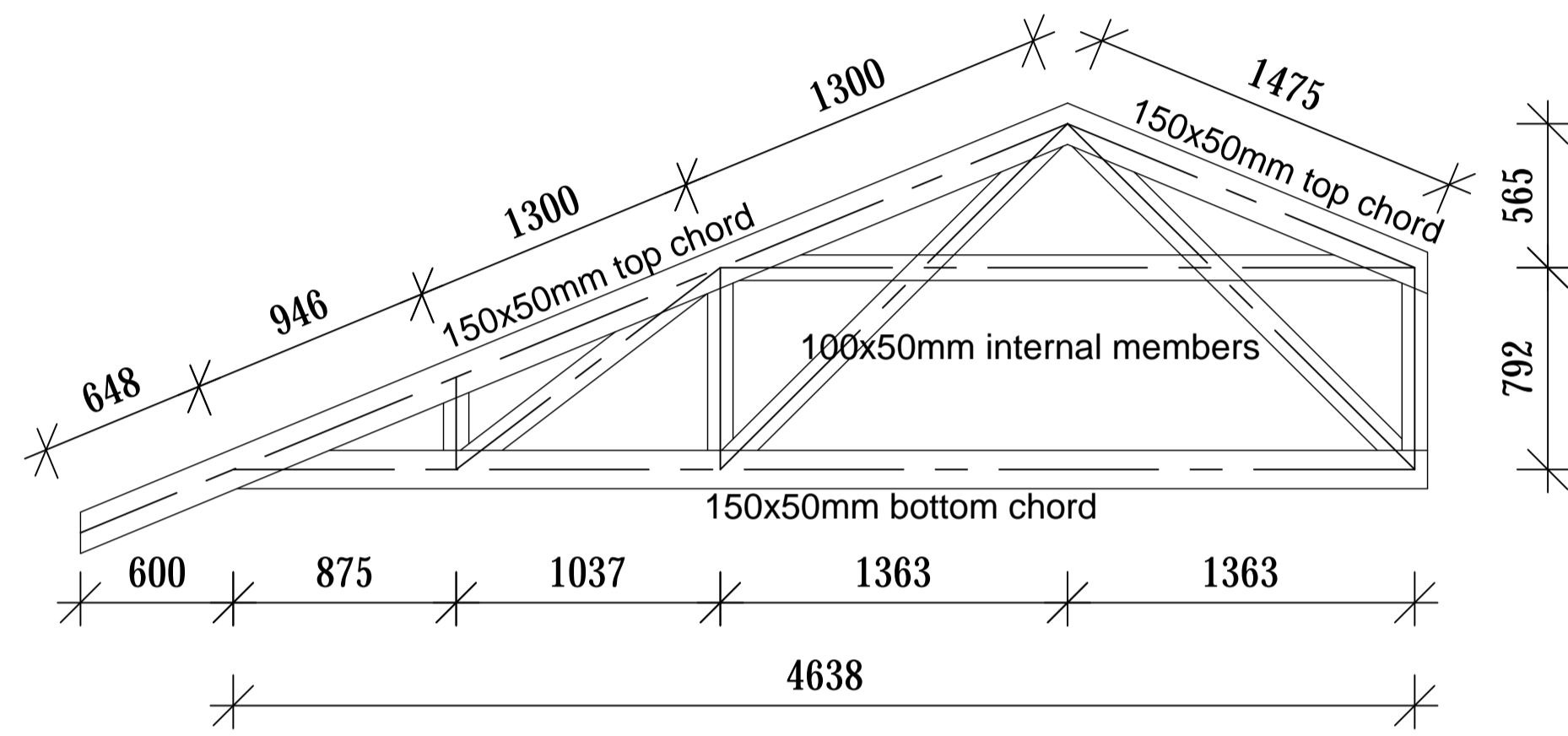




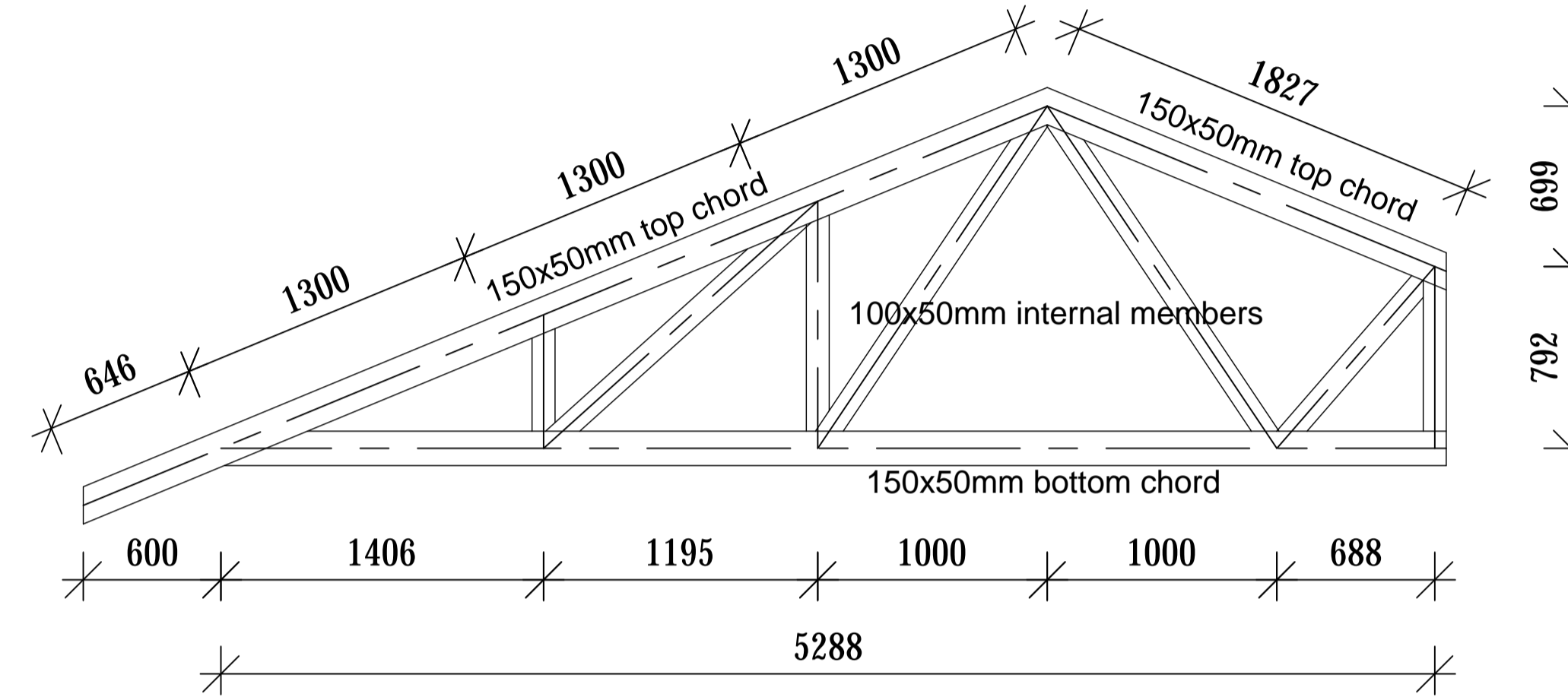
Truss T1 (9 No.)



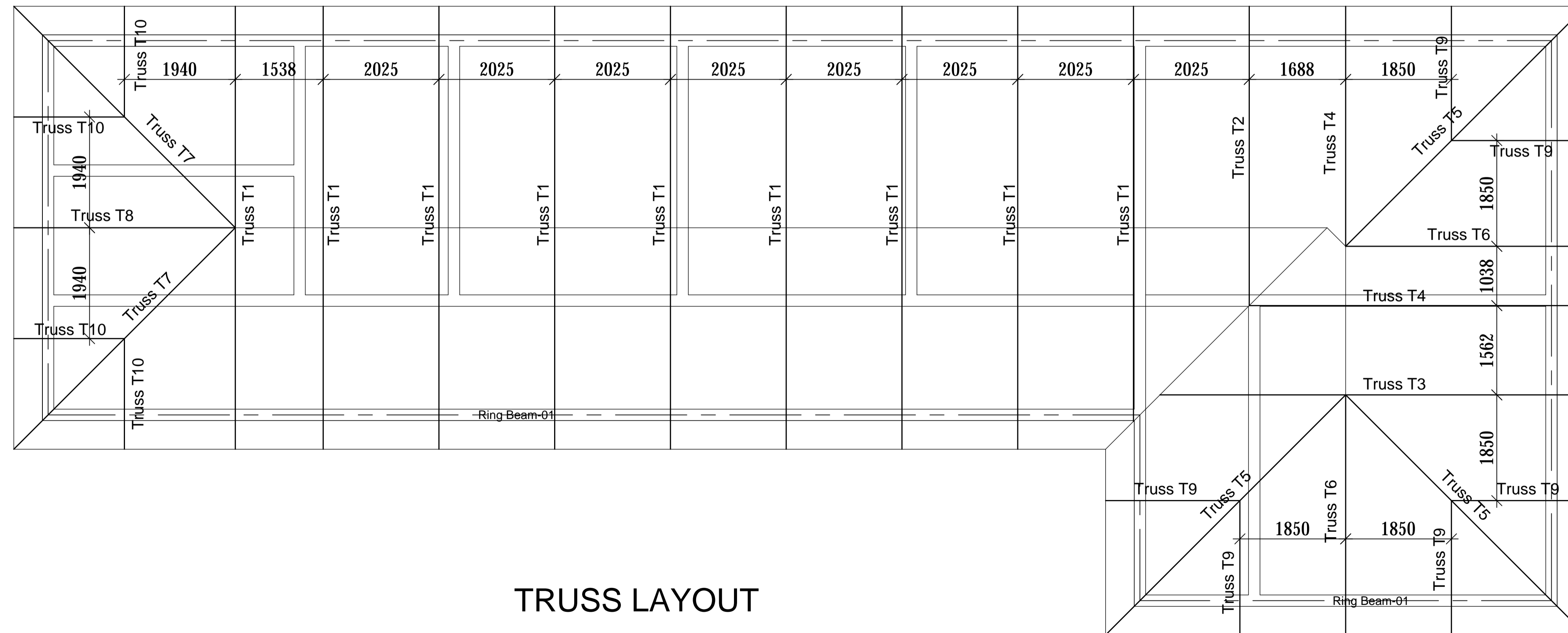
Truss T3 (1 No.)



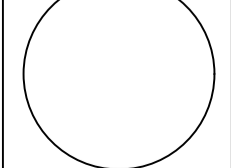
Truss T2 (1 No.)

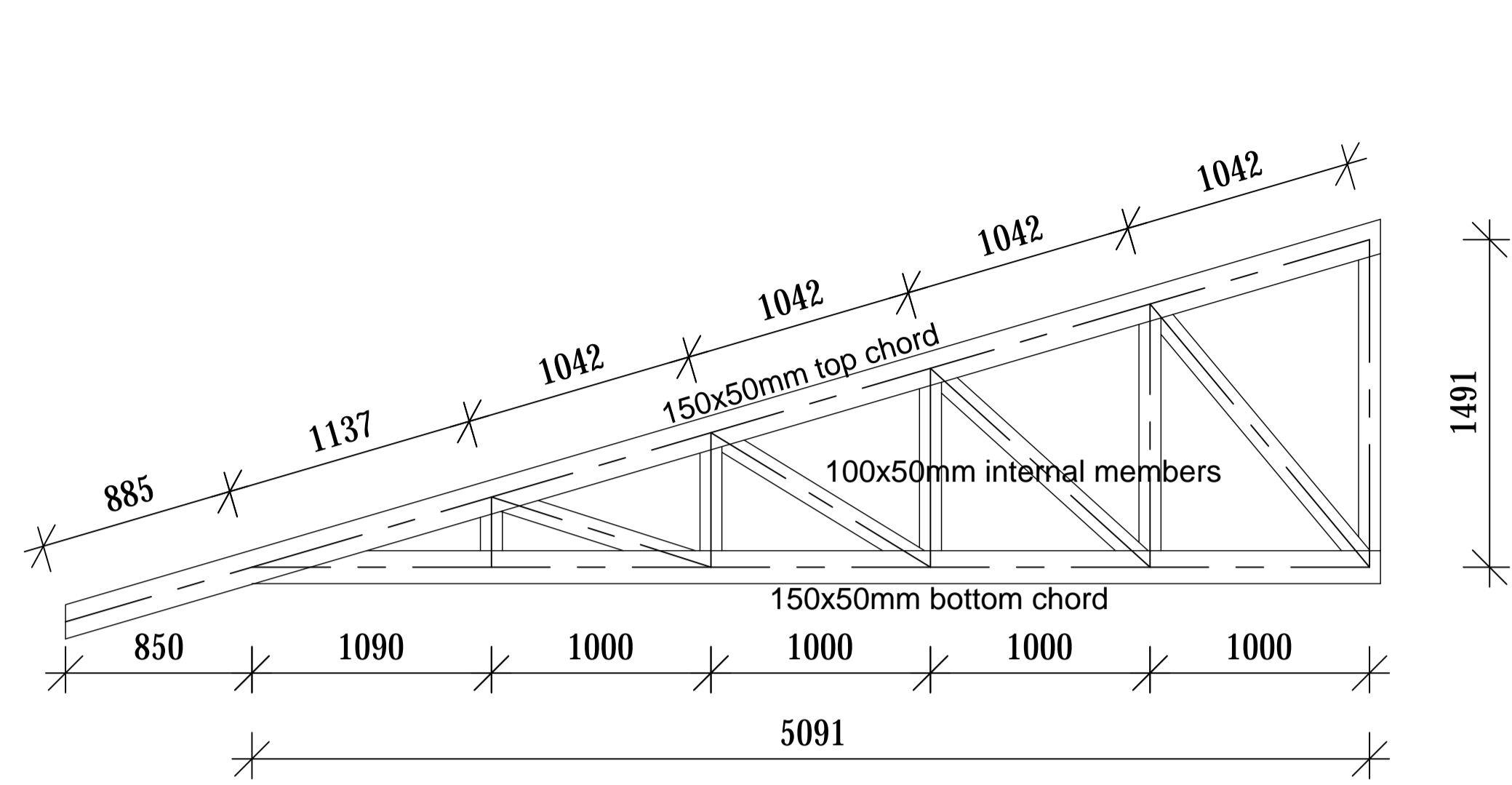


Truss T4 (2 No.)

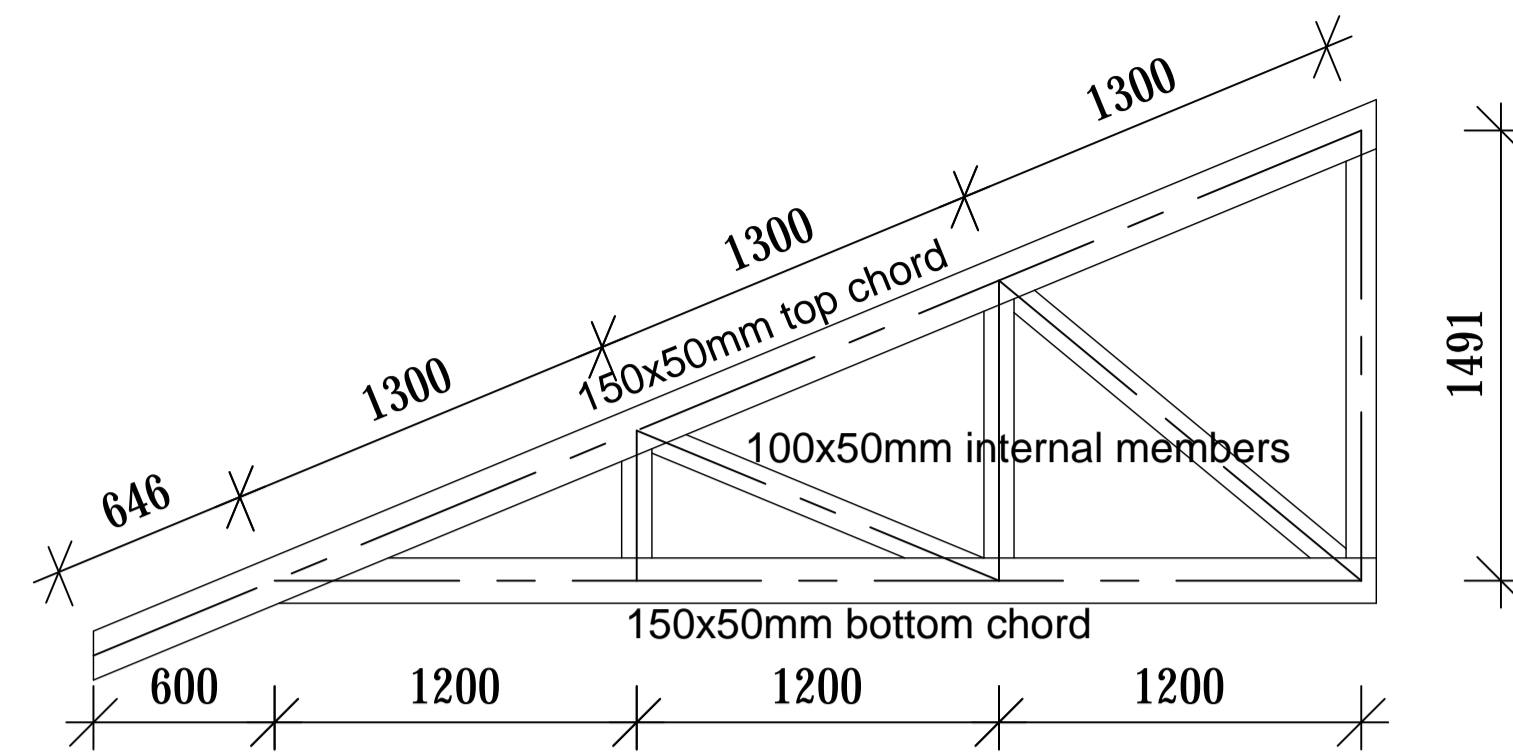


TRUSS LAYOUT

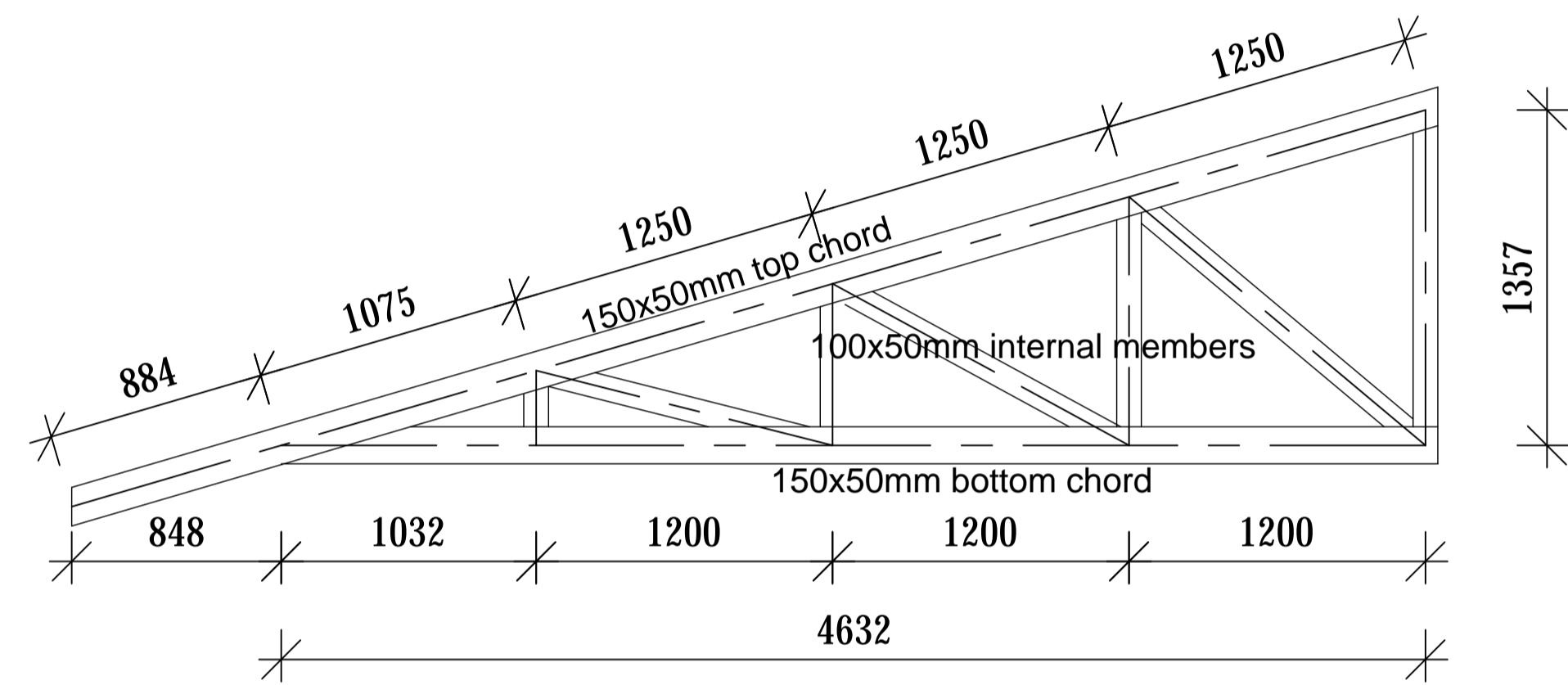




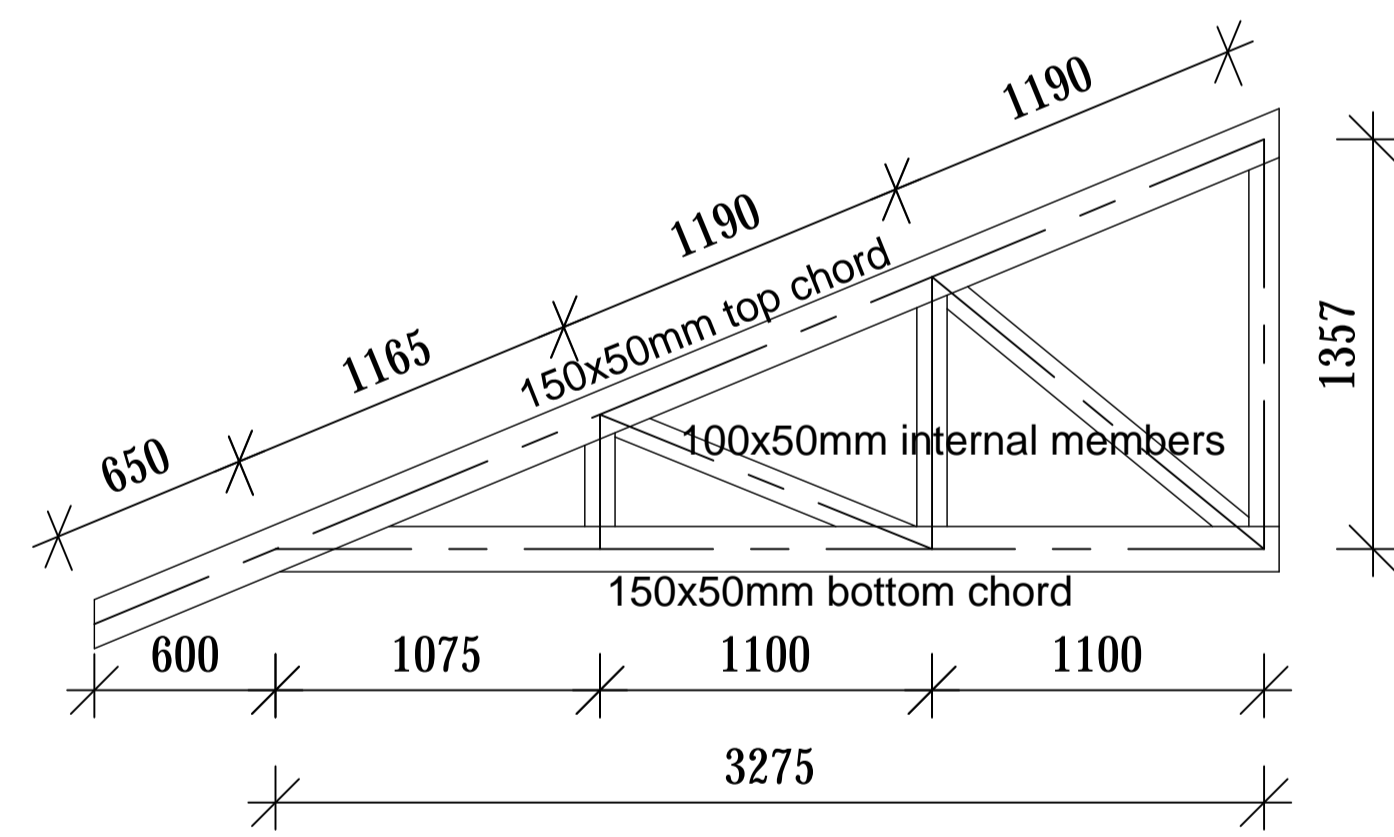
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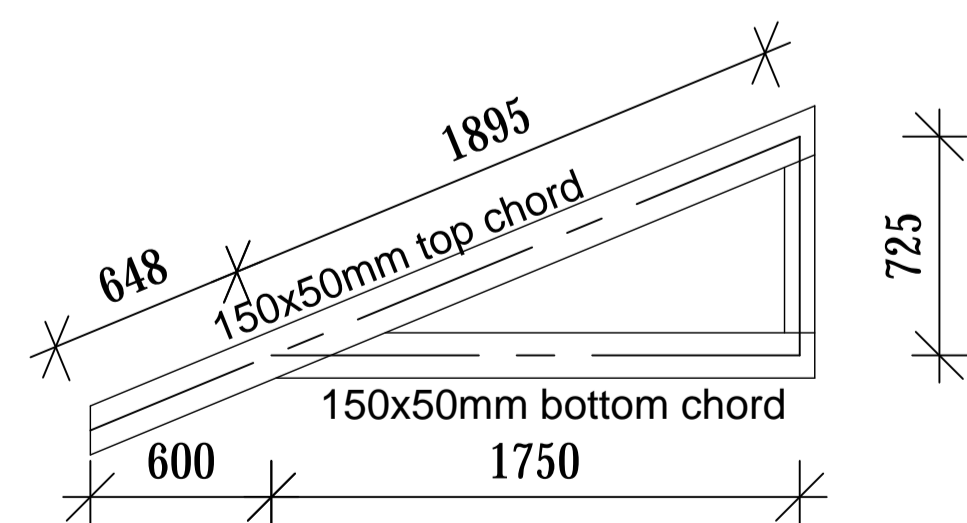
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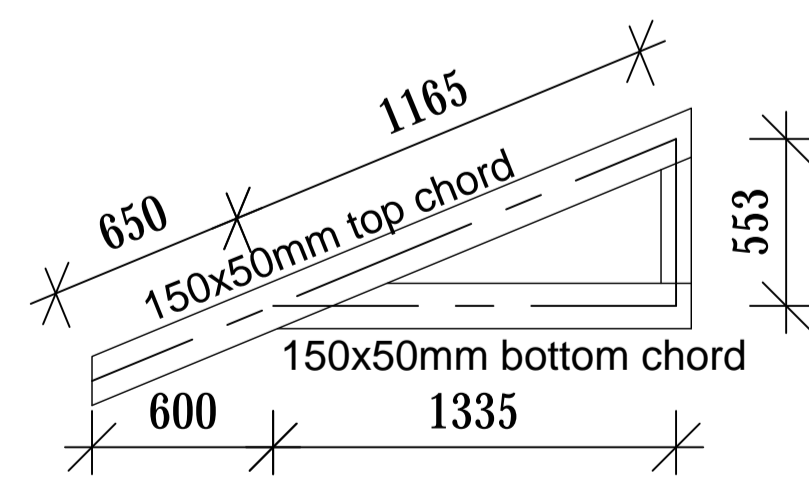
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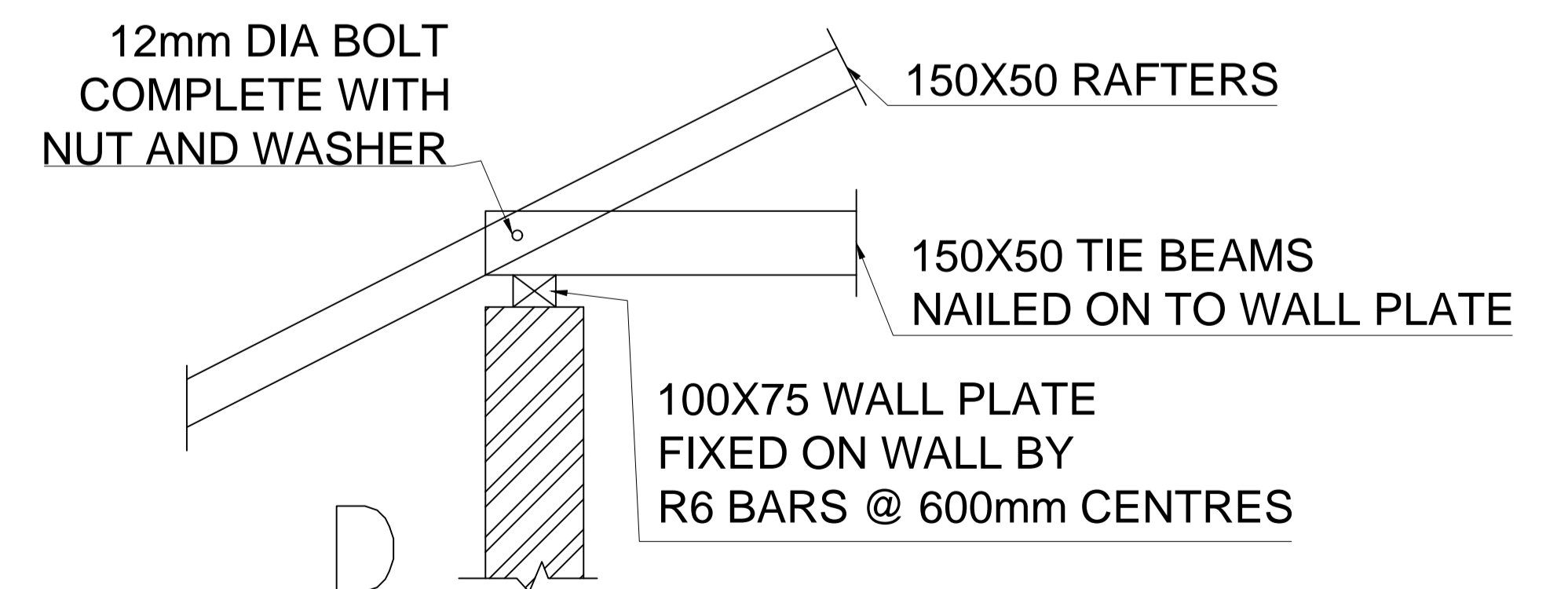
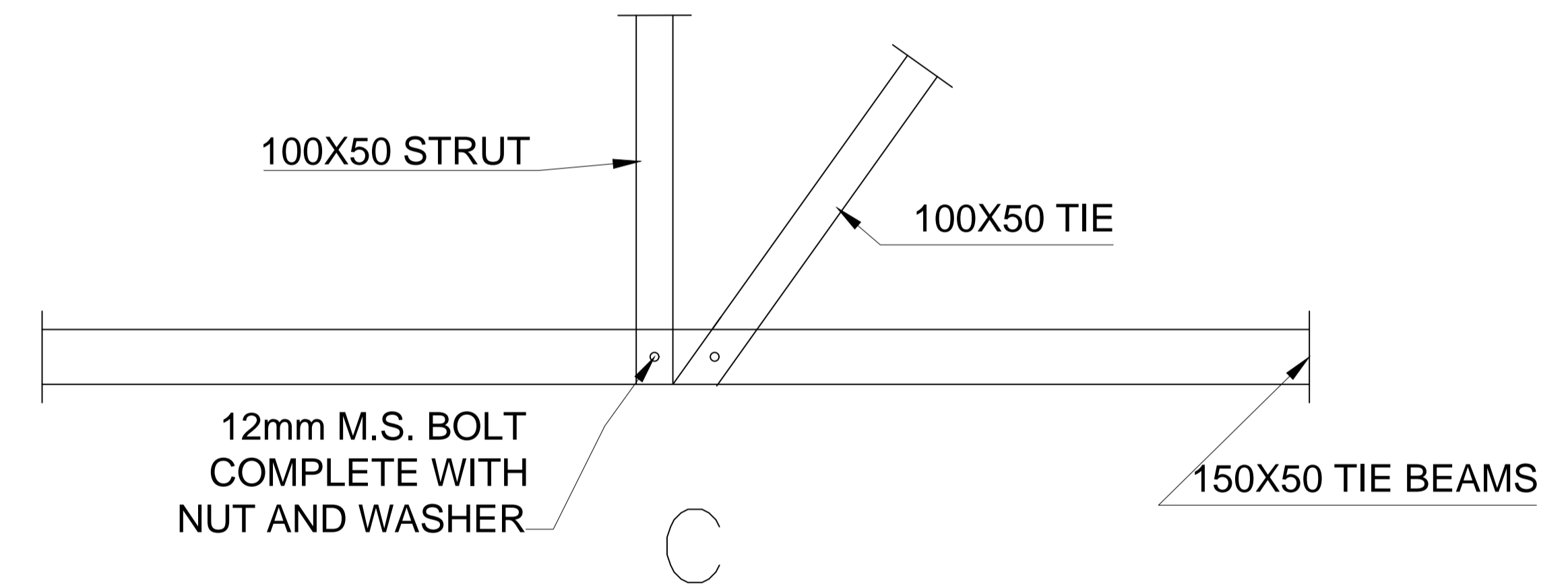
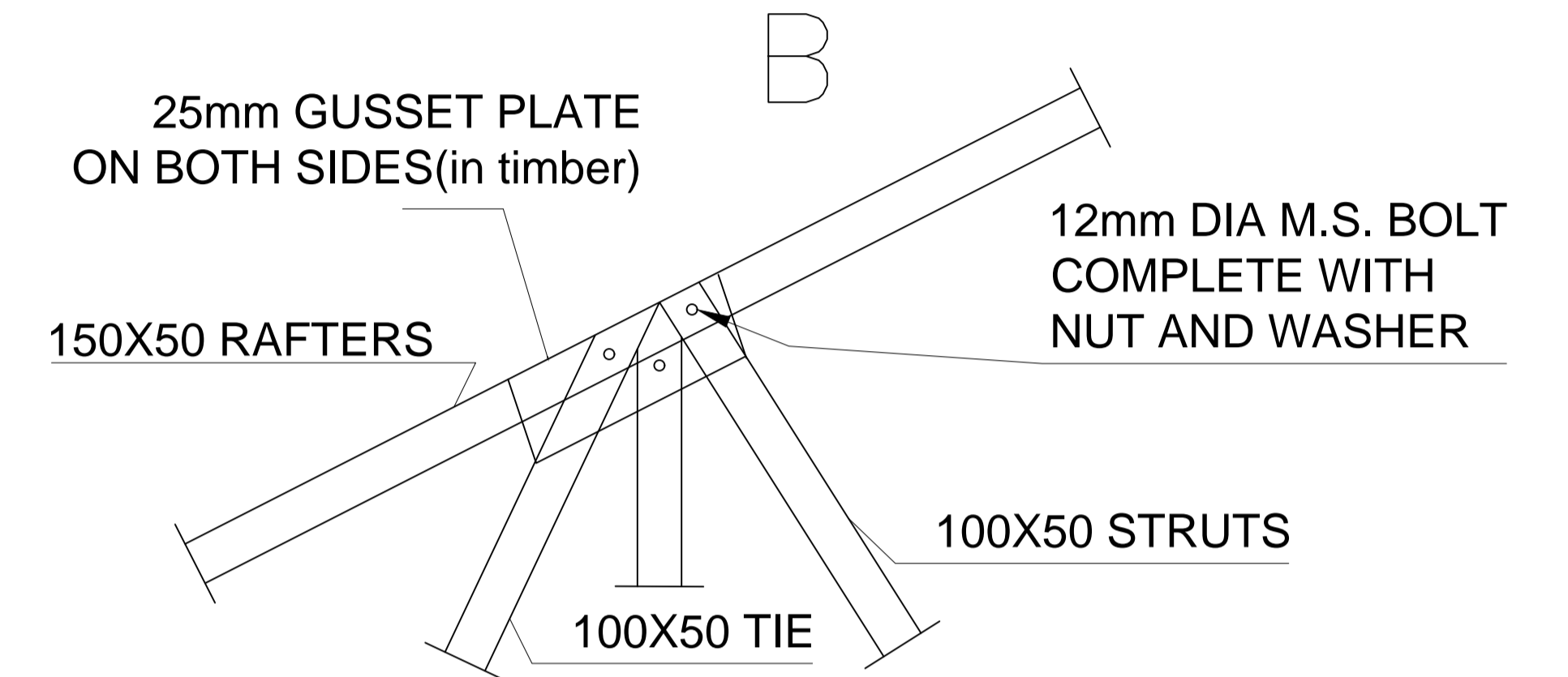
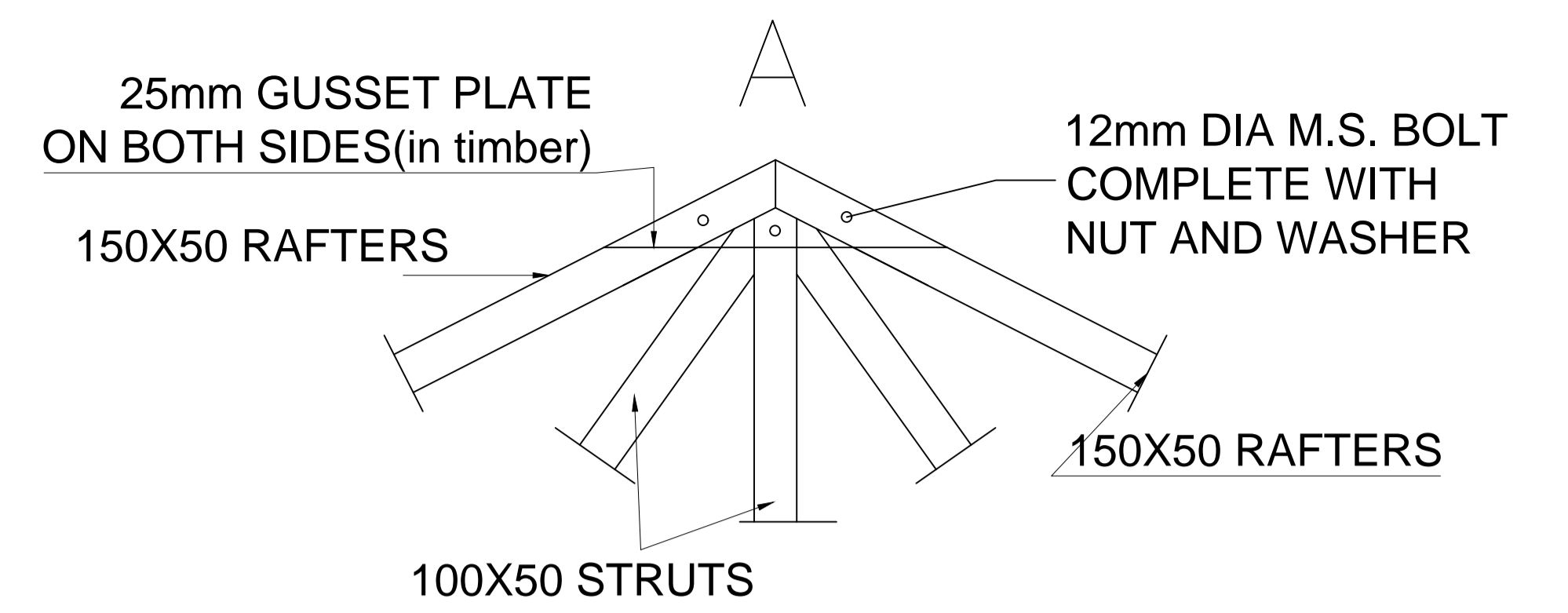
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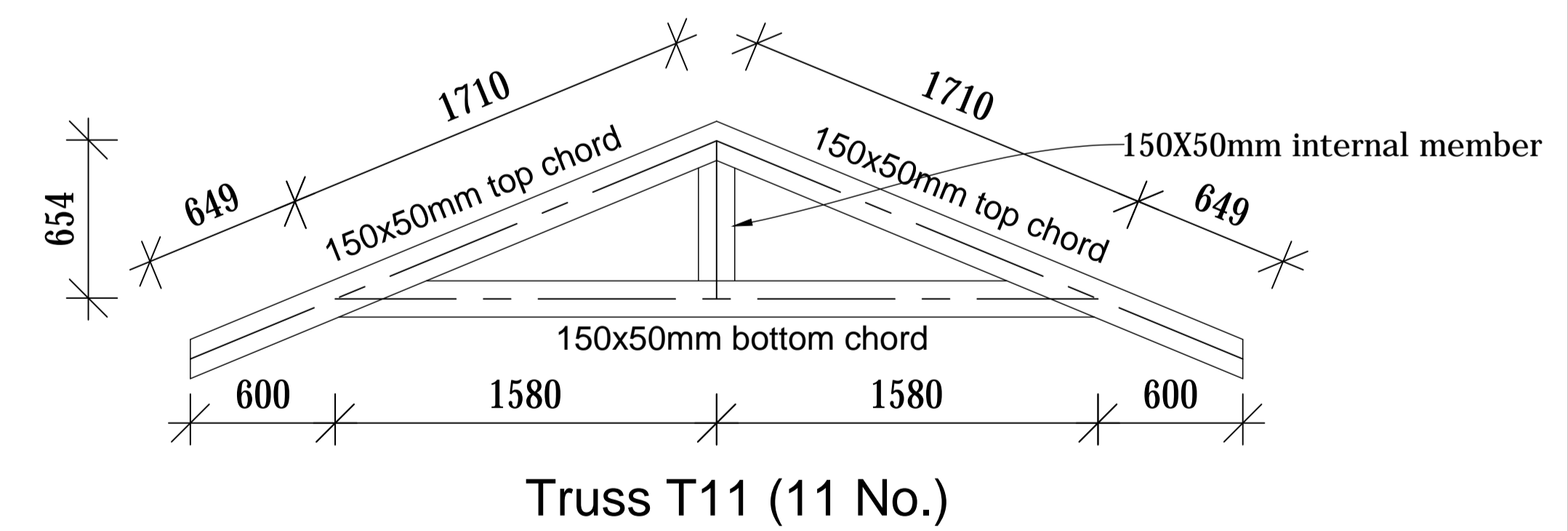
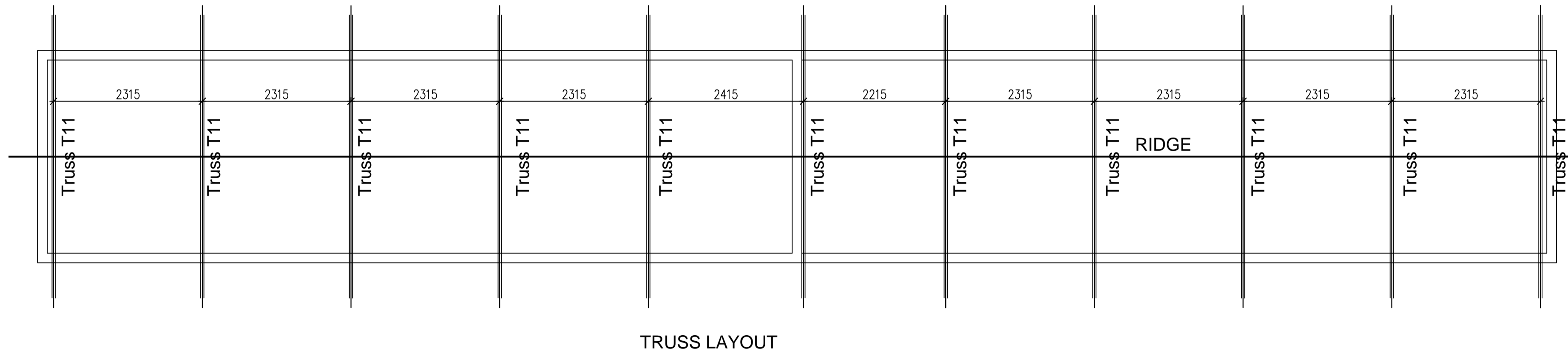
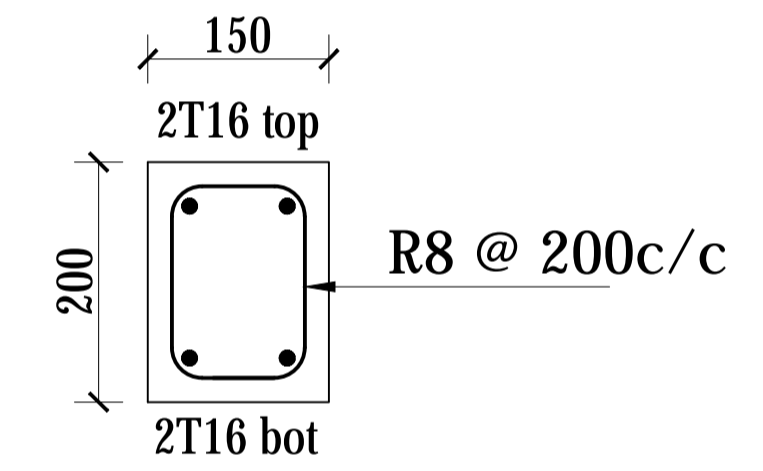
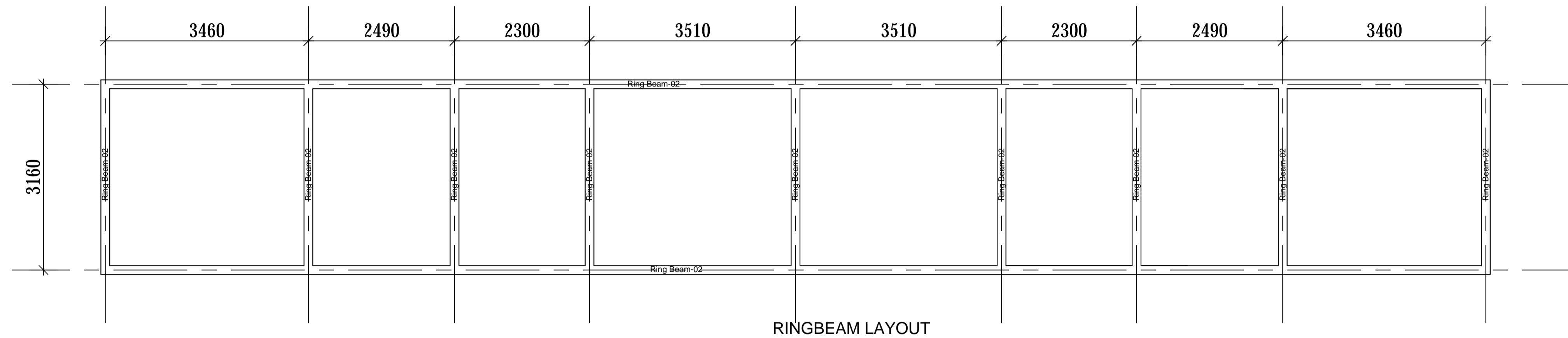
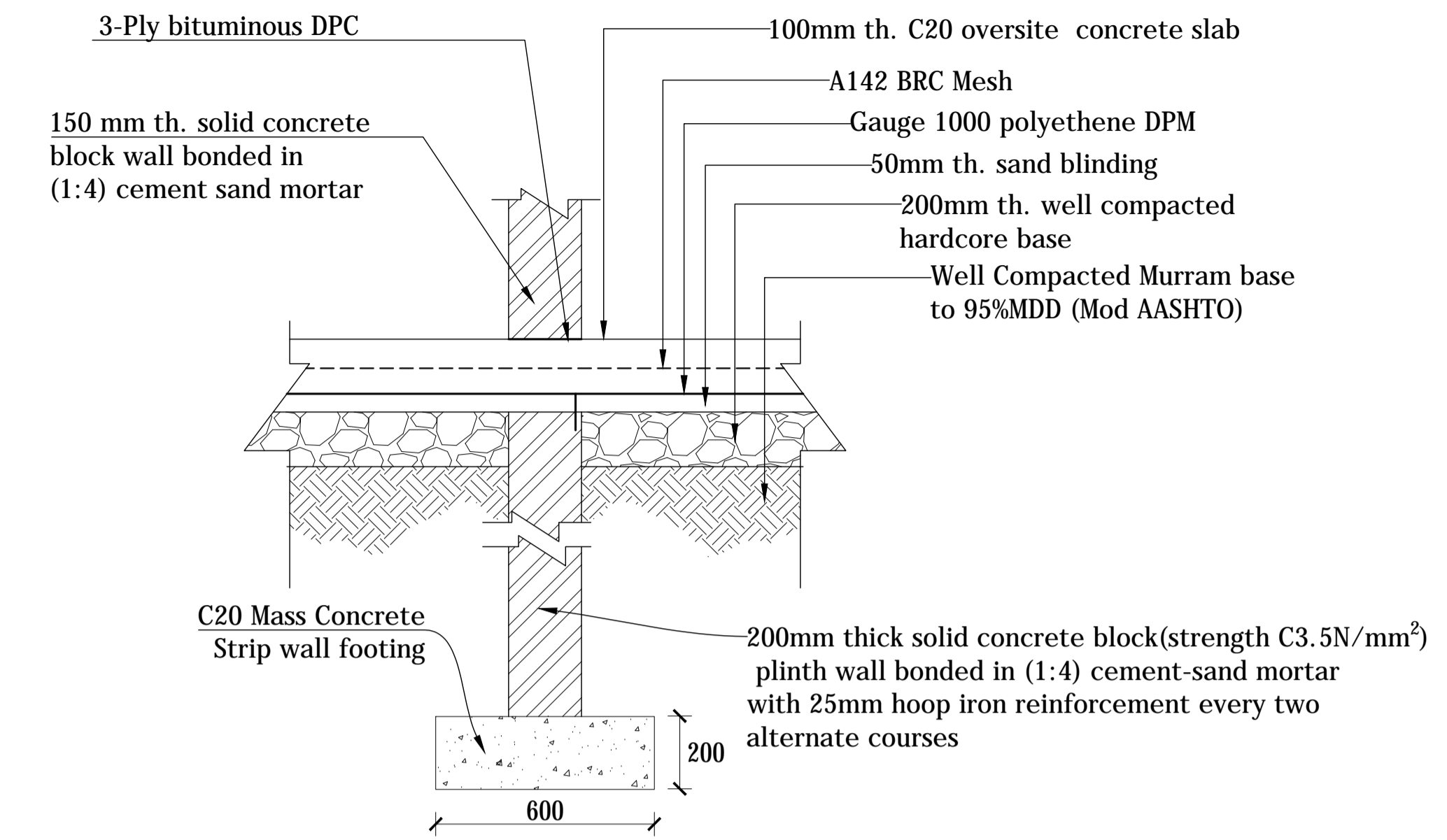
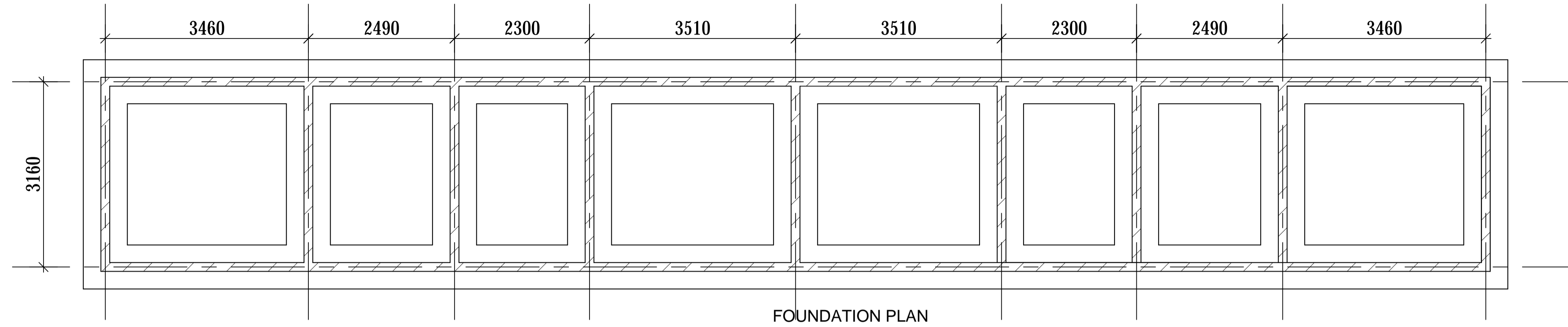


Truss T9 (8 No.)



Truss T10 (4 No.)





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DWG. TITLE

WTW ATTENDANT'S ACCOMODATION BLOCK DETAILS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

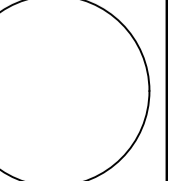
Vertical: New Khartoum

Horizontal: UTM ZONE 36N ARC 60

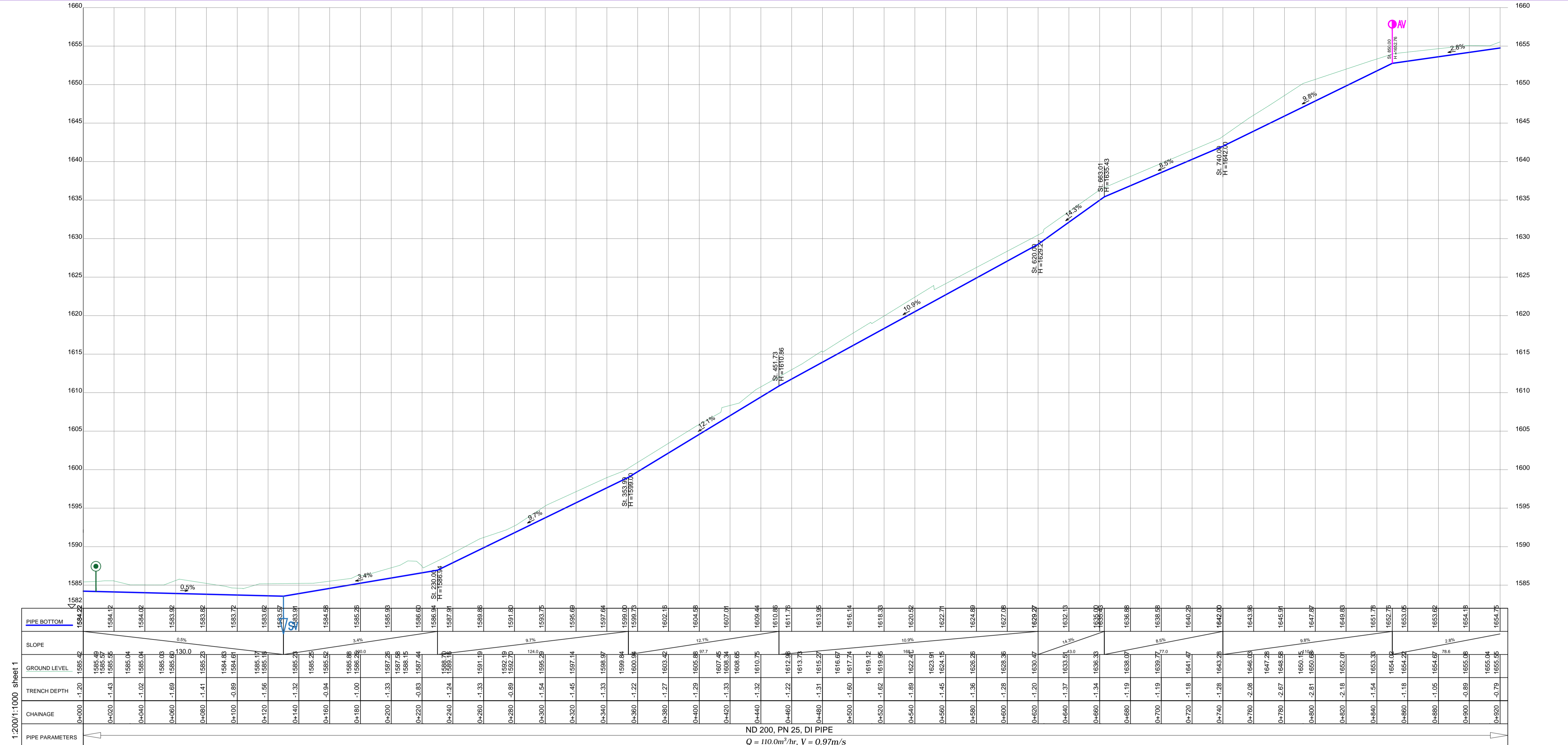
DWG. No.

KP/BWS/WTW/ST-06

SHEET

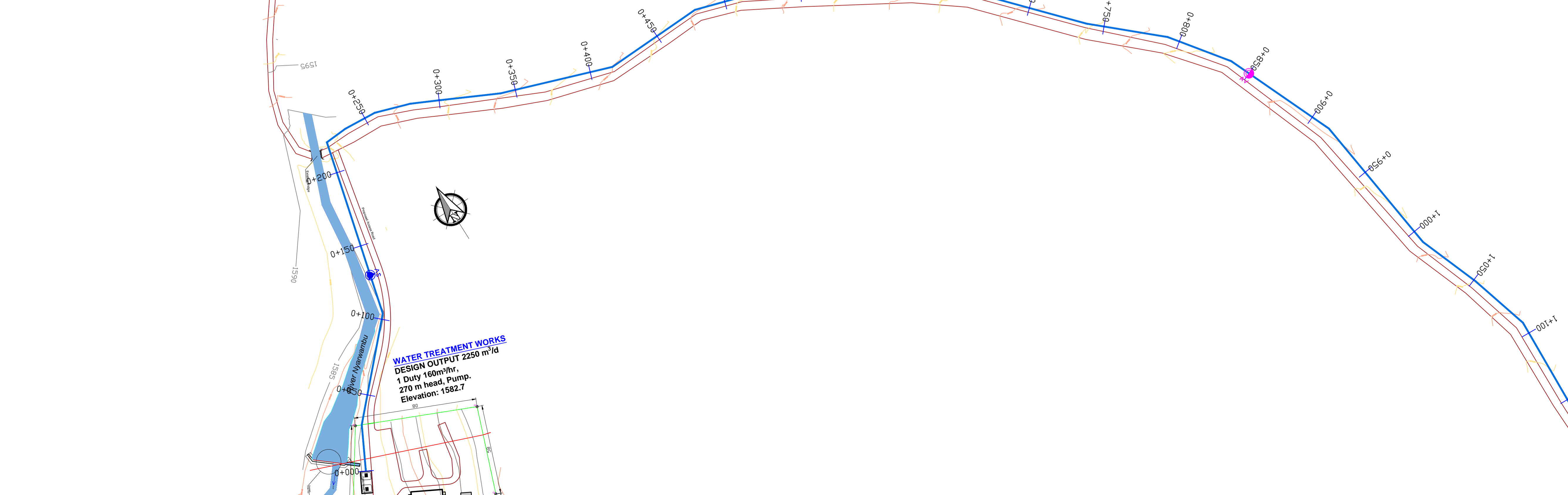


PUMPING MAINS



PIPE BOTTOM	SLOPE	GROUND LEVEL	TRENCH DEPTH	CHAINAGE
1584.2		1585.42	+1.20	0+000
1584.12		1585.49	+1.43	0+020
1584.02		1585.55	+1.53	0+040
1583.92		1585.64	+1.72	0+060
1583.82		1585.73	+1.91	0+080
1583.72		1585.83	+2.11	0+100
1583.62		1585.93	+2.31	0+120
1583.52		1586.03	+2.51	0+140
1583.42		1586.13	+2.71	0+160
1583.32		1586.23	+2.91	0+180
1583.22		1586.33	+3.11	0+200
1583.12		1586.43	+3.31	0+220
1583.02		1586.53	+3.51	0+240
1582.92		1586.63	+3.71	0+260
1582.82		1586.73	+3.91	0+280
1582.72		1586.83	+4.11	0+300
1582.62		1586.93	+4.31	0+320
1582.52		1587.03	+4.51	0+340
1582.42		1587.13	+4.71	0+360
1582.32		1587.23	+4.91	0+380
1582.22		1587.33	+5.11	0+400
1582.12		1587.43	+5.31	0+420
1582.02		1587.53	+5.51	0+440
1581.92		1587.63	+5.71	0+460
1581.82		1587.73	+5.91	0+480
1581.72		1587.83	+6.11	0+500
1581.62		1587.93	+6.31	0+520
1581.52		1588.03	+6.51	0+540
1581.42		1588.13	+6.71	0+560
1581.32		1588.23	+6.91	0+580
1581.22		1588.33	+7.11	0+600
1581.12		1588.43	+7.31	0+620
1581.02		1588.53	+7.51	0+640
1580.92		1588.63	+7.71	0+660
1580.82		1588.73	+7.91	0+680
1580.72		1588.83	+8.11	0+700
1580.62		1588.93	+8.31	0+720
1580.52		1589.03	+8.51	0+740
1580.42		1589.13	+8.71	0+760
1580.32		1589.23	+8.91	0+780
1580.22		1589.33	+9.11	0+800
1580.12		1589.43	+9.31	0+820
1580.02		1589.53	+9.51	0+840
1579.92		1589.63	+9.71	0+860
1579.82		1589.73	+9.91	0+880
1579.72		1589.83	+10.11	0+900
1579.62		1589.93	+10.31	0+920

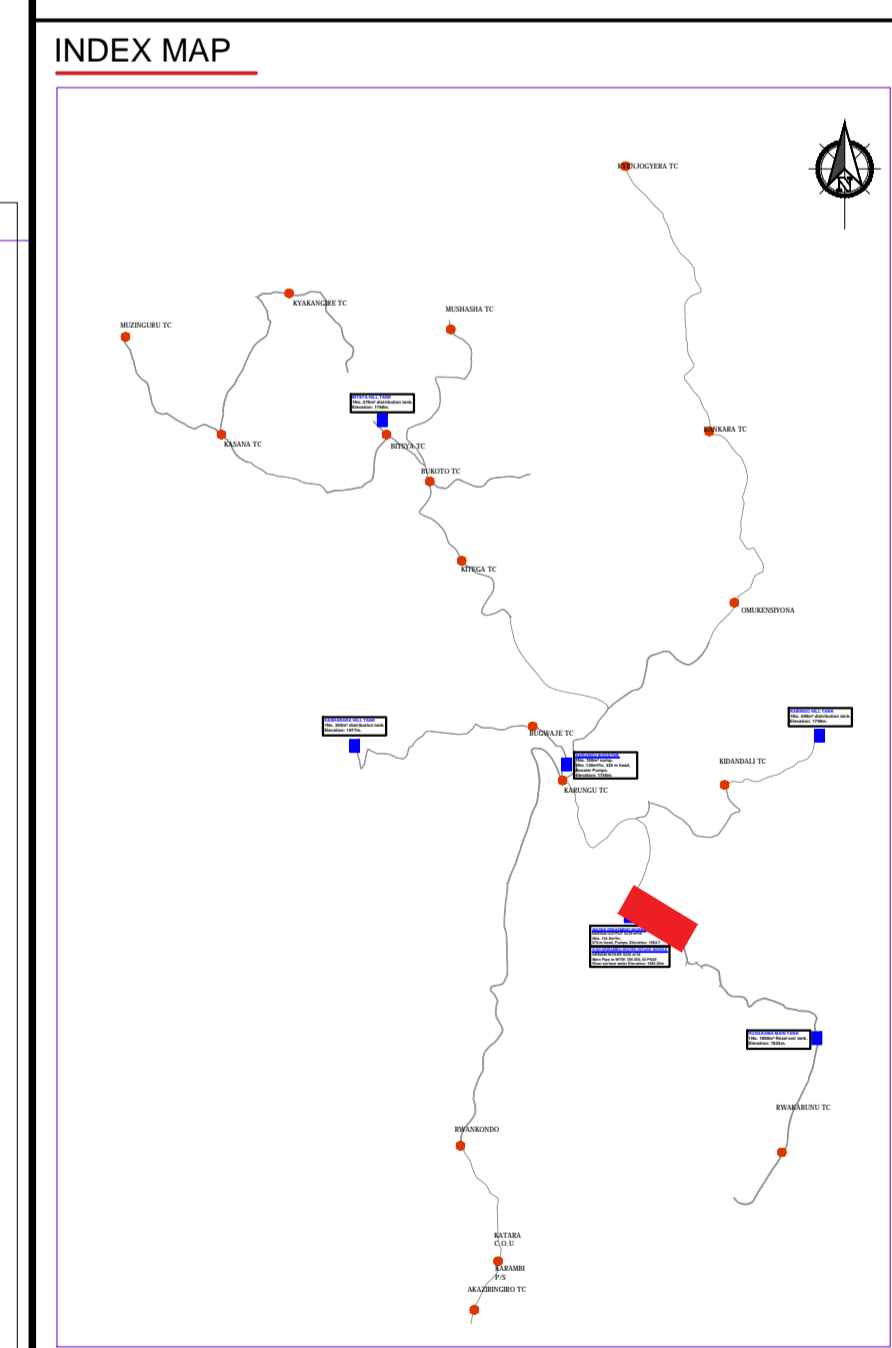
1:200/1:1000 sheet 1
PUMPING MAIN PM_01
 ND 200, PN 25, DI PIPE
 $Q = 110.0\text{m}^3/\text{hr}$, $V = 0.97\text{m/s}$



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
 - REFER TO AUXILIARY WORKS DRAWINGS FOR ANCHORAGE TO PIPELINES, AIR VALVES DETAILS, PIPE PEDESTALS, PULLEY SUPPORT, TRENCH DETAILS, VALVE CHAMBERS, WASHOUT CHAMBERS AND WATER METERS.
 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

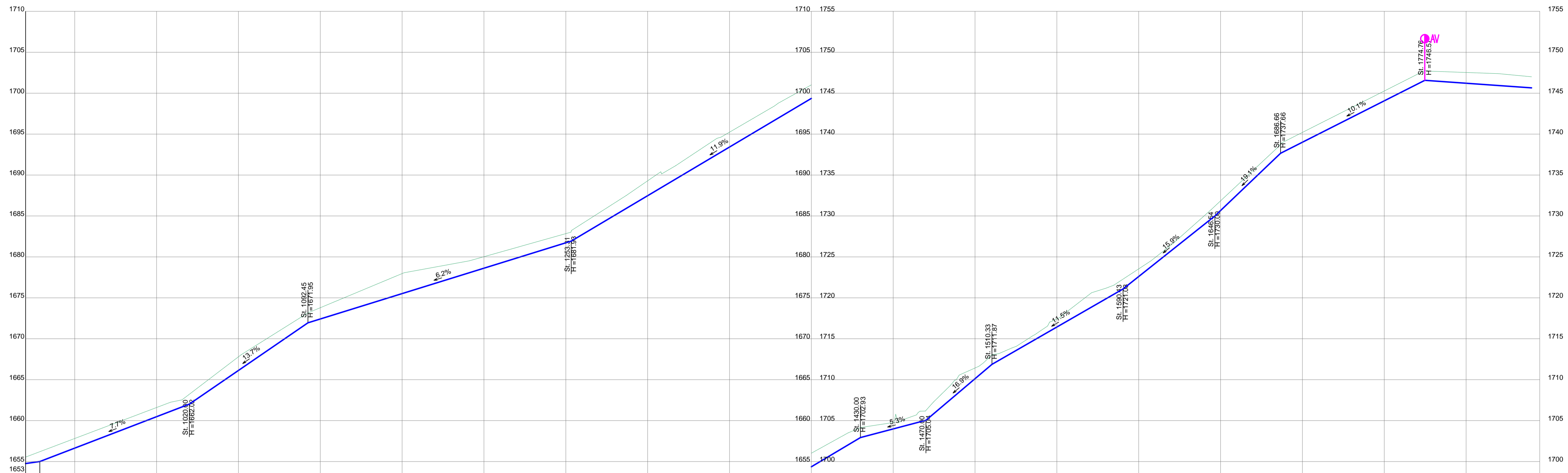
Client: **REPUBLIC OF UGANDA**
 MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_01**

Consultants: **KAGGA & PARTNERS**
 PLOT 2, BANDAII CLOSE GOLD PORT BELL ROAD,
 TEL: 256 41 220279,
 FAX: 256 41 220208,
 P.O. BOX 65852,
 KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/PM01-01 Date: /SEPT 2021



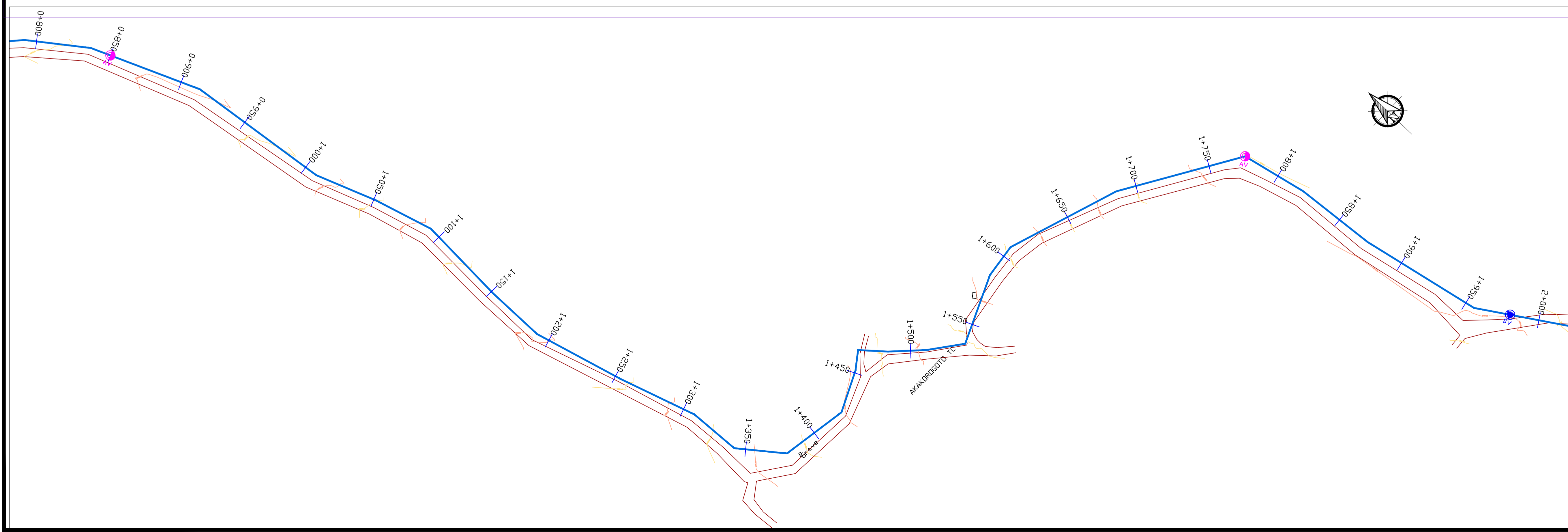
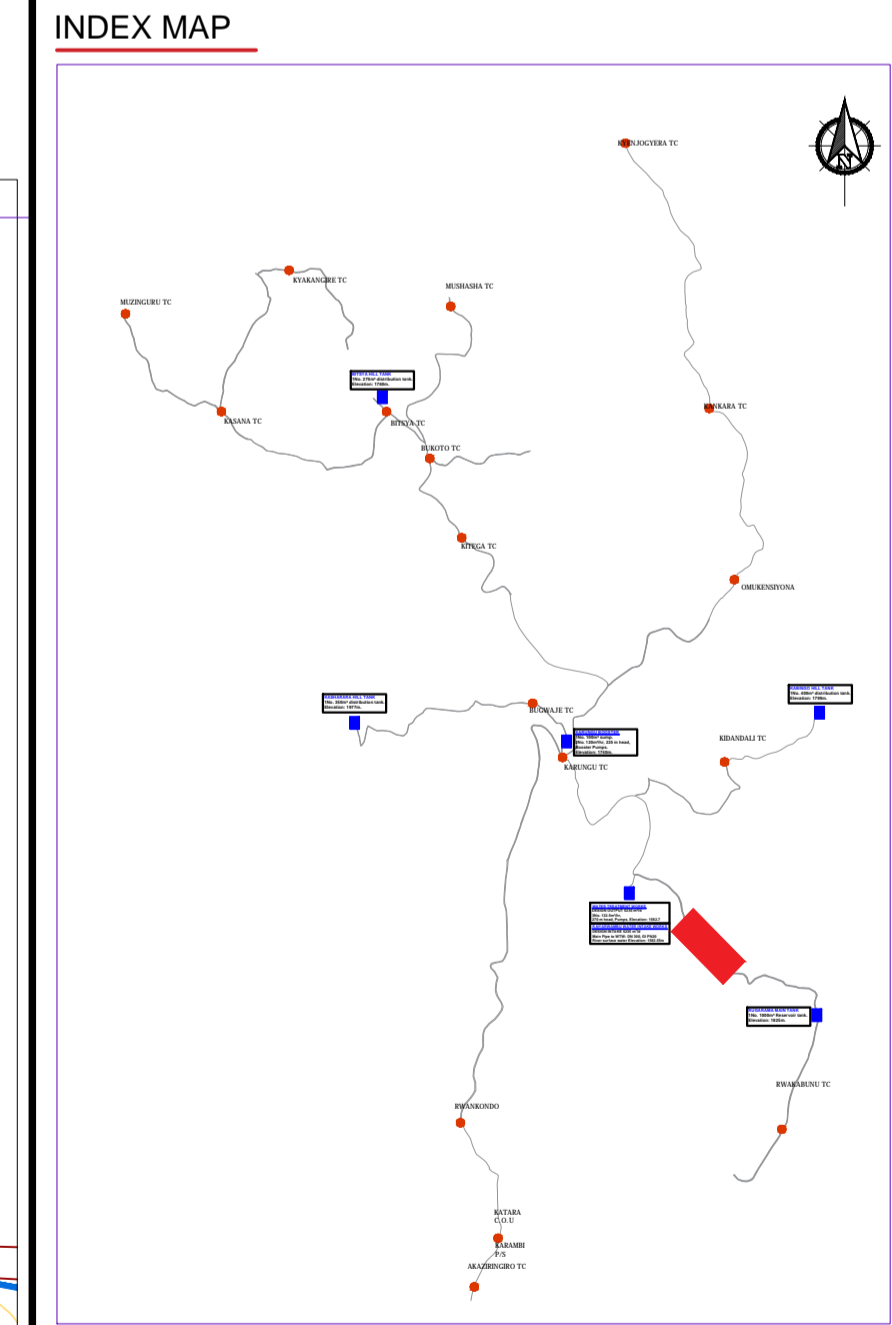
PIPE BOTTOM	1655.00	1656.64	1660.48	1662.02	1666.13	1671.95	1672.42	1675.52	1676.62	1681.72	1687.48	1689.42	1699.36	1702.93	1703.98	1705.04	1710.12	1711.87	1716.43	1721.08	1722.61	1730.00	1730.66	1737.66	1739.01	1744.07	1746.57	1746.21																		
SLOPE	78.6	91.4	72.5	160.9	176.7	40.0	40.3	80.1	56.1	40.1	88.1	214.6																																		
GROUND LEVEL	1657.82	1661.60	1662.53	1667.79	1672.79	1677.96	1679.52	1680.02	1682.84	1687.48	1689.40	1691.14	1694.49	1695.24	1698.43	1701.02	1703.51	1704.17	1704.76	1705.24	1706.17	1707.25	1708.29	1710.56	1711.43	1712.06	1713.18	1713.88	1715.42	1716.56	1717.42	1720.62	1721.21	1721.54	1723.54	1724.53	1726.69	1730.76	1731.85	1736.59	1740.21	1745.27	1747.77	1747.66	1747.53	1747.39
TRENCH DEPTH	-1.18	-1.12	-1.09	-1.37	-2.45	-1.40	-1.12	-1.82	-1.82	-1.86	-0.78	-1.31	-0.99	-0.83	-1.19	-1.20	-1.20	-1.32	214.6																											
CHAINAGE	0+950	1+000	1+050	1+100	1+150	1+200	1+250	1+300	1+350	1+400	1+450	1+500	1+550	1+600	1+650	1+700	1+750	1+800	1+845																											
PIPE PARAMETERS	OD 250, PN 25, UPVC Q = 110.0m ³ /hr, V = 0.97m/s																																													

PUMPING MAIN PM_01

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

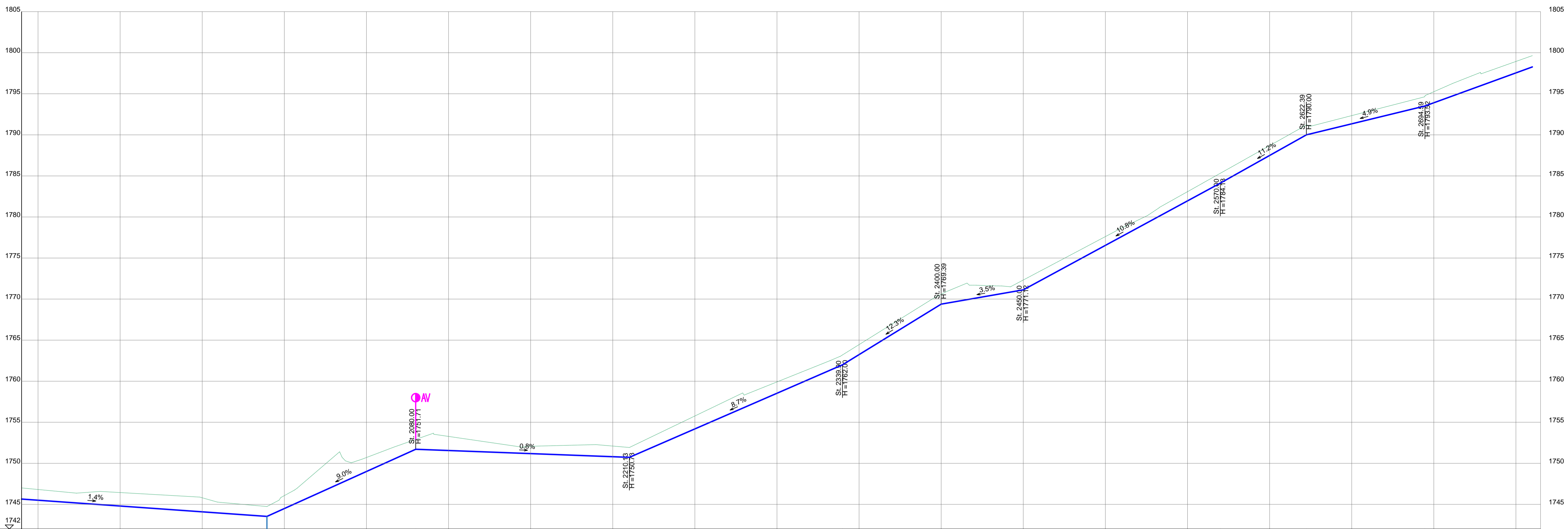
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_01**

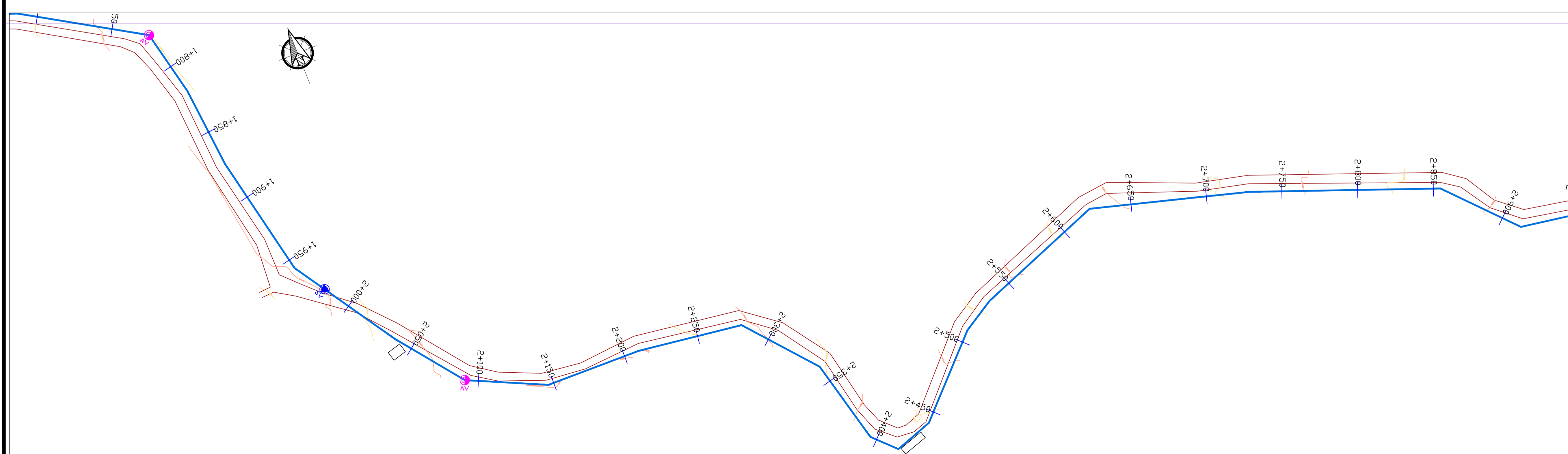
Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/PM01-02 Date: SEPT 2021



PIPE BOTTOM	1746.51	1744.80	1744.10	1743.54	1744.80	1749.01	1751.71	1751.56	1751.18	1750.81	1750.73	1754.19	1758.54	1762.00	1763.24	1769.39	1771.12	1776.54	1781.96	1784.13	1787.49	1790.00	1791.34	1793.52	1793.91	1797.55																			
SLOPE	1.4%		214.6		9.0%		0.6%		8.7%		12.3%		3.5%		10.8%		11.2%		4.9%		160.2																								
GROUND LEVEL	1746.81	1746.37	1746.58	1746.44	1745.81	1745.45	1744.74	1746.07	1746.74	1751.41	1750.07	1750.71	1751.99	1753.67	1753.28	1752.08	1752.28	1752.10	1751.93	1755.77	1758.57	1759.92	1762.50	1763.00	1764.46	1770.13	1770.59	1771.95	1771.69	1771.61	1771.50	1772.32	1777.61	1778.51	1780.18	1781.09	1783.08	1788.69	1791.22	1792.34	1794.63	1795.25	1796.27	1797.60	1798.94
TRENCH DEPTH	-1.31	-1.64	-1.71	-1.57	-1.70	-1.72	-0.90	-1.30	-1.57	-1.38	-1.22	-1.20	-1.07	-1.12	-1.20	-1.07	-1.20	-1.34	-1.39																										
CHAINAGE	14850	14900	14950	24000	24050	24100	24150	24200	24250	24300	24350	24400	24450	24500	24550	24600	24650	24700	24750																										
PIPE PARAMETERS	OD 250, PN 16, UPVC Q = 110.0m ³ /hr, V = 0.97m/s																																												

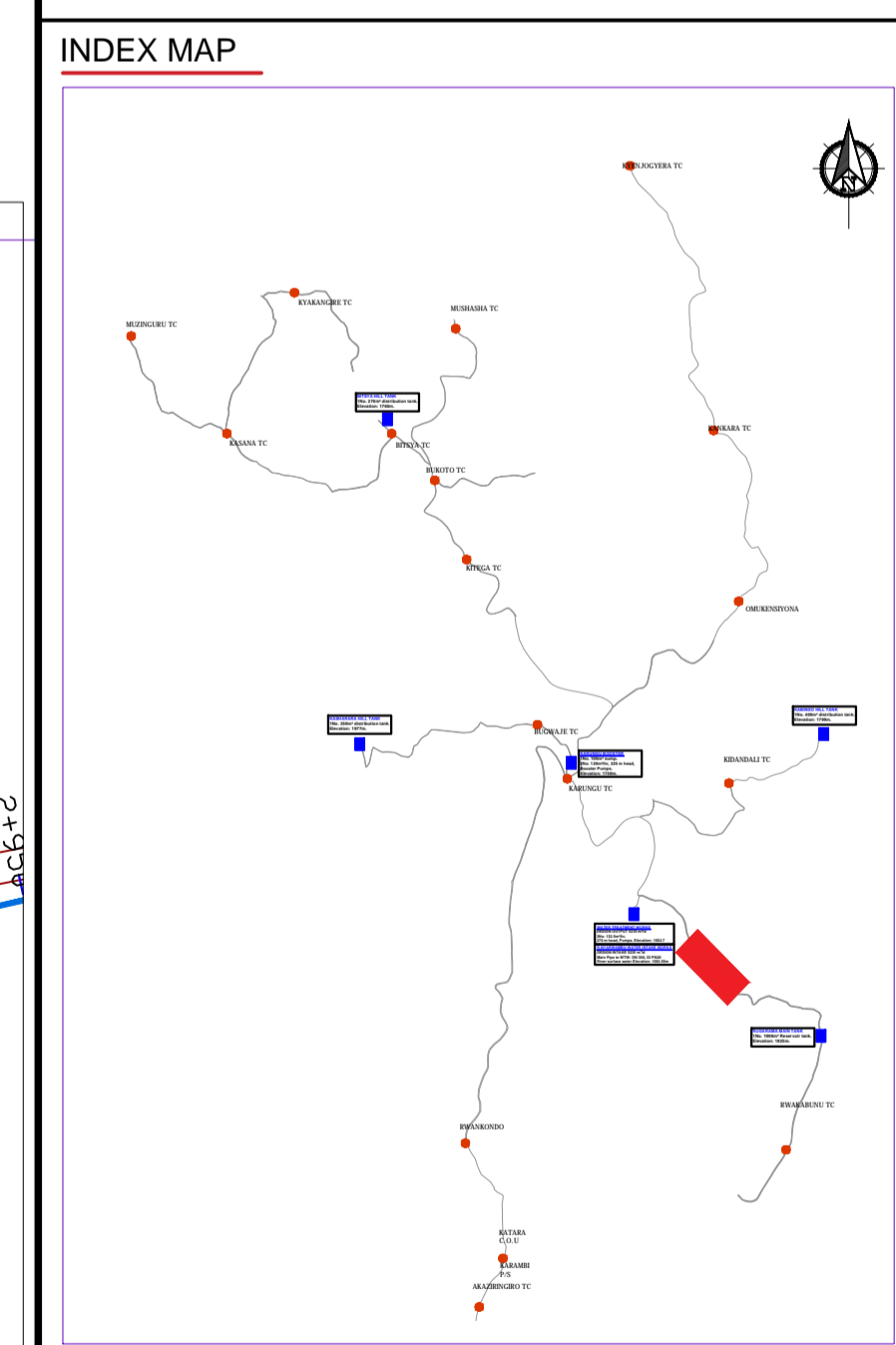
PUMPING MAIN PM_01



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

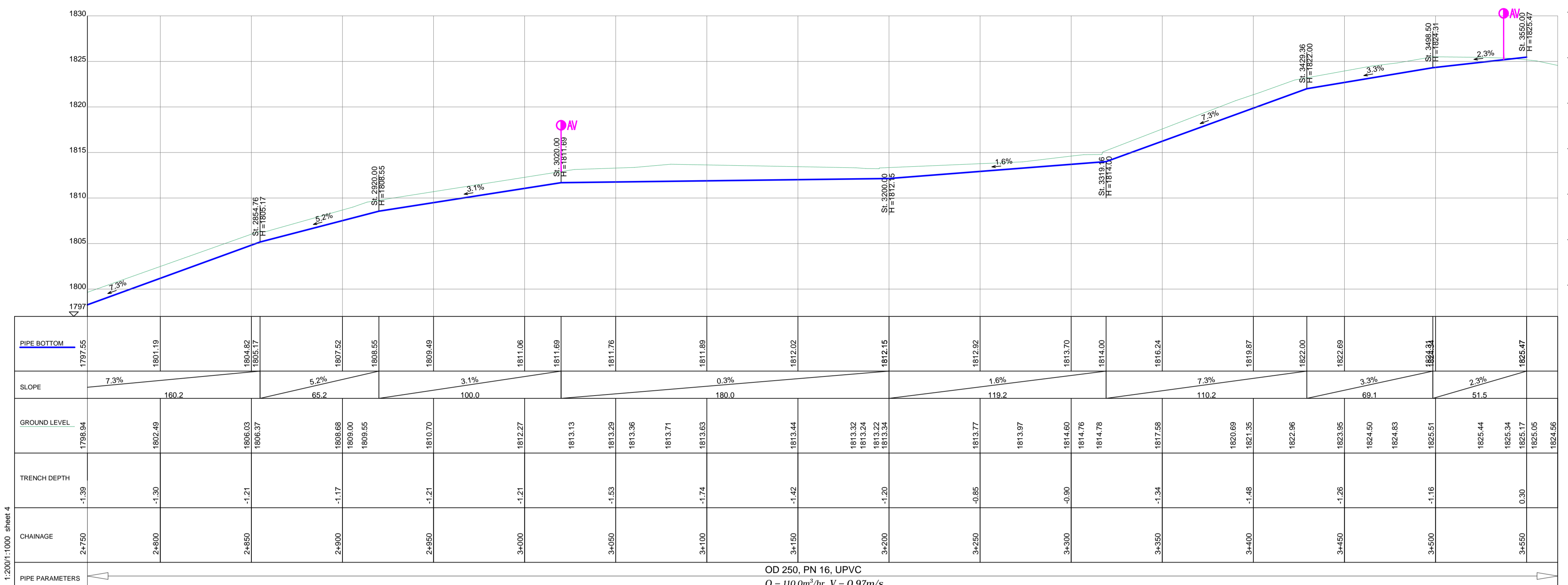
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
PUMPING MAIN PM_01

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/PM01-03 Date: SEPT 2021



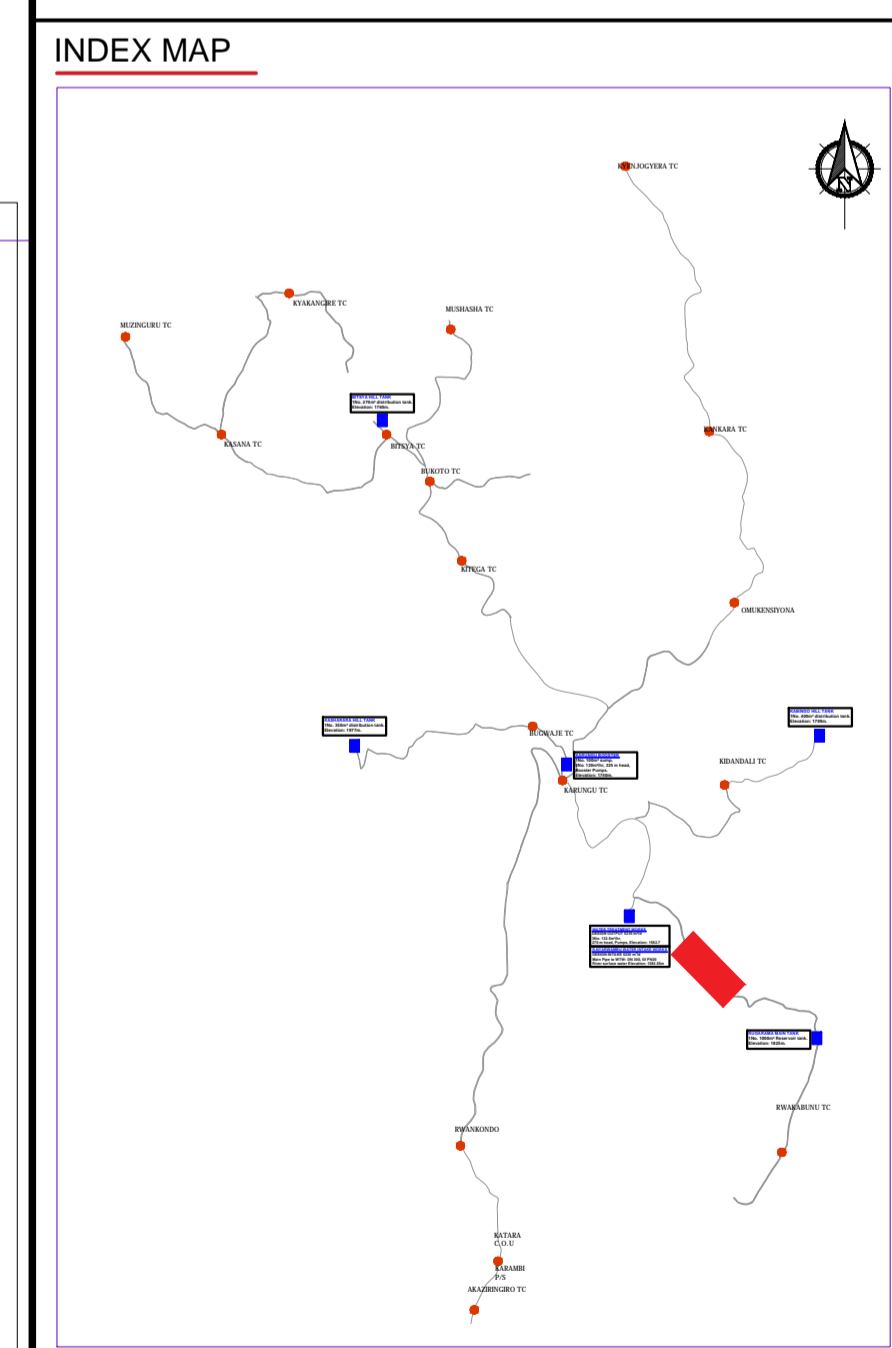
1:2000:1:1000 sheet 4

OD 250, PN 16, UPVC
 $Q = 110.0m^3/hr, V = 0.97m/s$

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

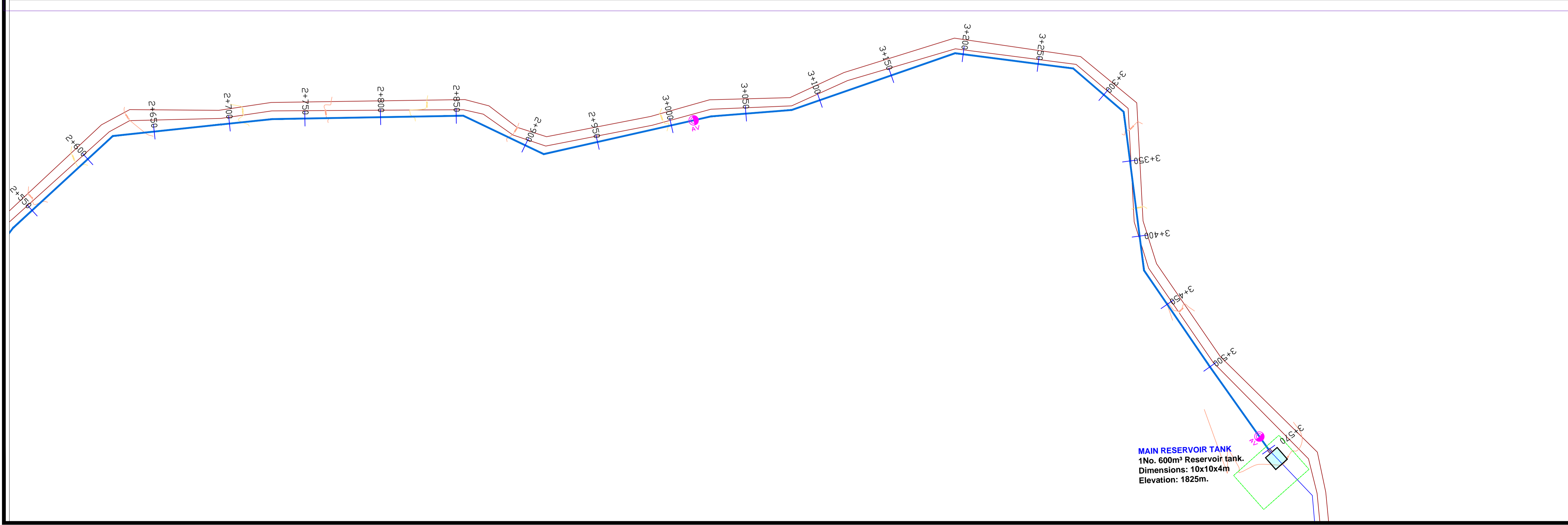
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

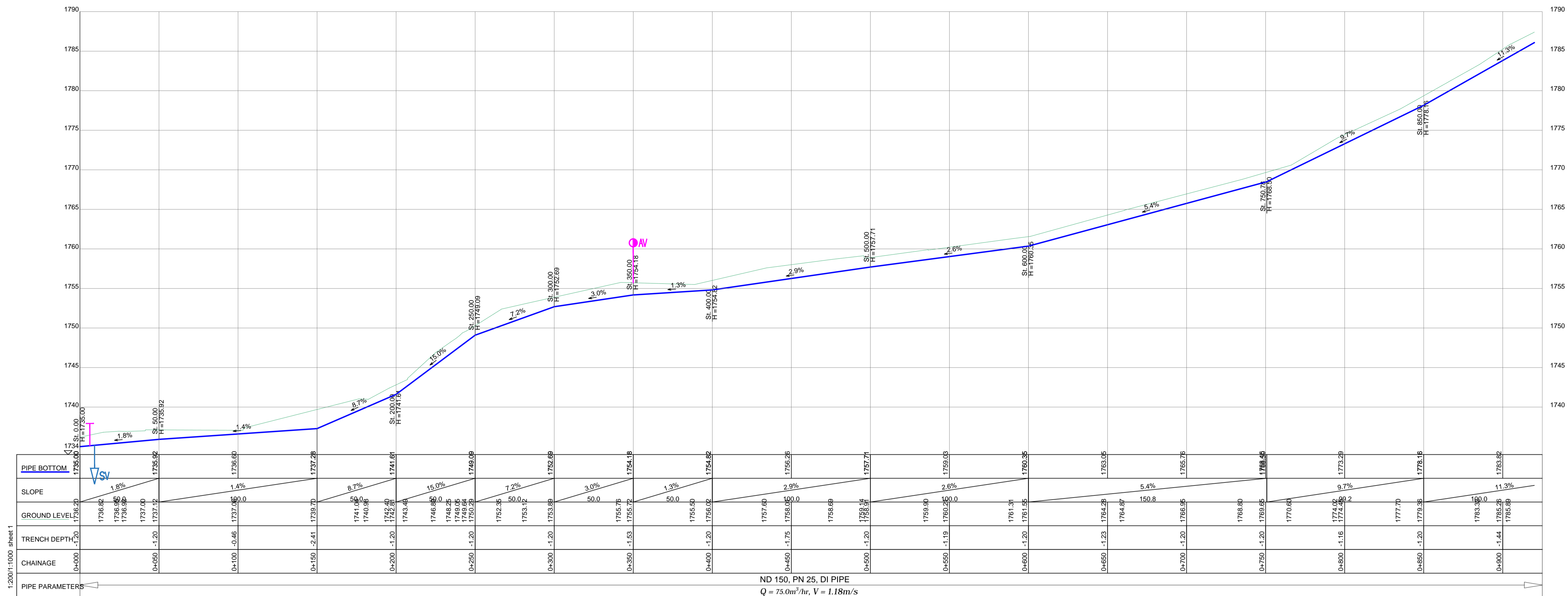
Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_01**

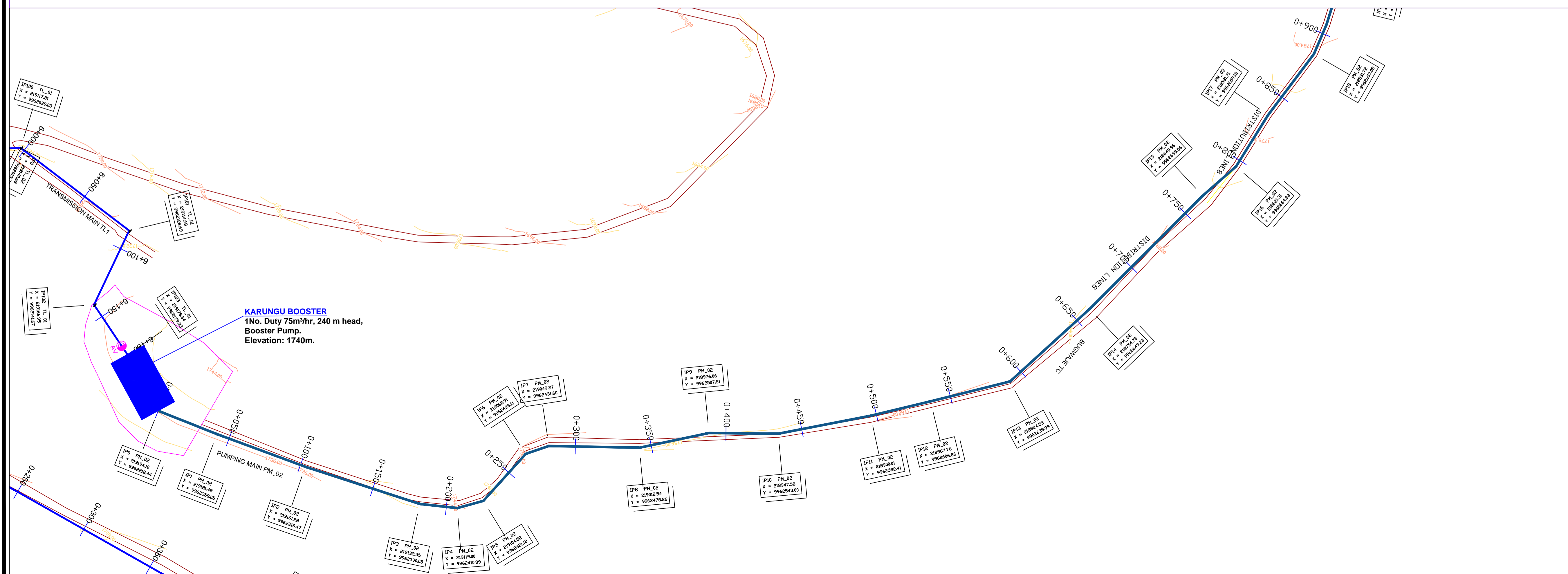
Consultants: **KAGGA & PARTNERS**
 PLOT 2, BANDAAL CLOSE GOLD PORT BELL ROAD,
 TEL: 256 41 220279,
 FAX: 256 41 220208,
 P.O. BOX 6585,
 KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/PM01-04 Date: SEPT 2021





PUMPING MAIN PM_02

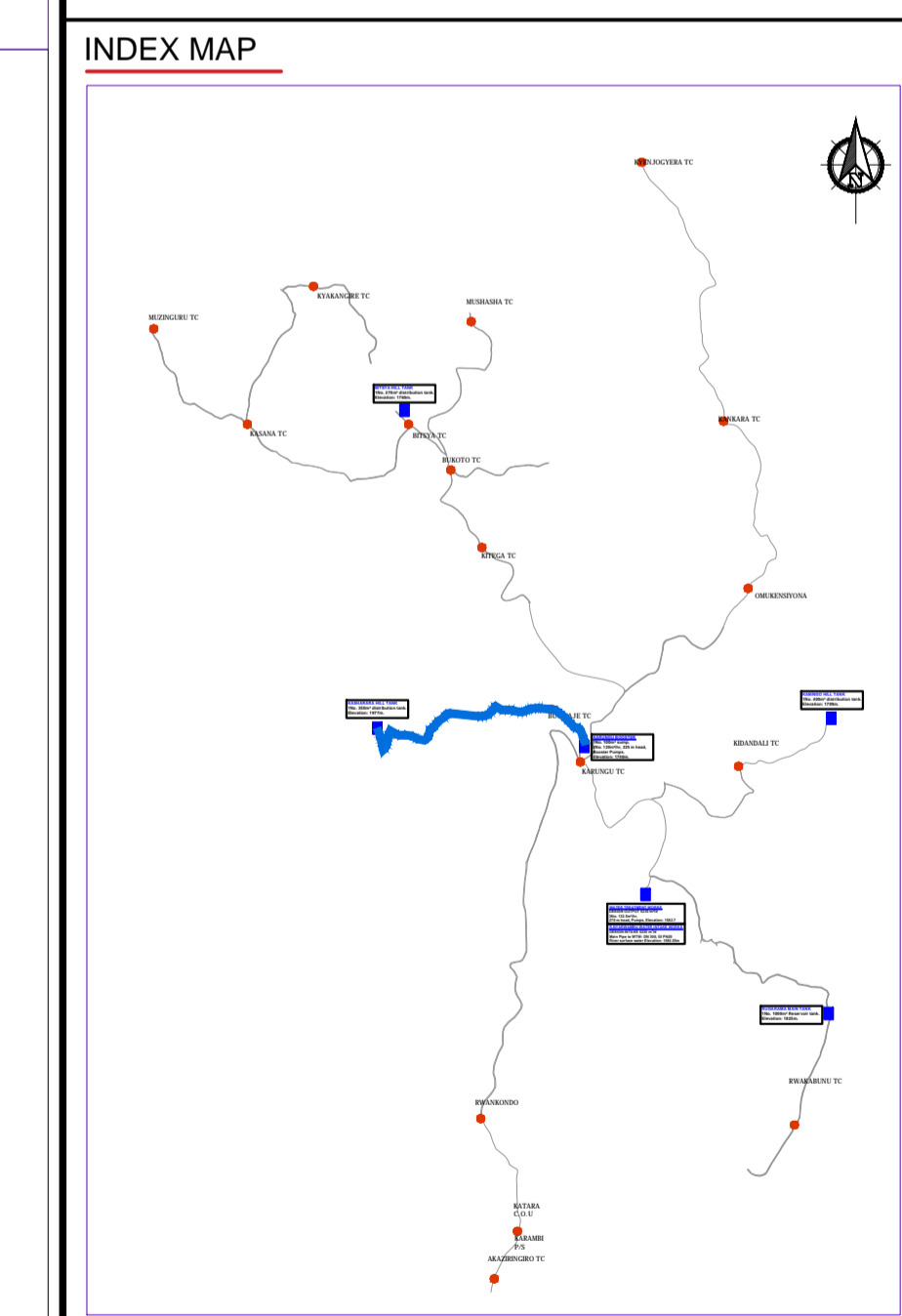


KARUNGU BOOSTER
 1No. Duty 75m³/hr, 240 m head,
 Booster Pump.
 Elevation: 1740m.

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



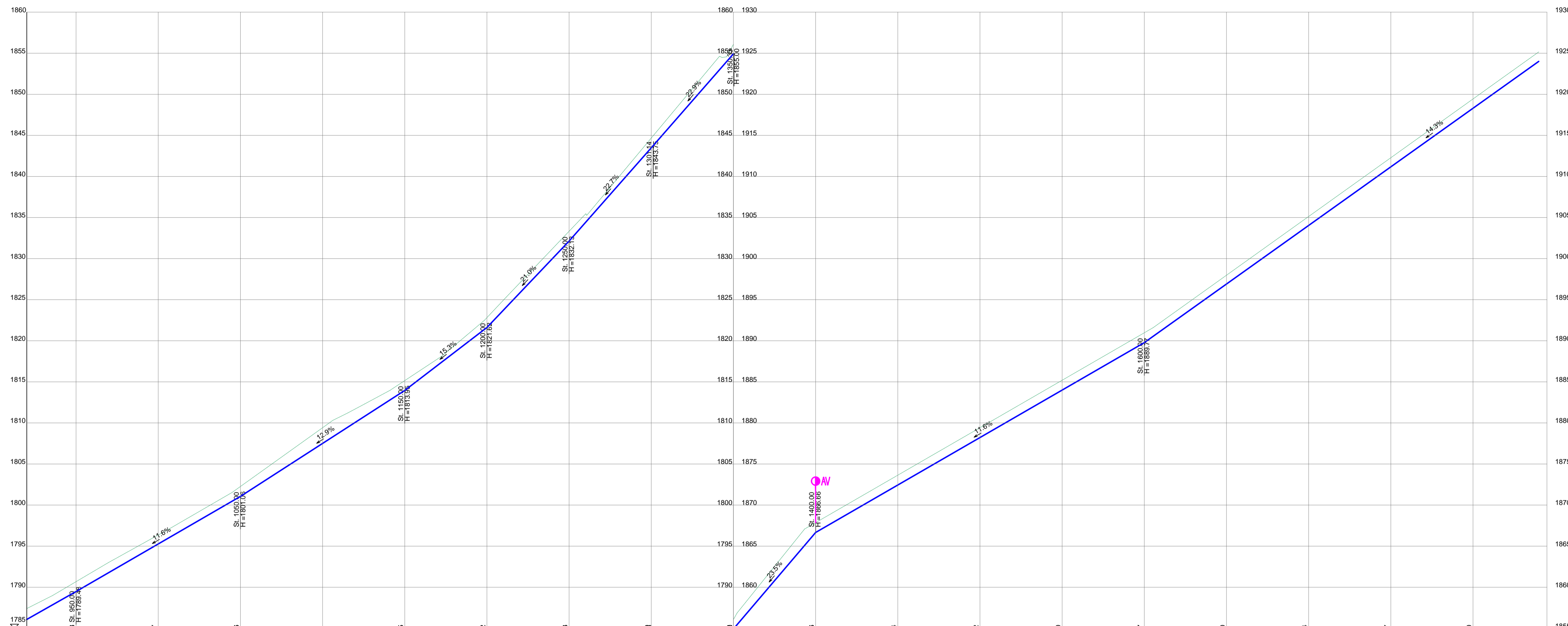
Client: **REPUBLIC OF UGANDA**
 MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_02**

Consultants: **KAGGA & PARTNERS**
 PLOT 2, RANDALL CLOSE GOLD PORT BELL ROAD,
 TEL: 256 41 220279,
 FAX: 256 41 220208,
 P.O. BOX 65852,
 KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/PM02-01 Date: SEPT 2021



Station	BEING BOTTOM	SLOPE	GROUND LEVEL	DRAINAGE DEPTH	DRAINAGE
0+950	1788.00	11.6%	1788.00	-1.20	0+950
1+000	1793.00	11.6%	1793.00	-1.09	1+000
1+050	1801.54	12.9%	1801.54	-1.20	1+050
1+100	1809.42	15.3%	1809.42	-1.01	1+100
1+150	1818.04	21.0%	1818.04	-1.20	1+150
1+200	1822.82	22.7%	1822.82	-1.20	1+200
1+250	1832.13	23.5%	1832.13	-1.20	1+250
1+300	1844.08	11.6%	1844.08	-1.19	1+300
1+350	1854.63	11.6%	1854.63	-1.16	1+350
1+400	1866.68	11.6%	1866.68	-1.20	1+400
1+450	1872.44	11.6%	1872.44	-1.20	1+450
1+500	1878.22	11.6%	1878.22	-1.20	1+500
1+550	1884.00	11.6%	1884.00	-1.20	1+550
1+600	1889.77	11.6%	1889.77	-1.20	1+600
1+650	1896.30	11.6%	1896.30	-1.07	1+650
1+700	1904.04	11.6%	1904.04	-1.10	1+700
1+750	1911.17	11.6%	1911.17	-1.12	1+750
1+800	1918.30	11.6%	1918.30	-1.14	1+800

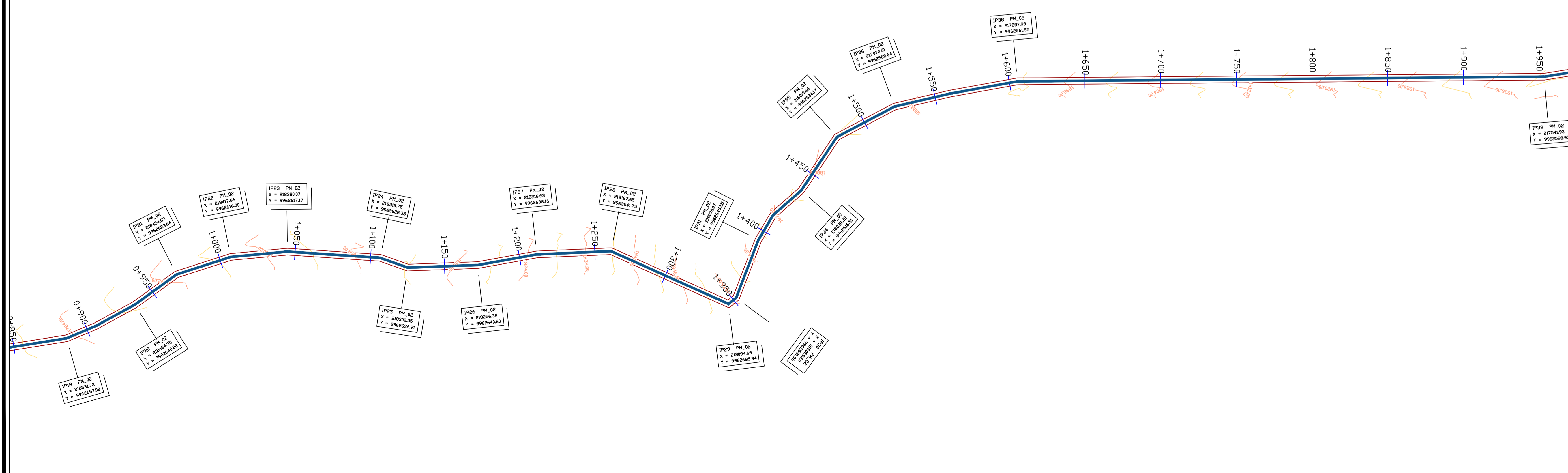
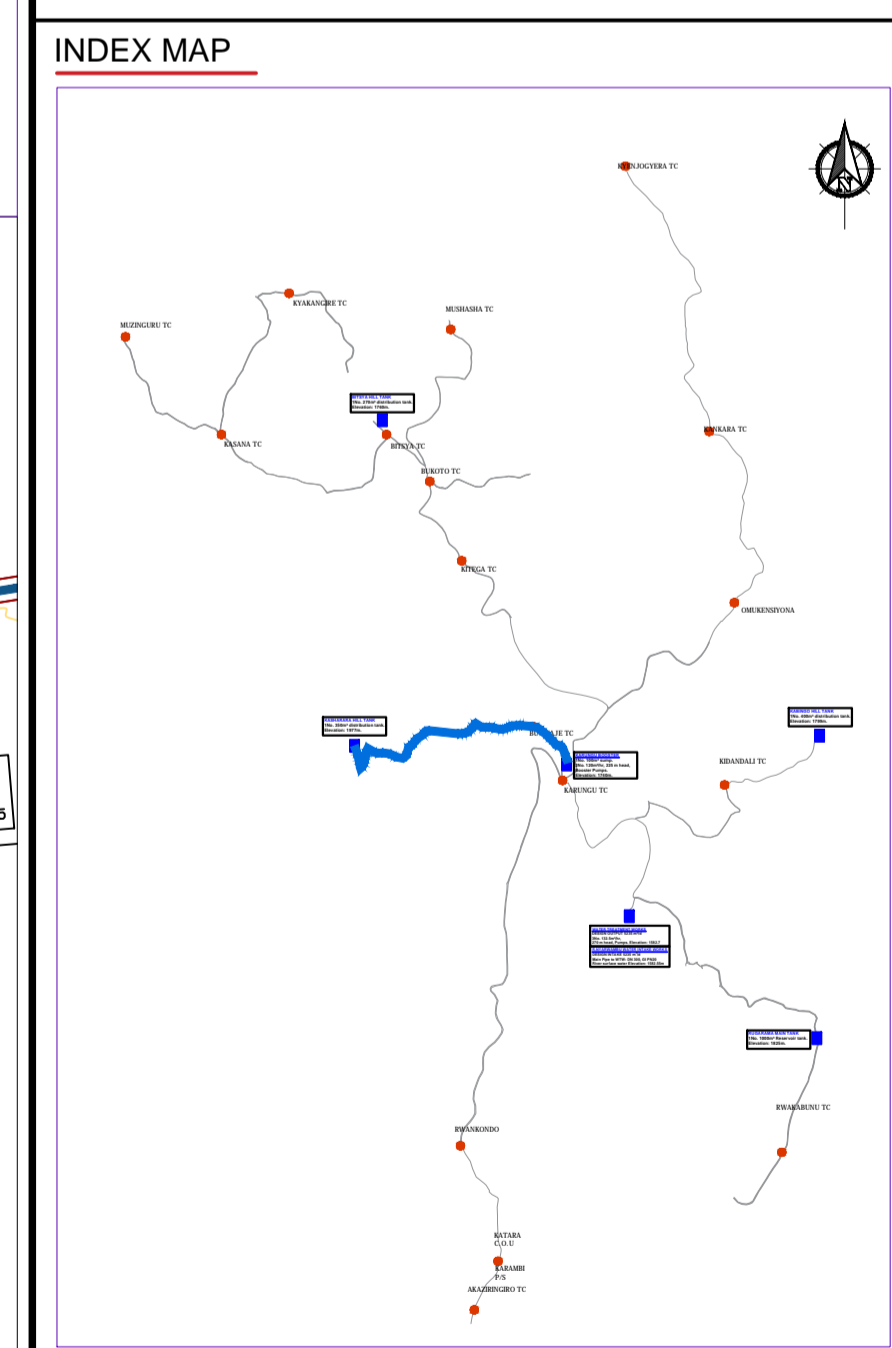
ND 150, PN 25, DI PIPE
 Q = 75.0m³/hr, V = 1.18m/s

PUMPING MAIN PM_02

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

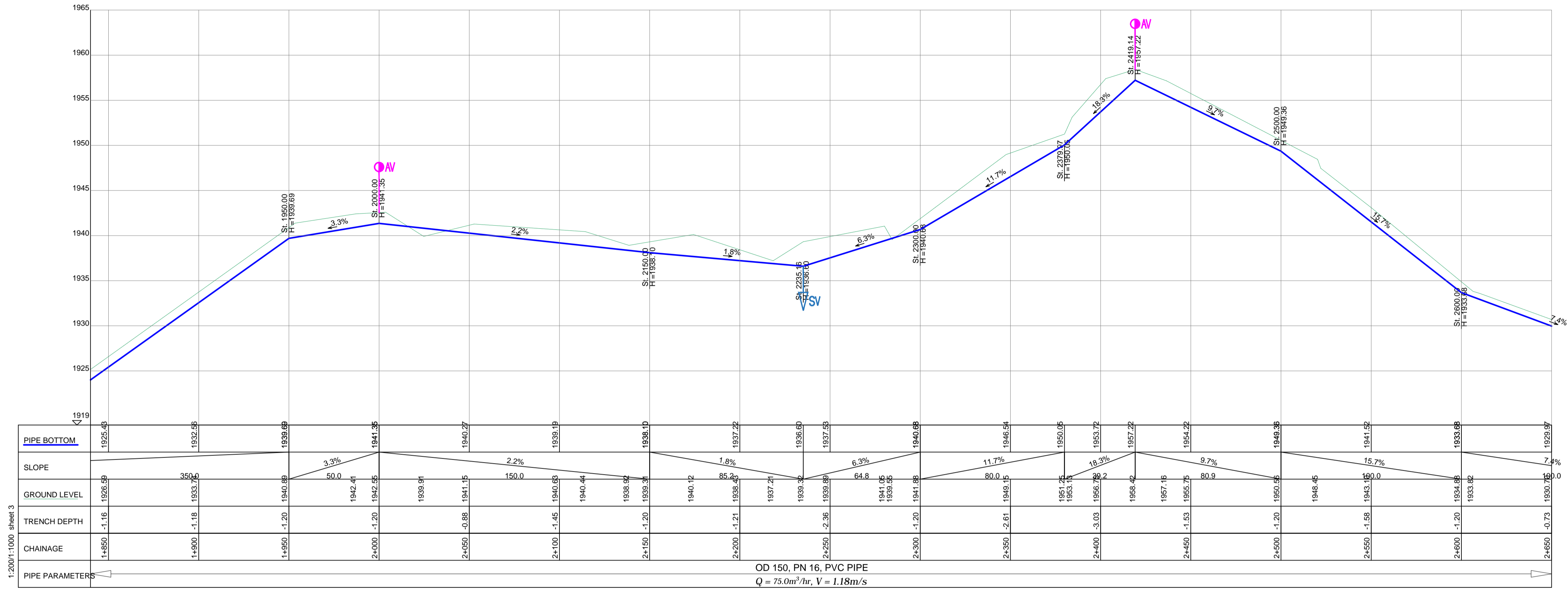
Client: **REPUBLIC OF UGANDA**
 MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

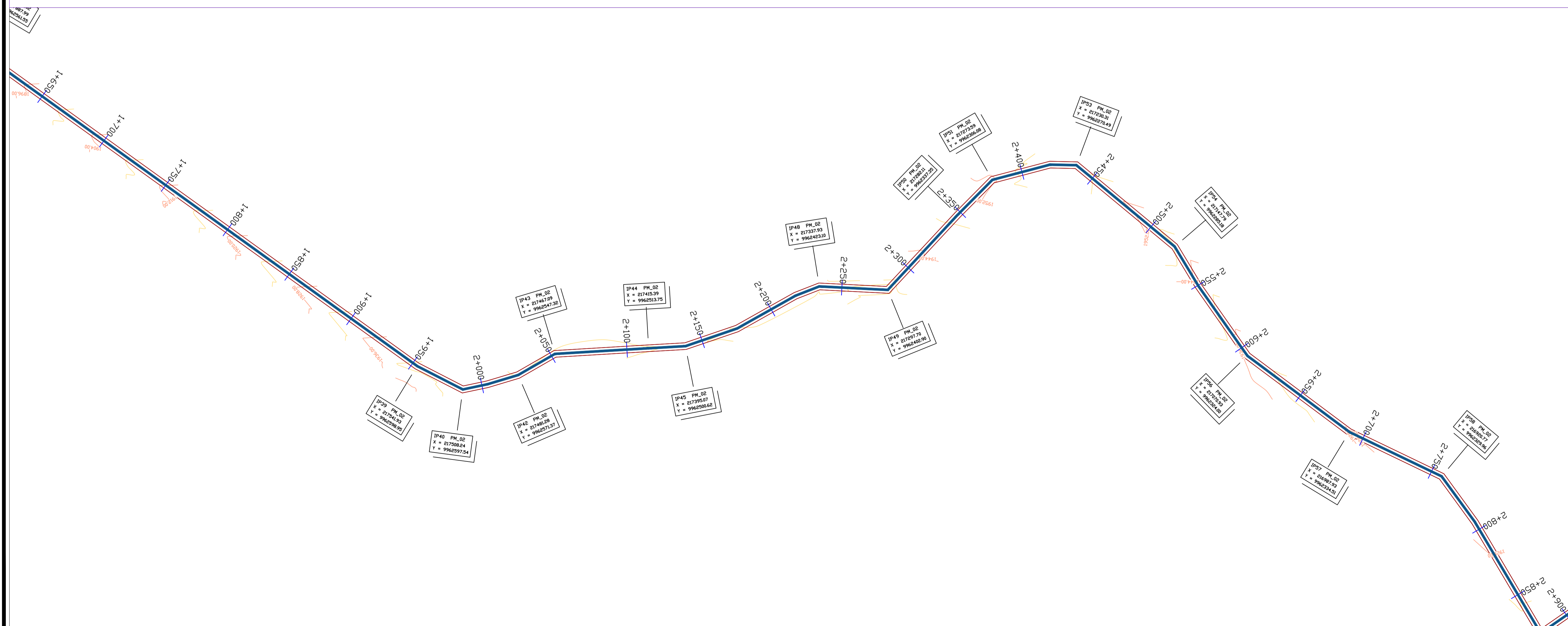
Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_02**

Consultants: **KAGGA & PARTNERS**
 PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
 TEL: 256 41 220279, FAX: 256 41 220208,
 P.O. BOX 65824, KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/PM02-02 Date: SEPT 2021



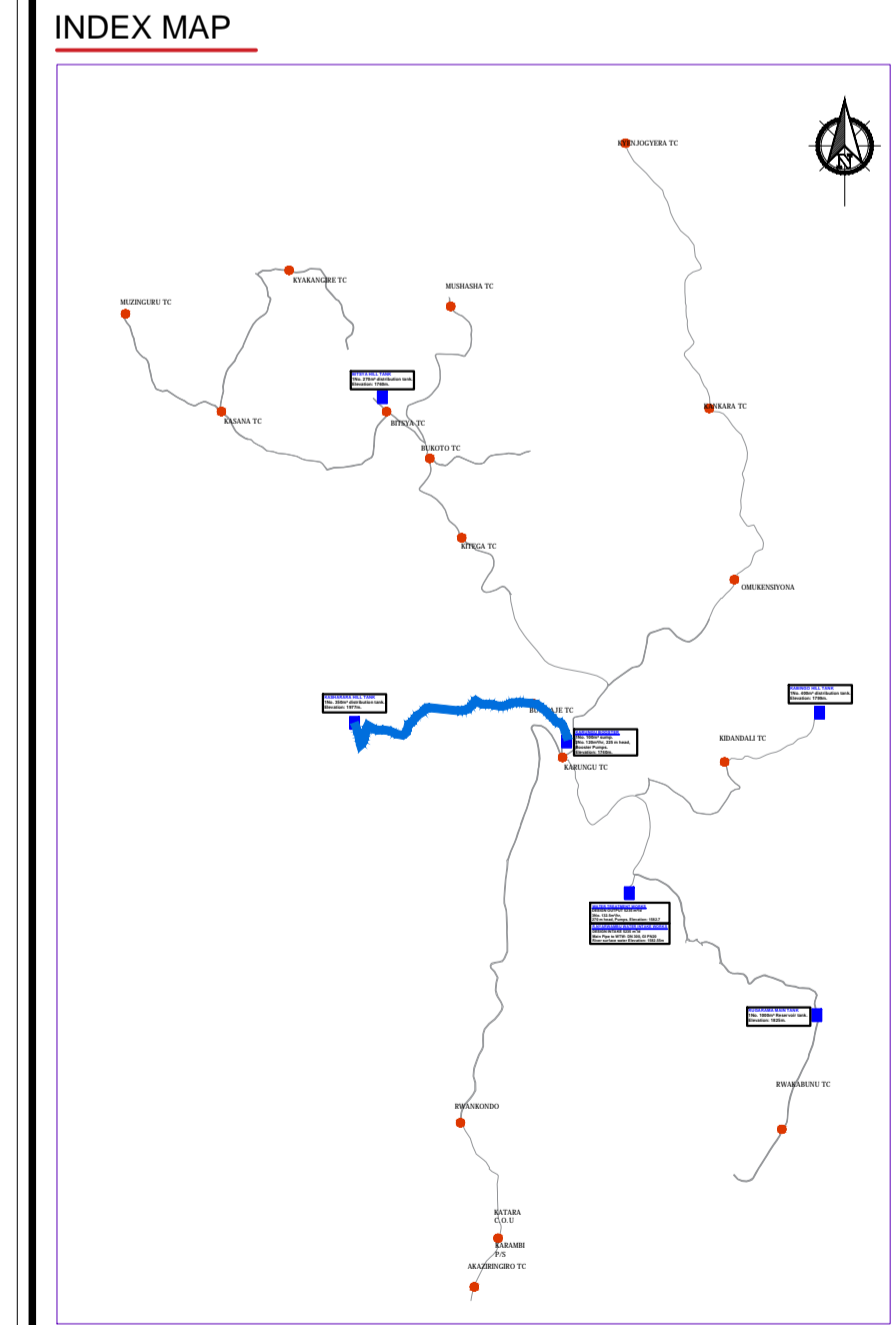
PUMPING MAIN PM_02



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
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Scale: Horizontal 1 : 1000
Vertical 1 : 100

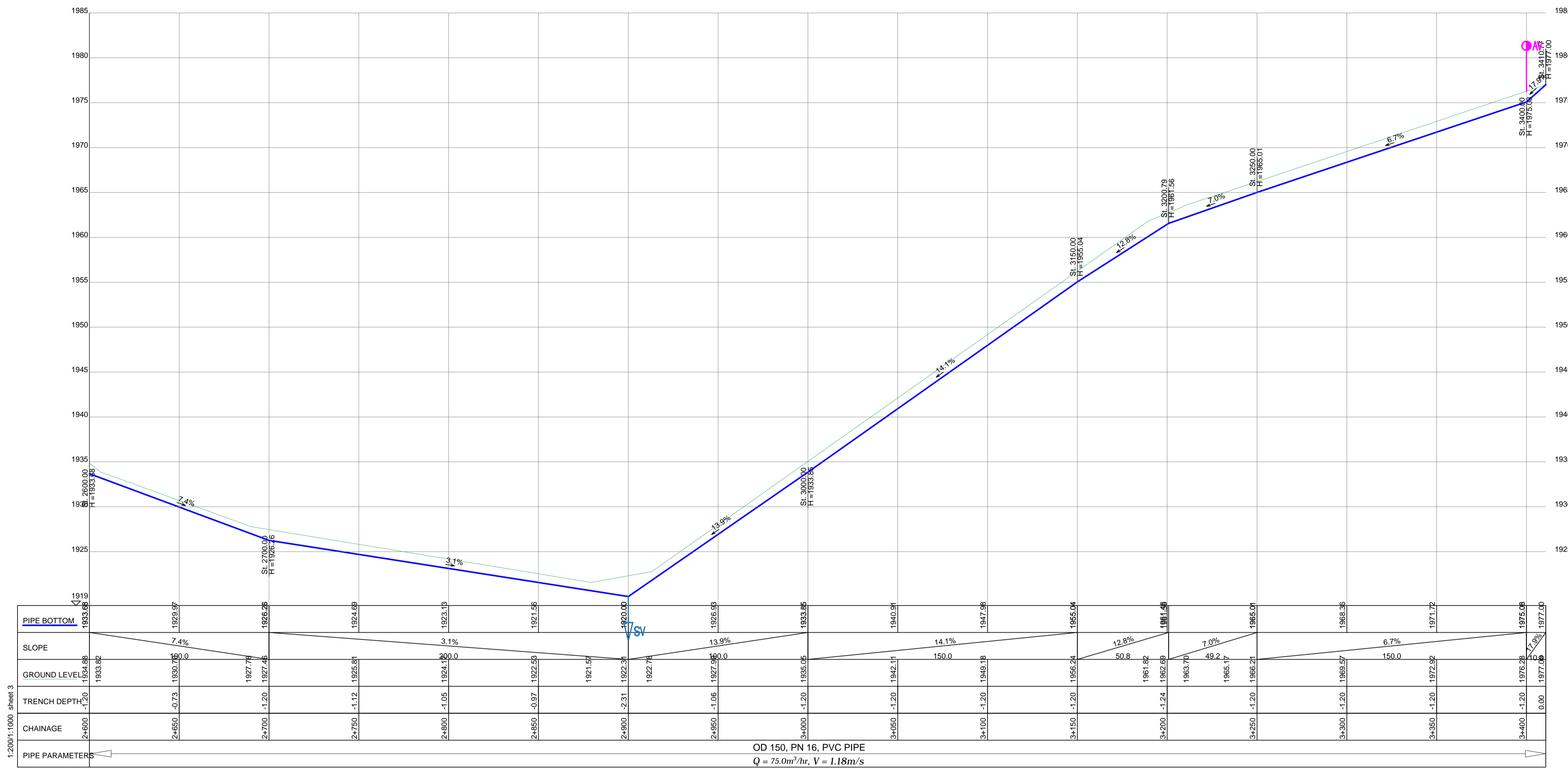
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
PUMPING MAIN PM_02

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

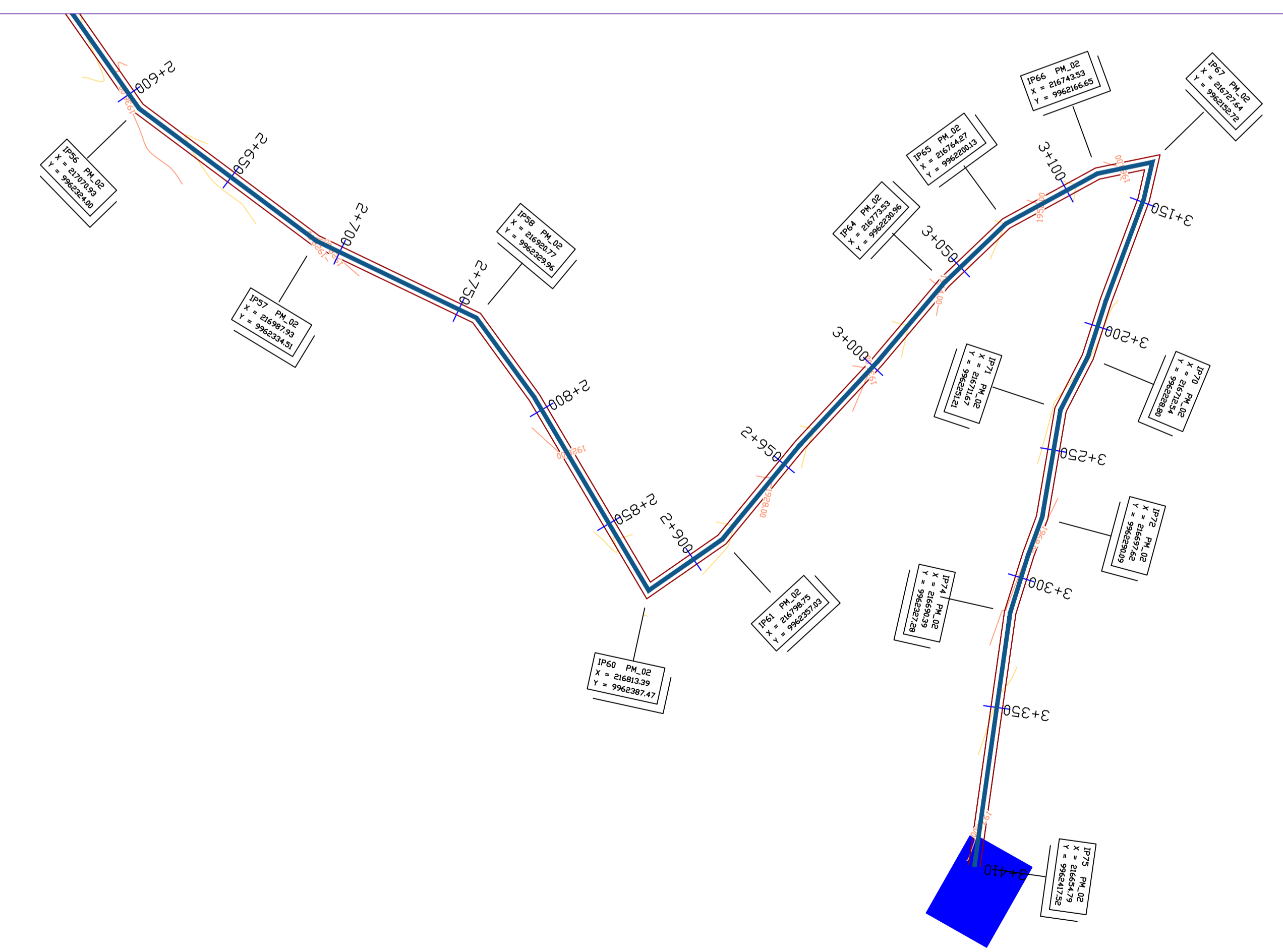
DRG. NO. KP/BWS/PP/PM02-03 Date: SEPT 2021



CHAINAGE	PIPE BOTTOM	SLOPE	GROUND LEVEL	TRENCH DEPTH
2+600	1933.85		1933.82	-1.20
2+650	1929.97	7.4%	1930.75	-0.73
2+700	1926.25		1927.75	-1.20
2+750	1924.89		1925.81	-1.12
2+800	1923.13	3.1%	1924.00	-1.05
2+850	1921.95		1922.59	-0.97
2+900	1920.00		1922.31	-2.31
2+950	1926.93	13.9%	1927.65	-1.05
3+000	1933.85		1935.05	-1.20
3+050	1940.91		1942.11	-1.20
3+100	1947.88	14.1%	1949.18	-1.20
3+150	1955.04		1956.24	-1.20
3+200	1961.51	12.8%	1962.89	-1.24
3+250	1965.01		1966.21	-1.20
3+300	1968.35	7.0%	1969.57	-1.20
3+350	1971.72		1972.92	-1.20
3+400	1975.00	6.7%	1976.28	-1.20
	1977.00	1.0%	1977.00	0.00

OD 150, PN 16, PVC PIPE
 $Q = 75.0 \text{ m}^3/\text{hr}$, $V = 1.18 \text{ m/s}$

PUMPING MAIN PM_02

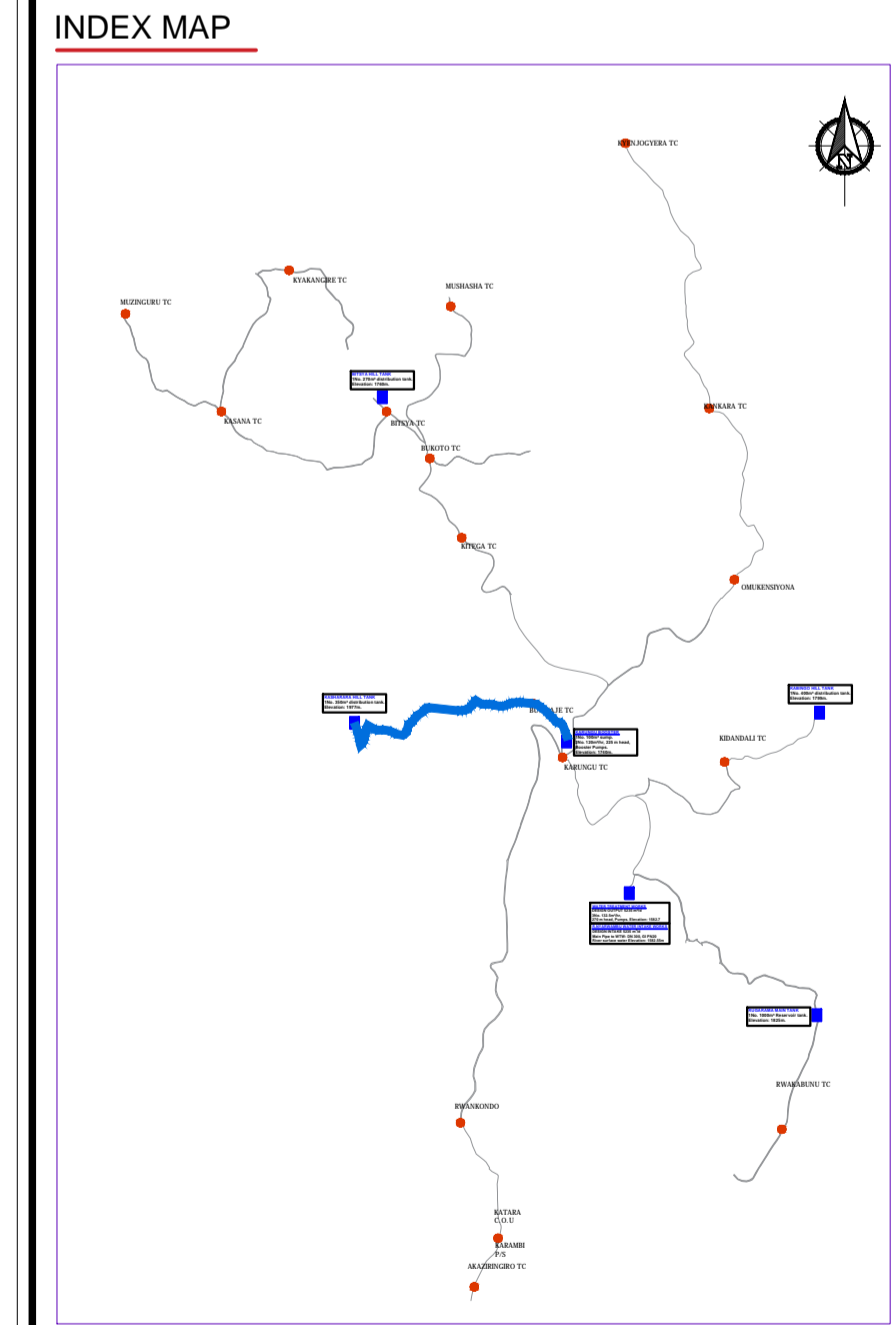


KASHARARA HILL TANK
 1No. 250m³ distribution tank.
 Elevation: 1977m.

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
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Scale: Horizontal 1 : 1000
 Vertical 1 : 100

Client: **REPUBLIC OF UGANDA**
 MINISTRY OF WATER AND ENVIRONMENT

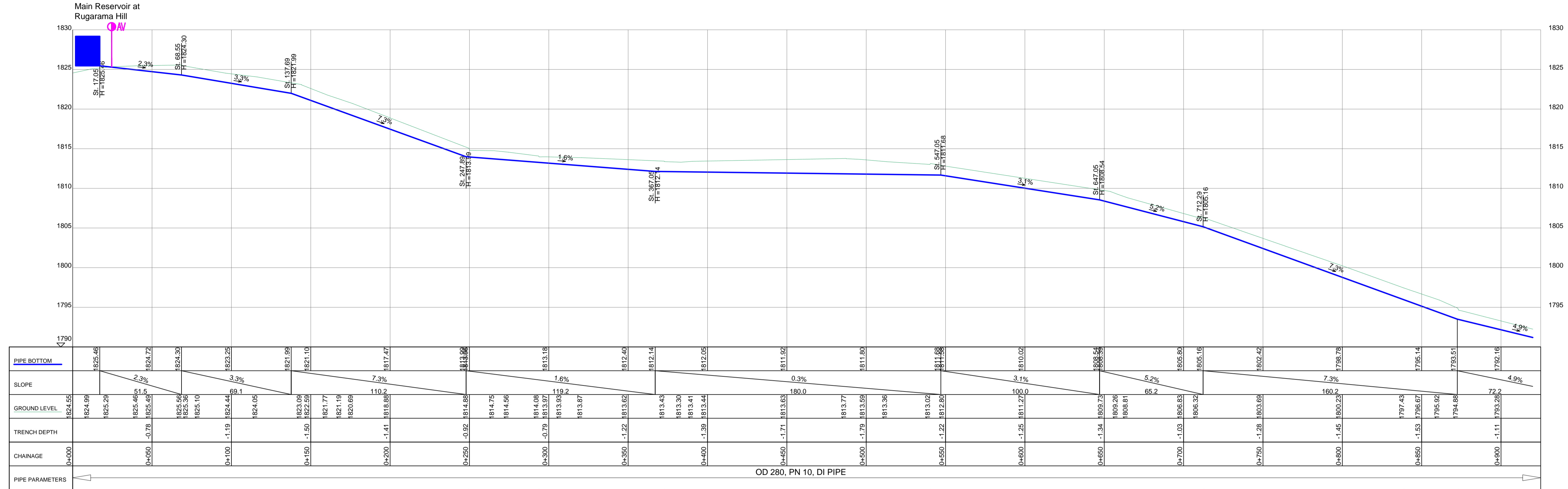
Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
PUMPING MAIN PM_02

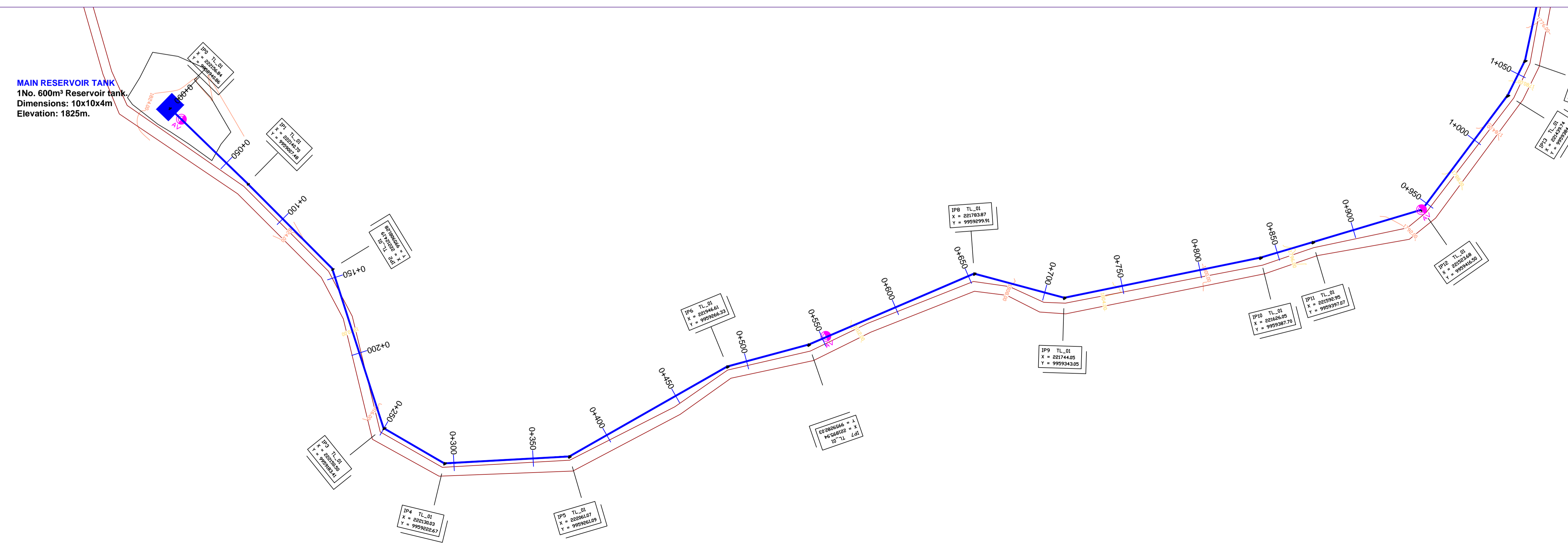
Consultants: **KAGGA & PARTNERS**
 PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
 TEL: 256 41 220279,
 FAX: 256 41 220208,
 P.O. BOX 6585,
 KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/PM02-04 Date: SEPT 2021

TRANSMISSION MAINS



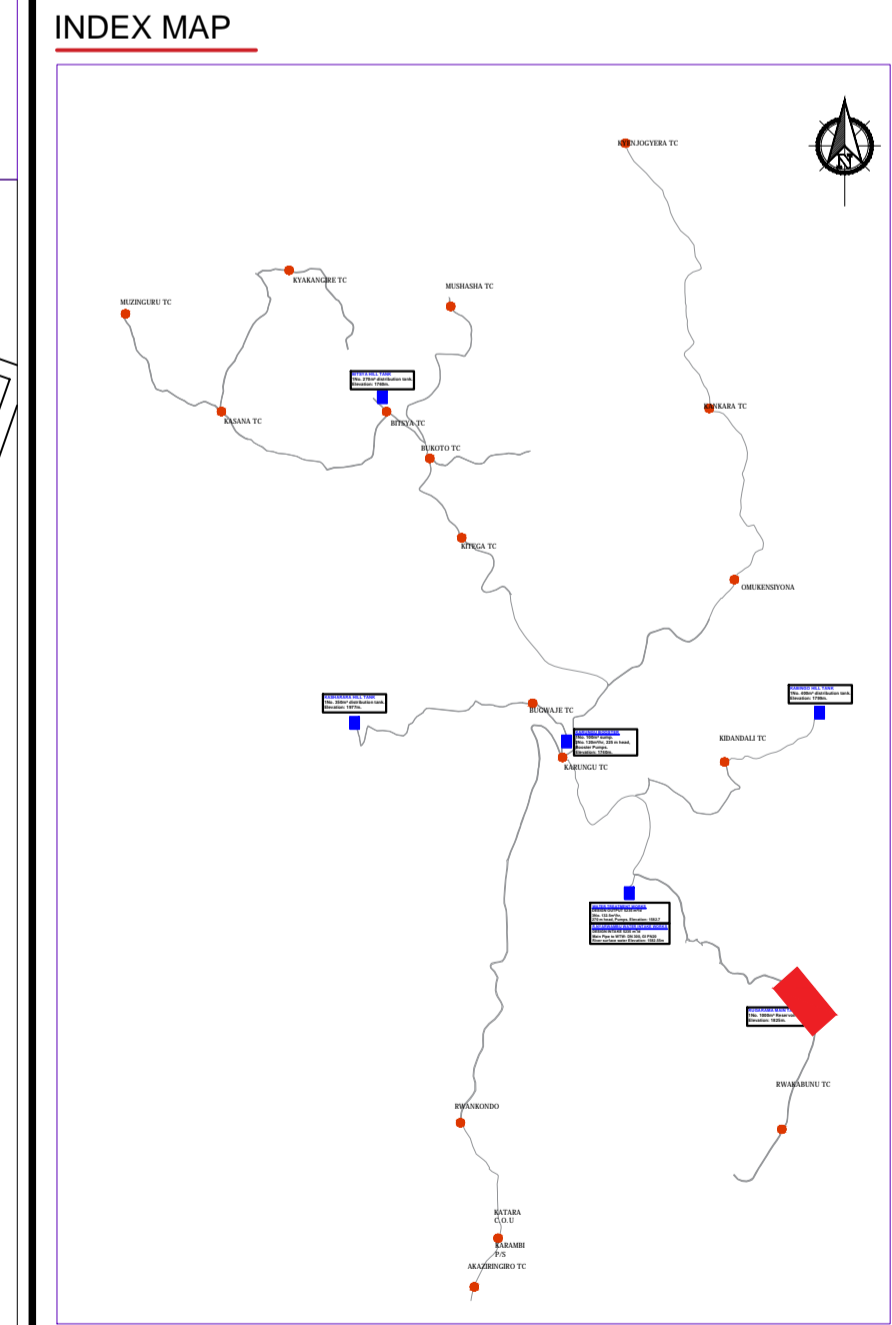
TRANSMISSION MAIN TL_01



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
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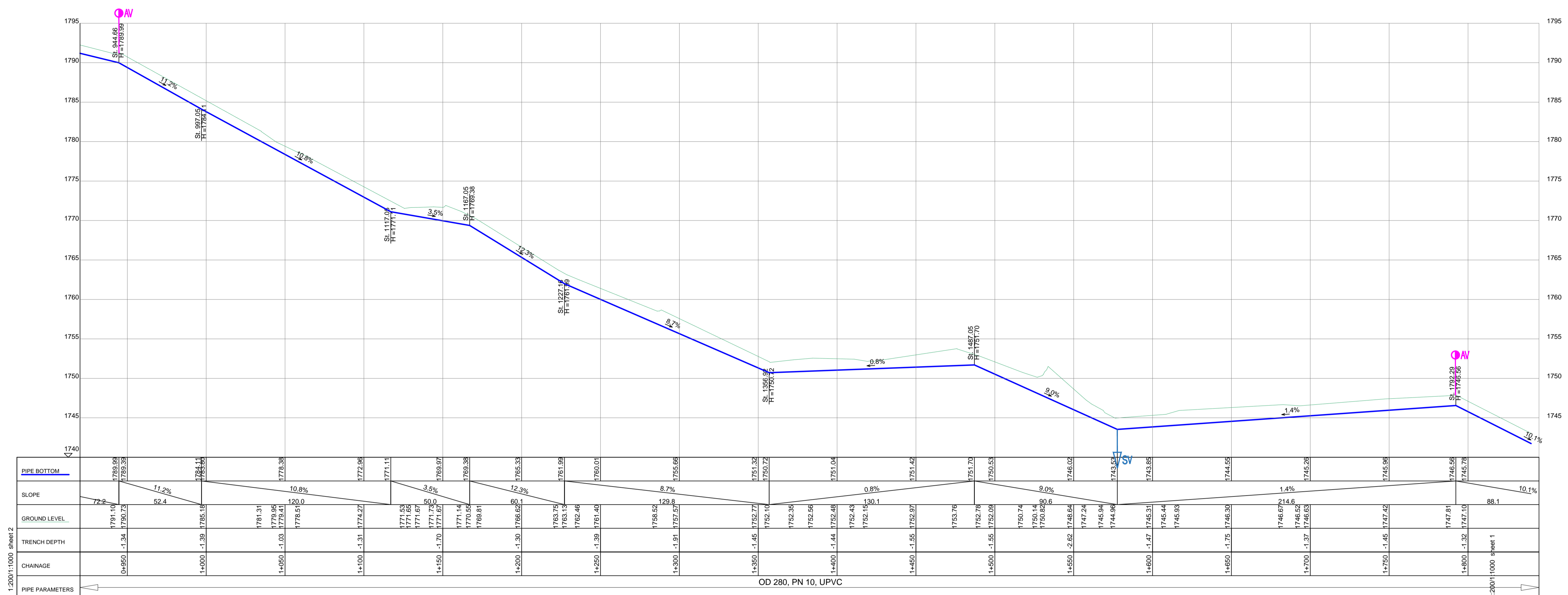
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_01**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL01-01 Date: SEPT 2021

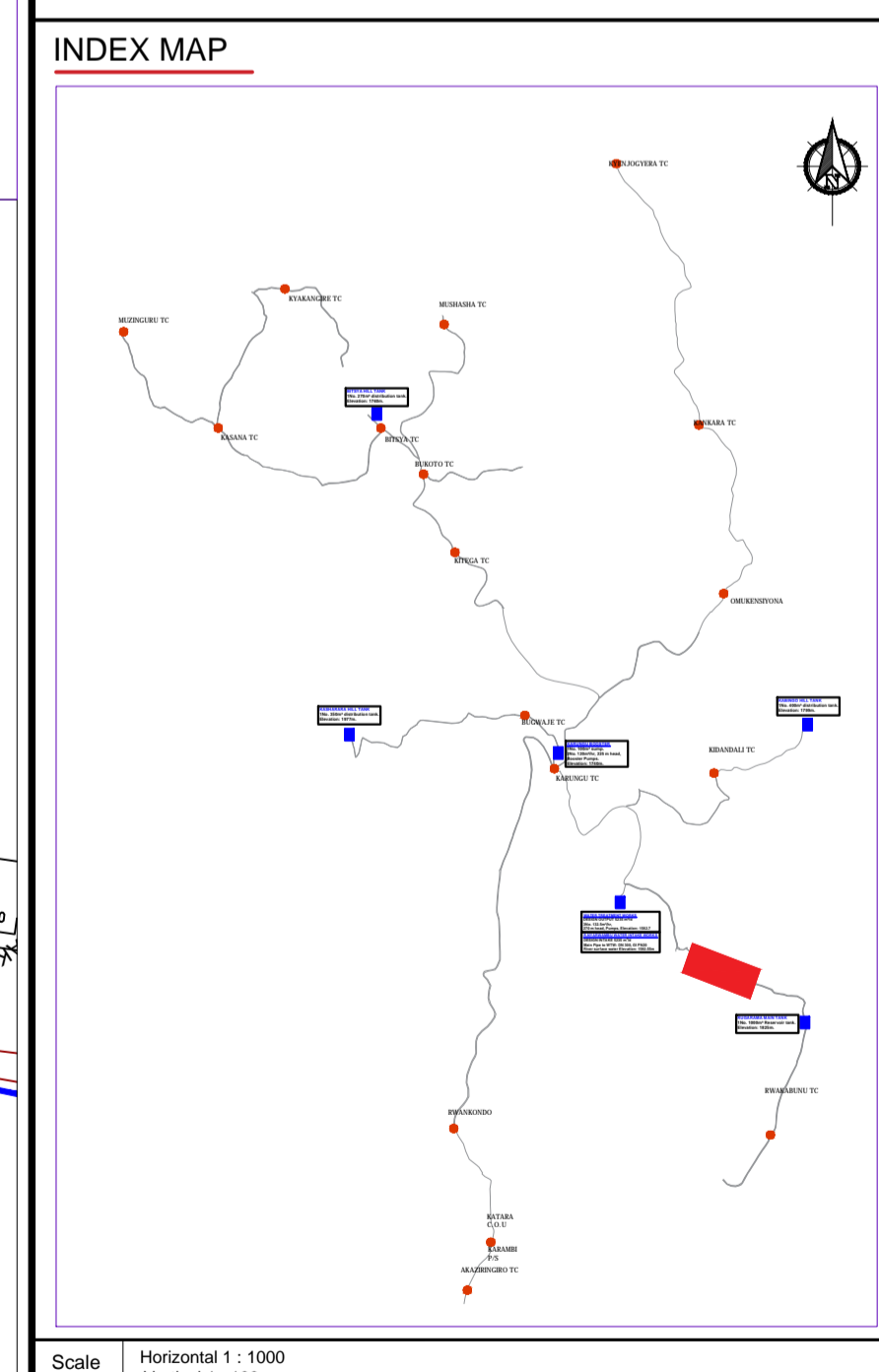
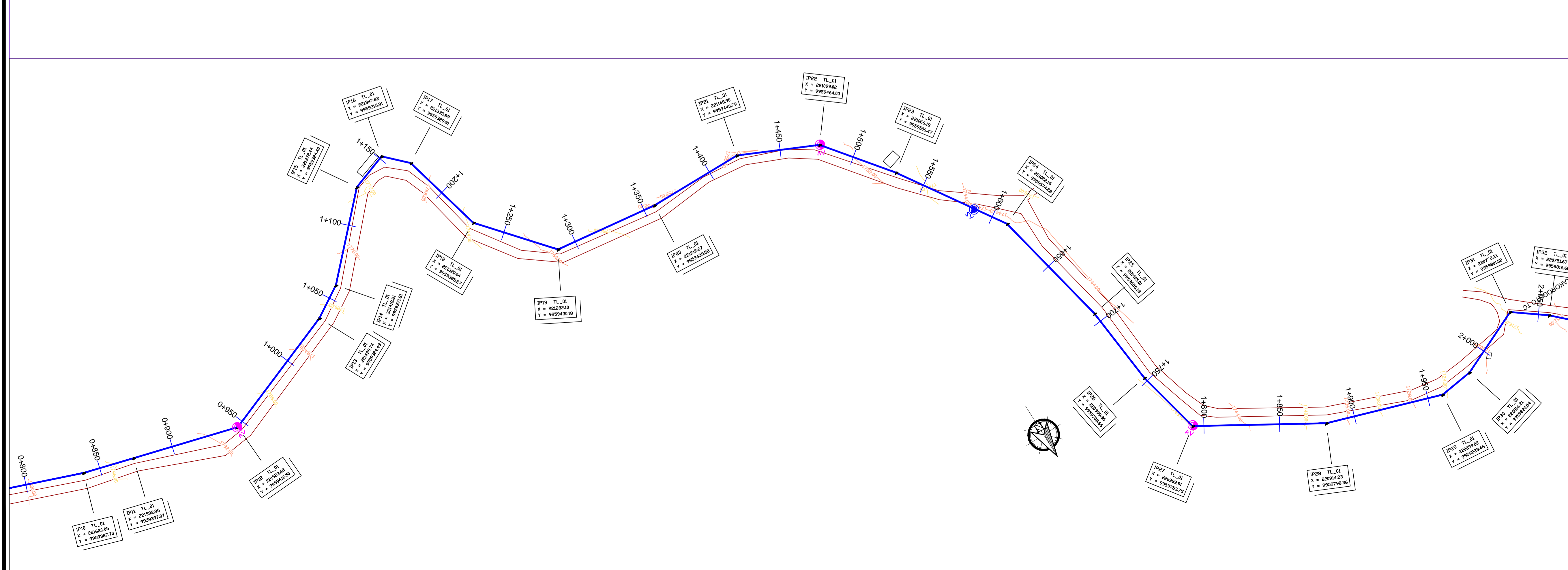


TRANSMISSION MAIN TL_01

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
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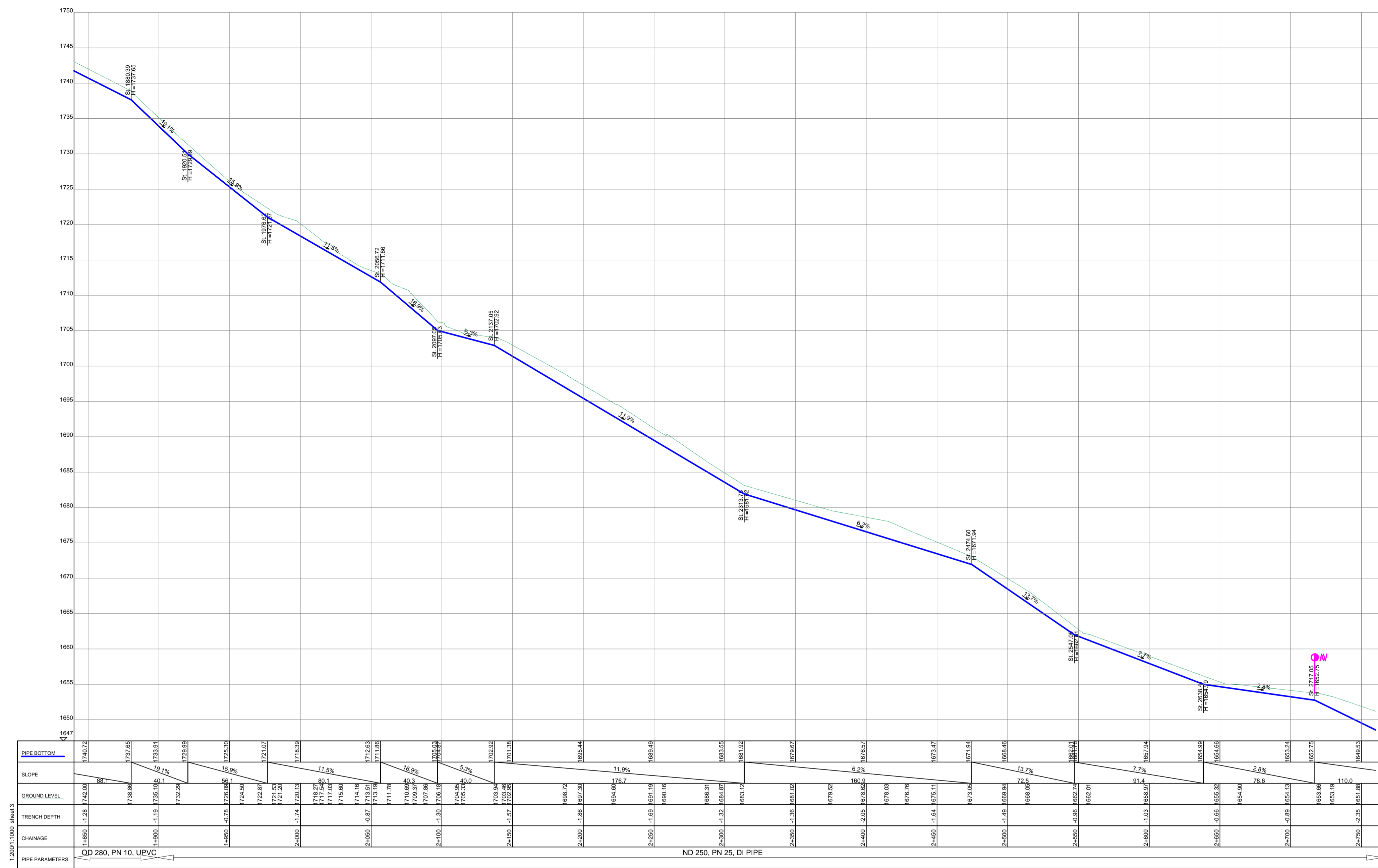
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

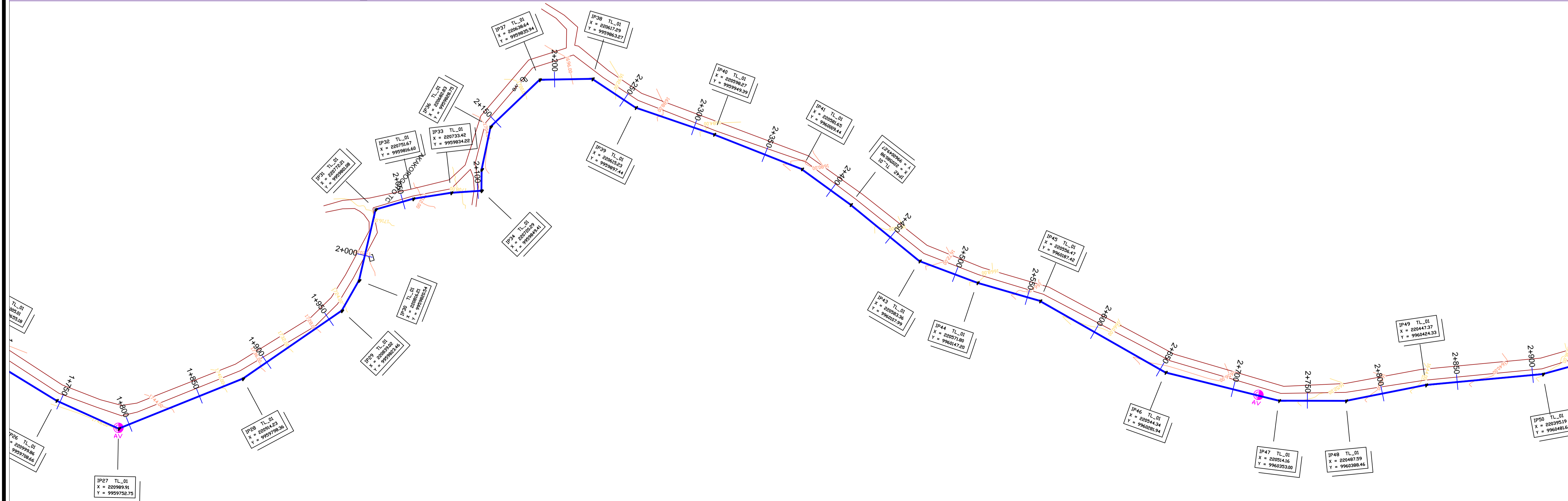
Title: **PLAN PROFILE OF PIPE LINE**
TRANSMISSION MAIN TL_01

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL1-02 Date: SEPT 2021



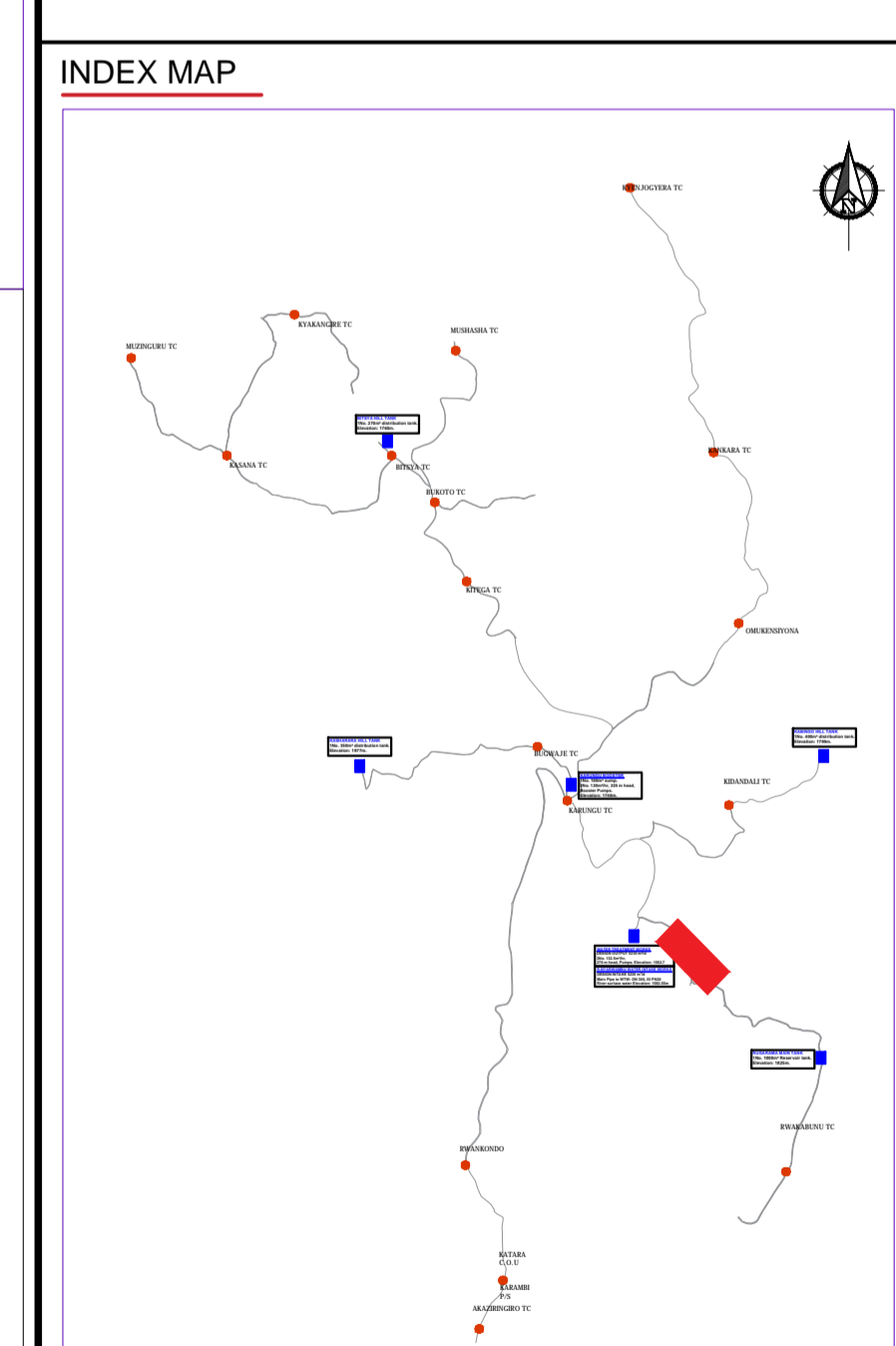
TRANSMISSION MAIN TL_01



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
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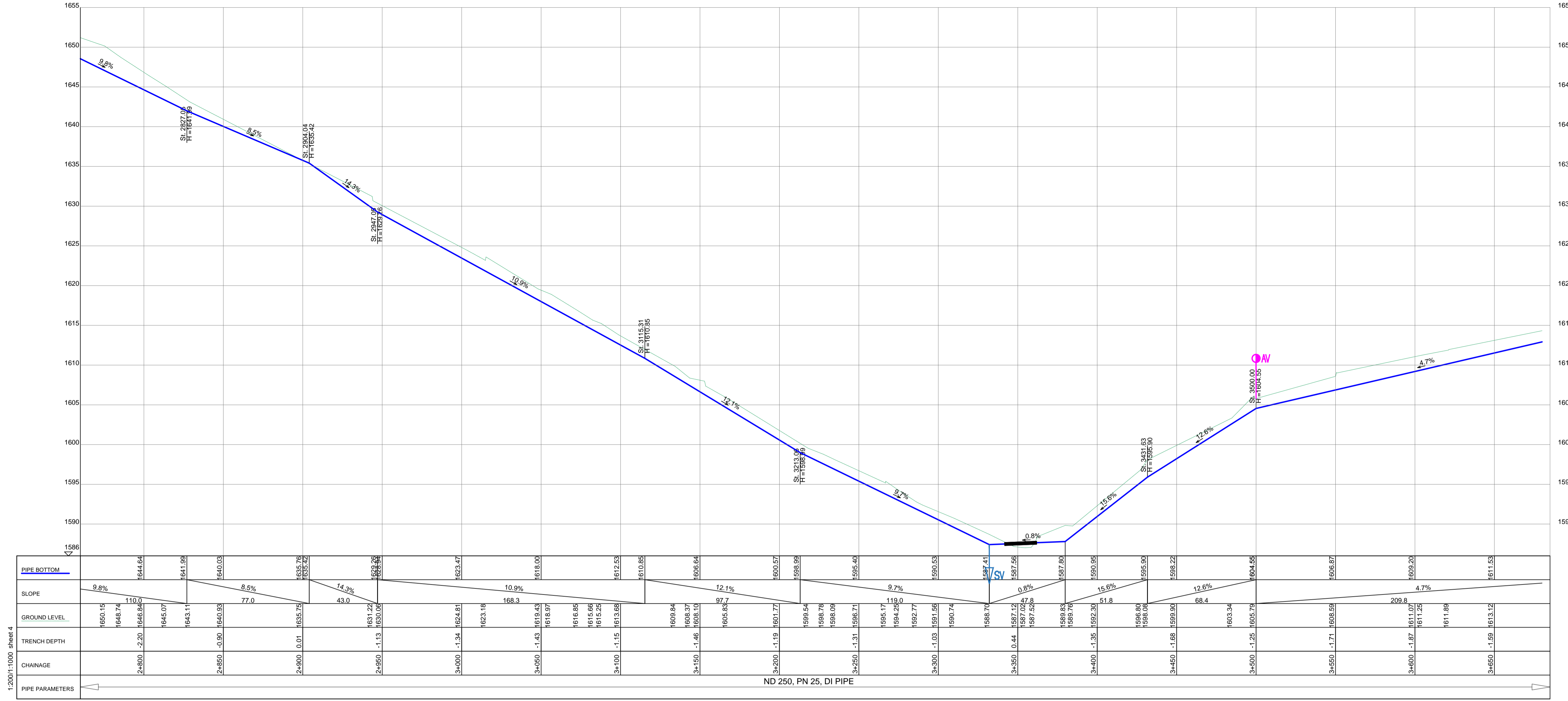
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_01**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/TL01-03 Date /SEPT 2021

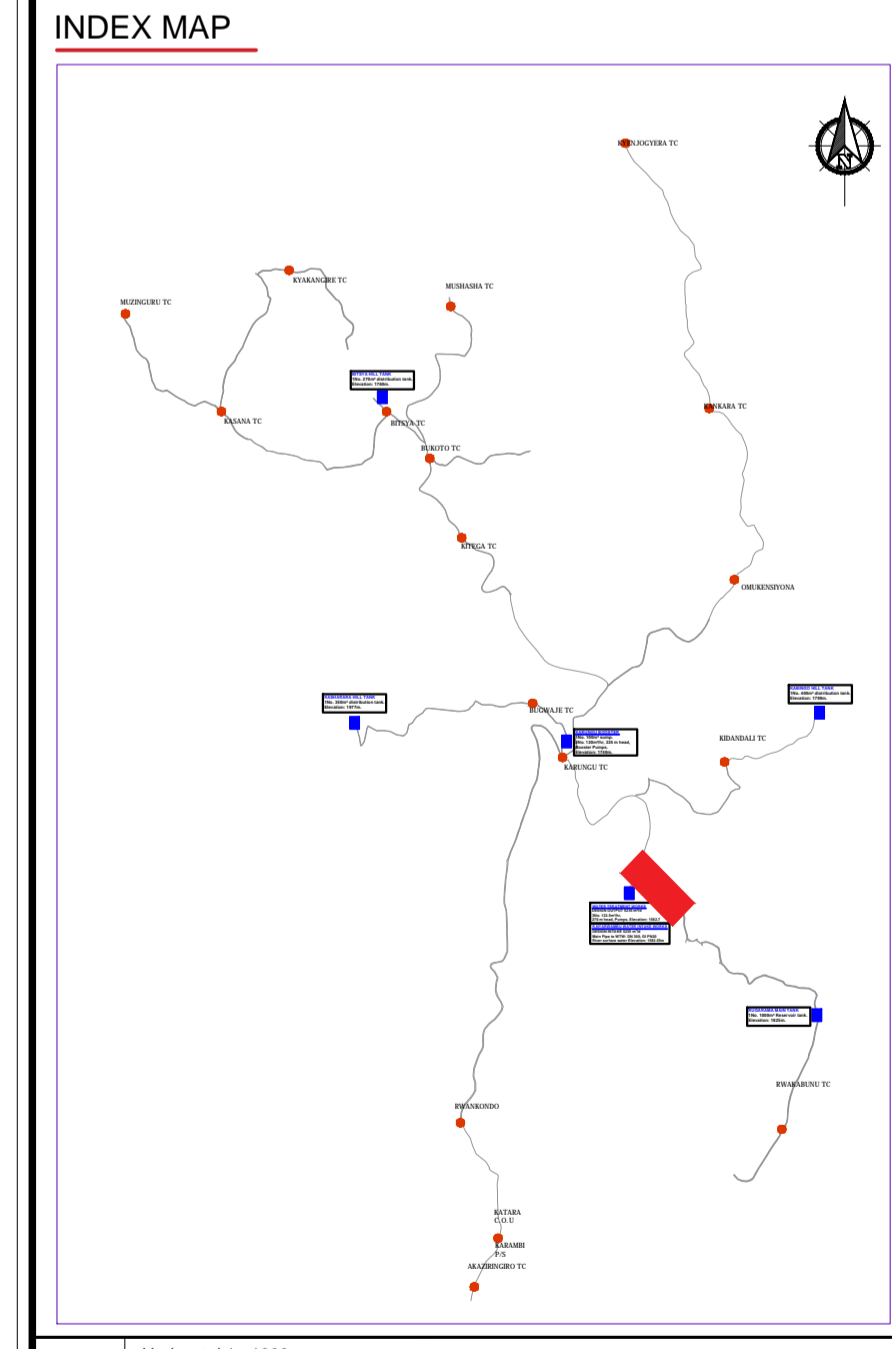
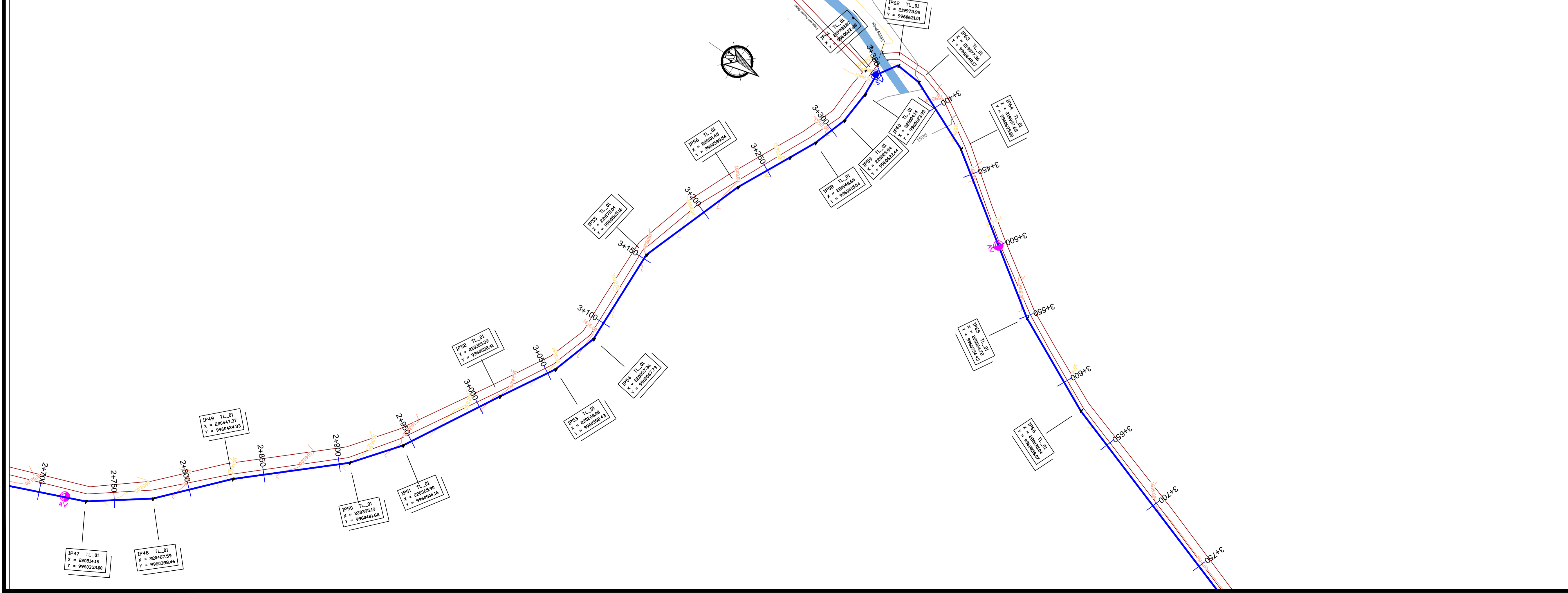


TRANSMISSION MAIN TL_01

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
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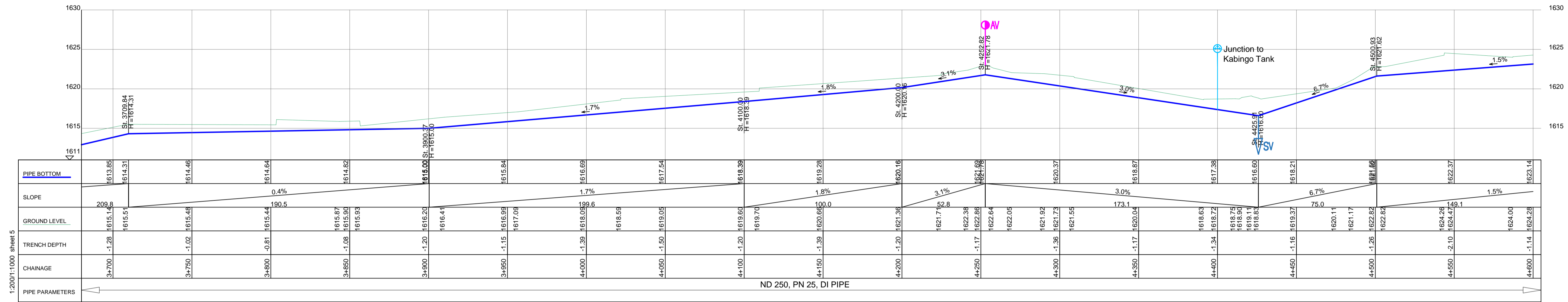
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
TRANSMISSION MAIN TL_01

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL01-04 | Date: SEPT 2021



TRANSMISSION MAIN TL_01

1:2000:1:000 sheet 5

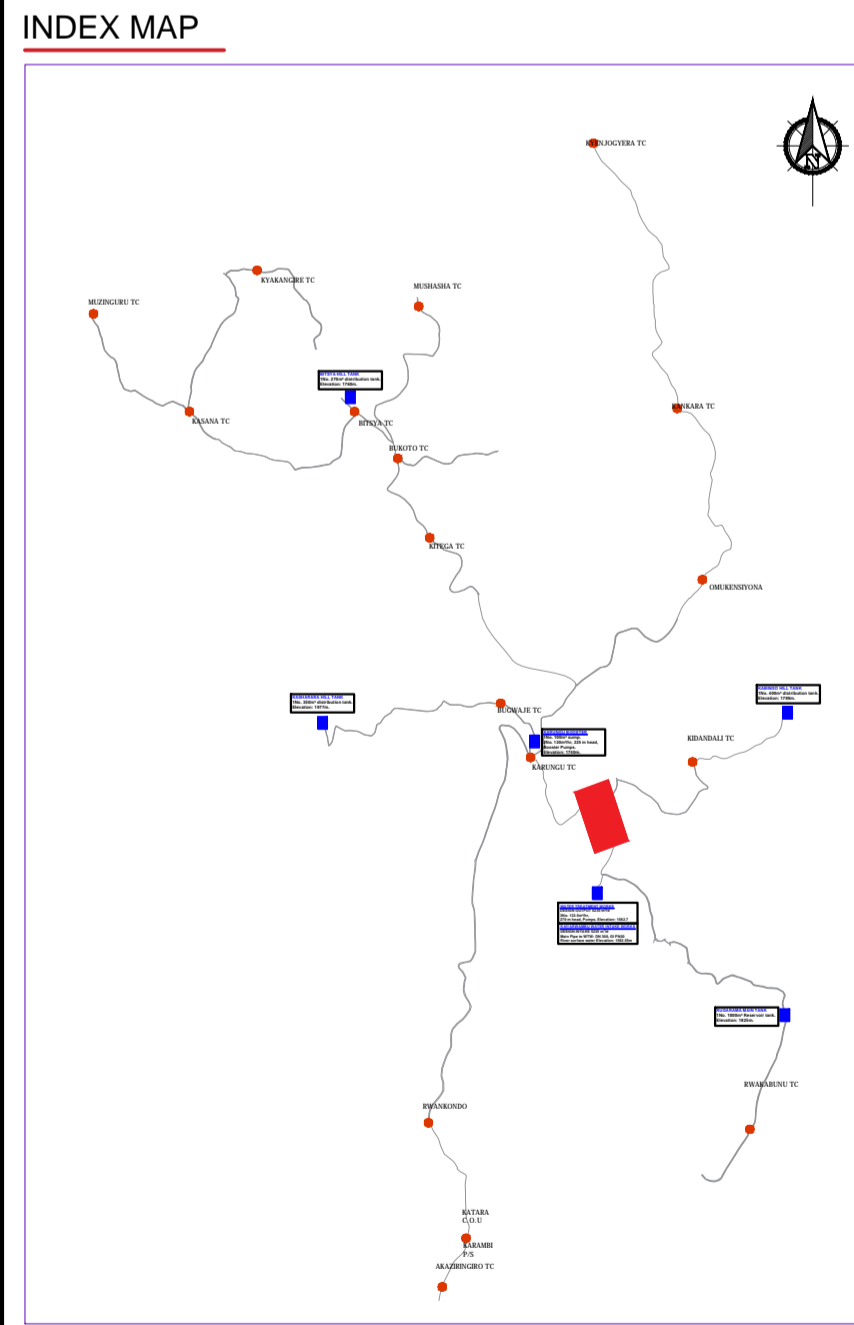
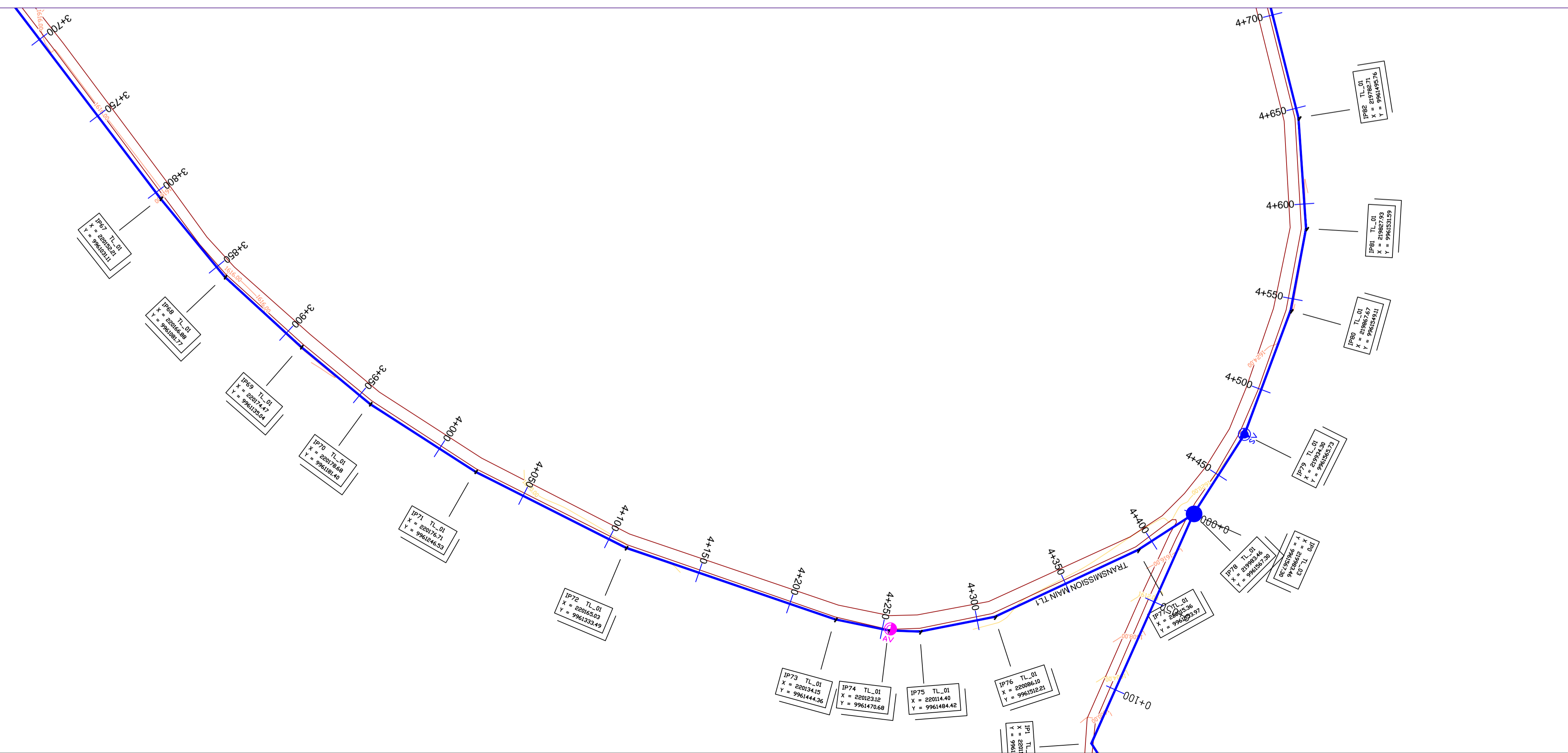
ND 250, PN 25, DI PIPE

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
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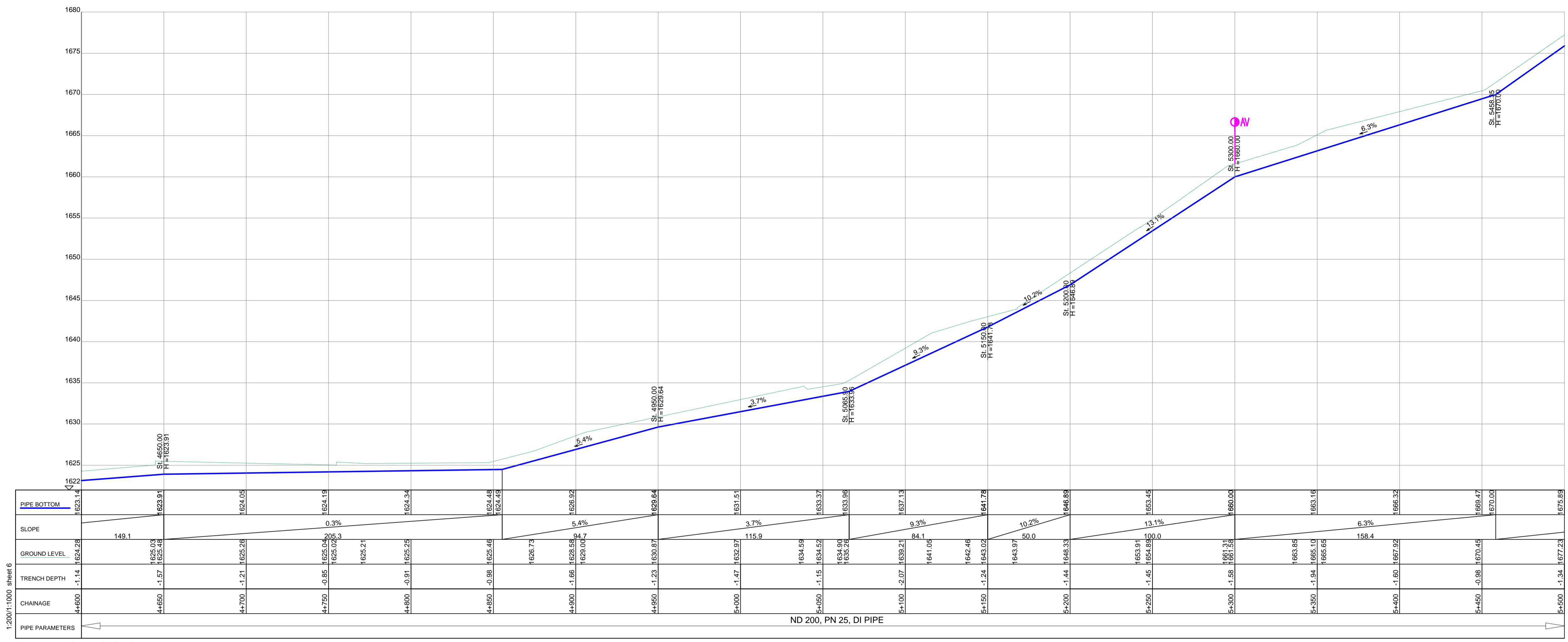
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

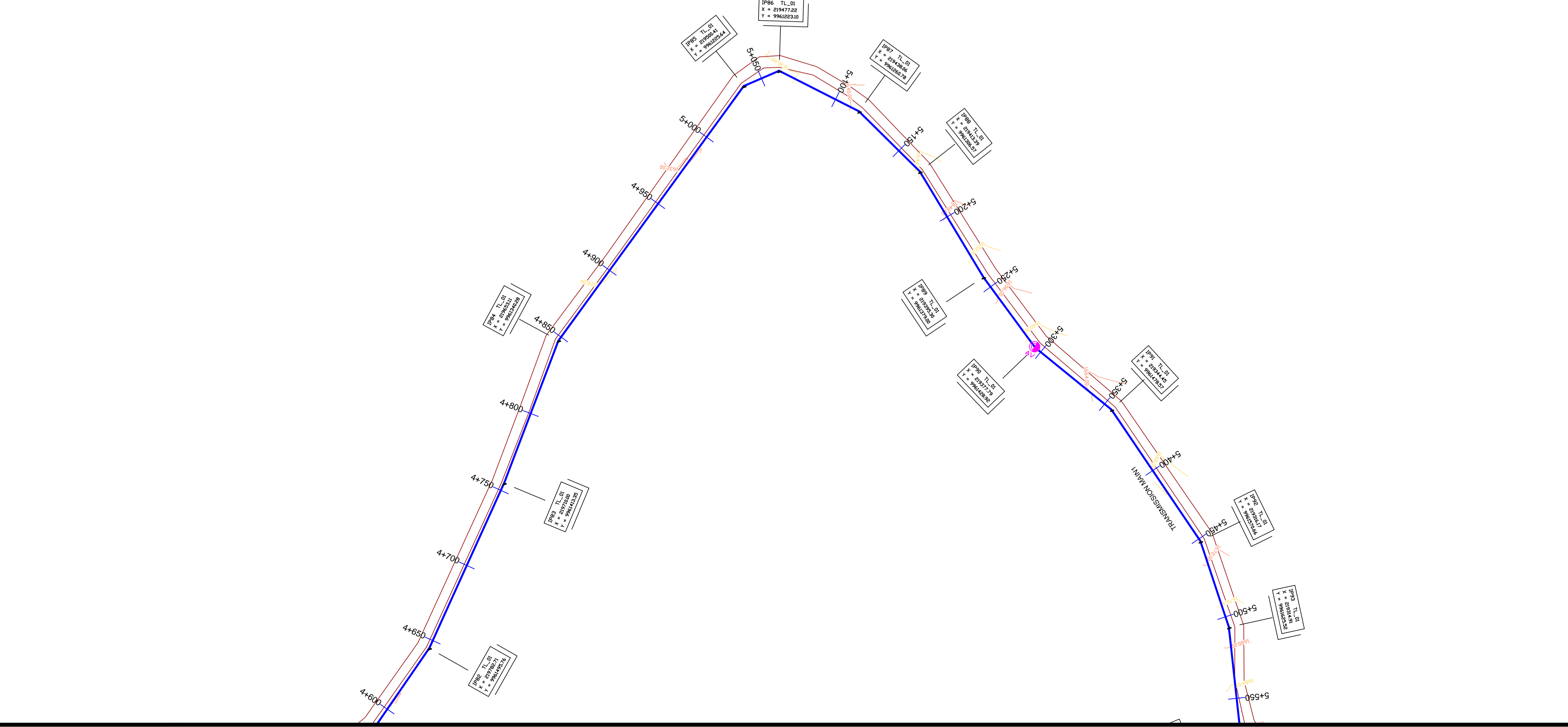
Title: **PLAN PROFILE OF PIPE LINE**
TRANSMISSION MAIN TL_01

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAAL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL01-05 Date: SEPT 2021



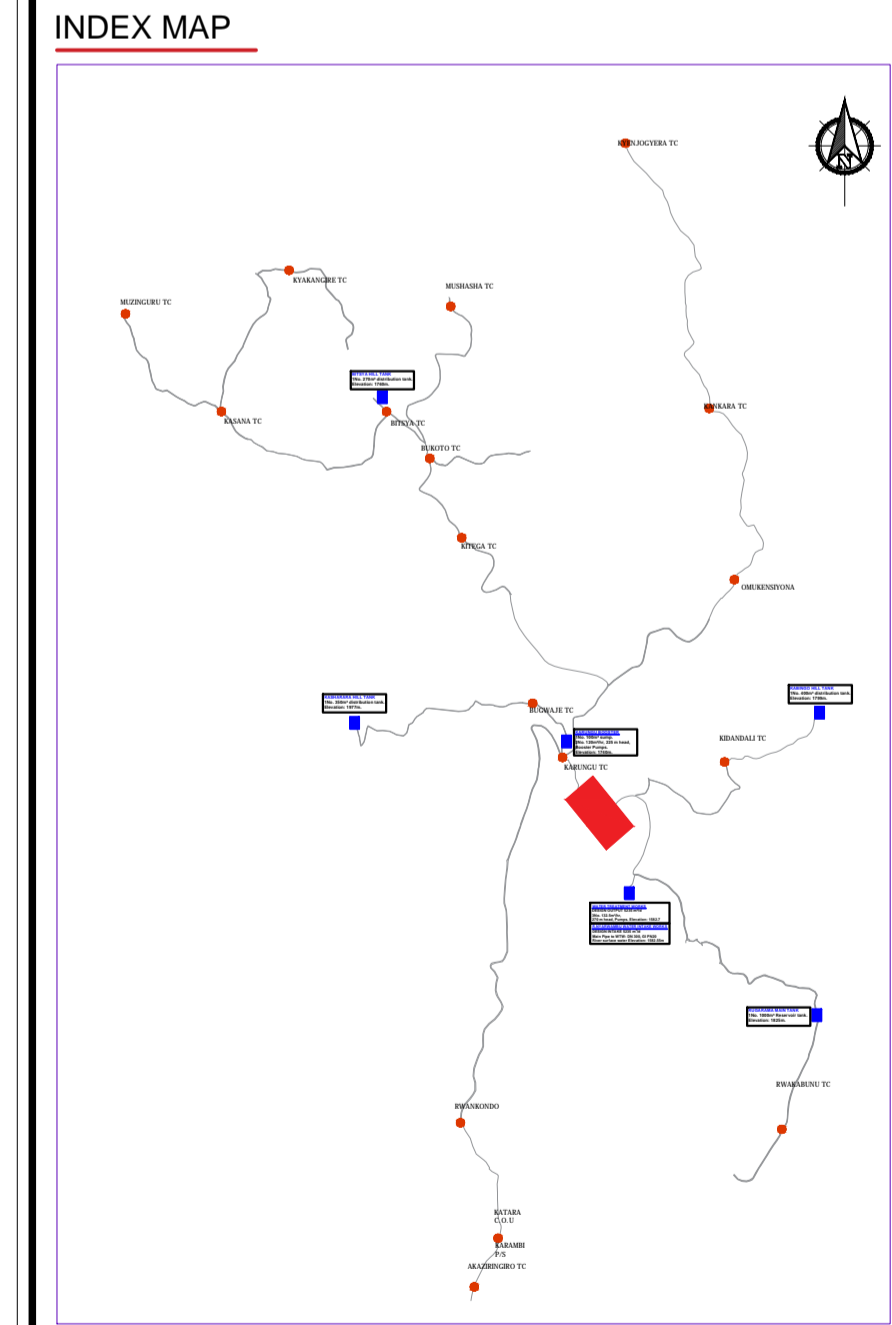
TRANSMISSION MAIN TL_01



LEGEND

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- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
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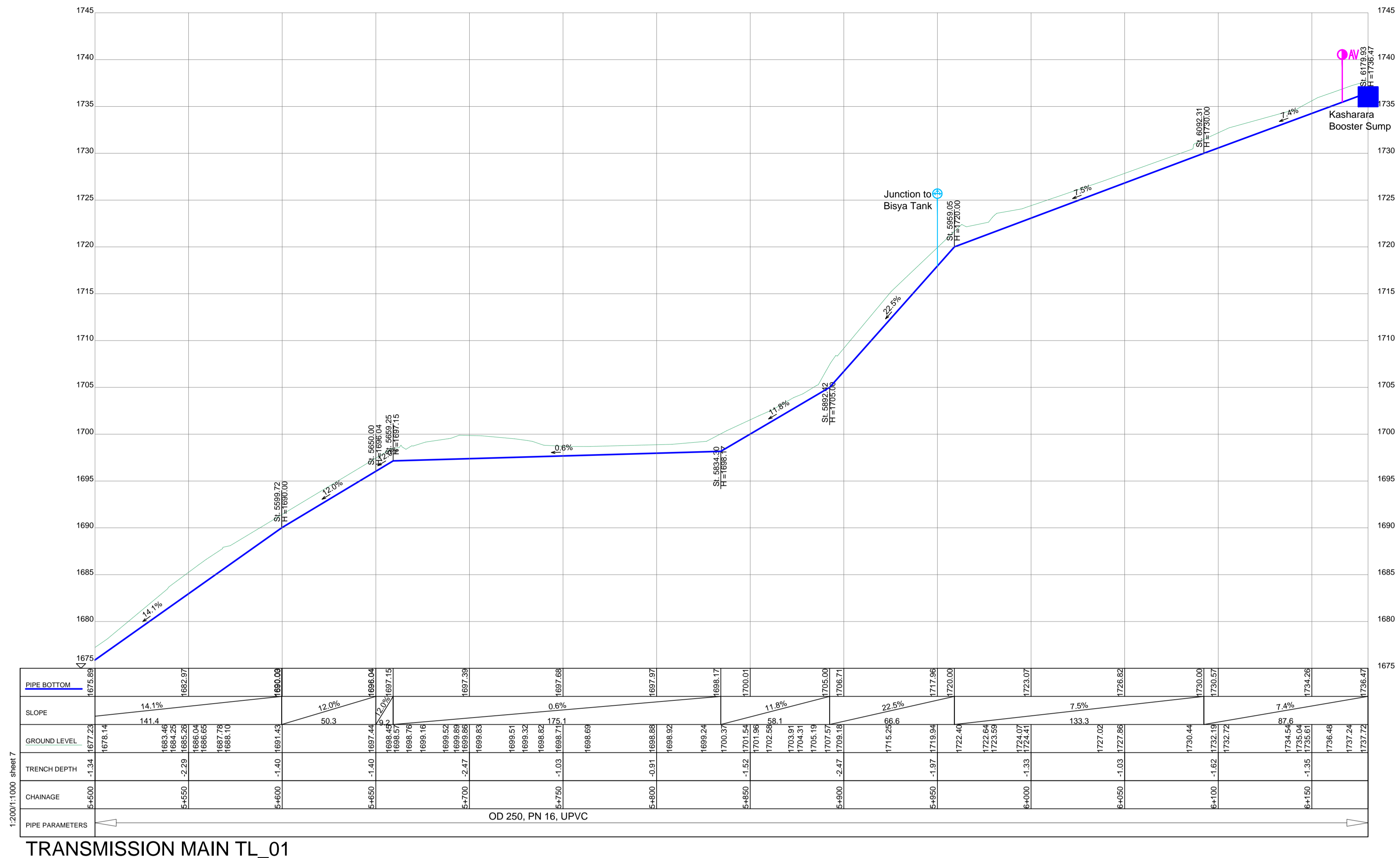
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
TRANSMISSION MAIN TL_01

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL01-06 Date: SEPT 2021

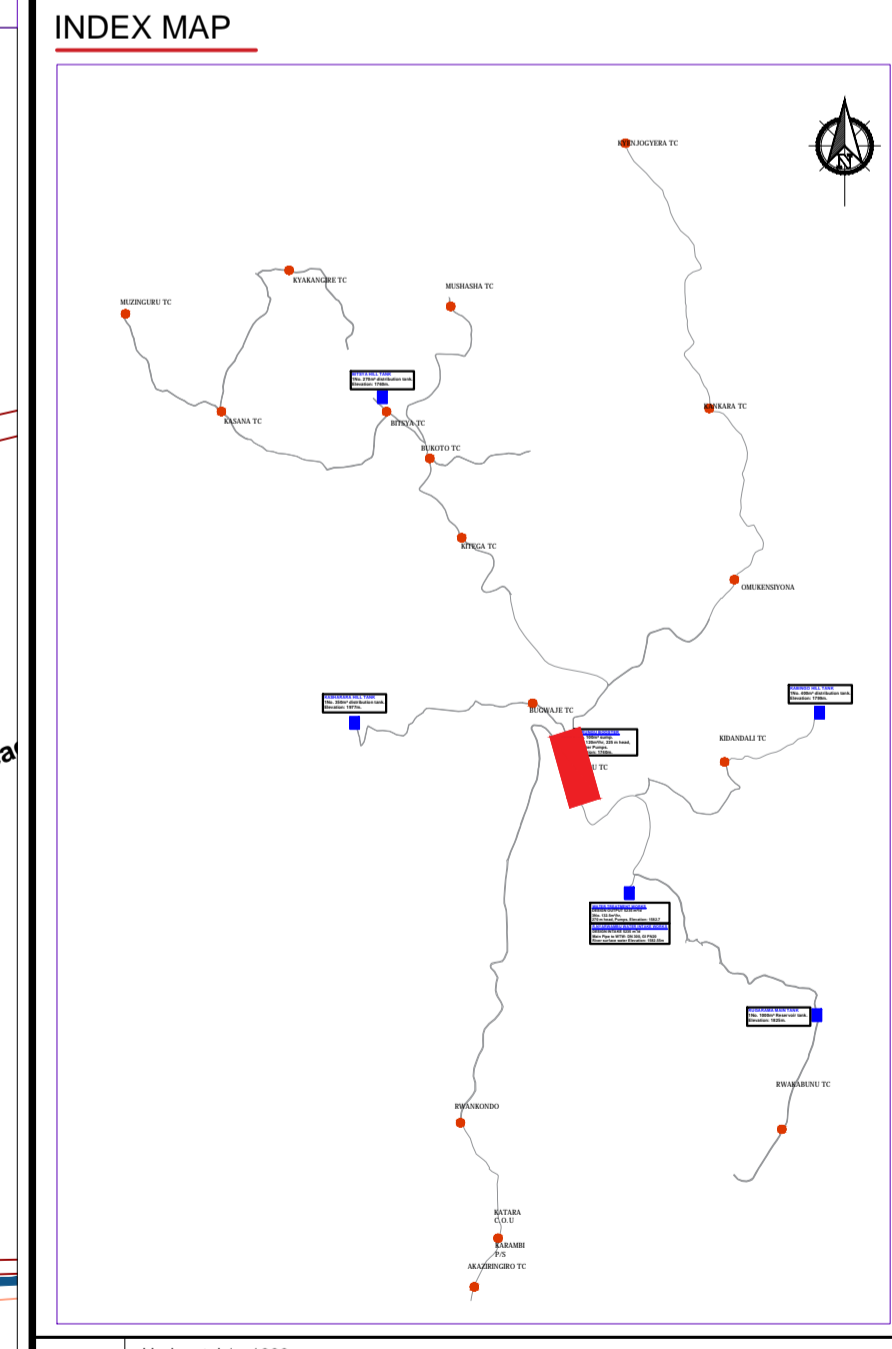
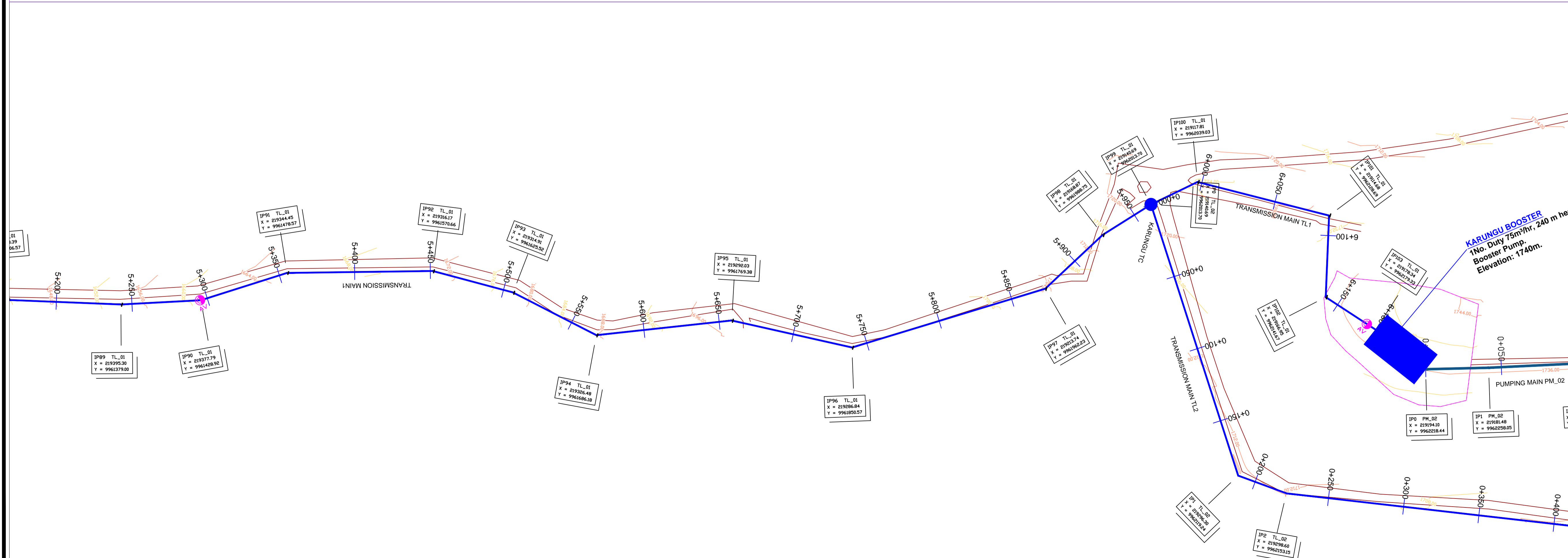


TRANSMISSION MAIN TL_01

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



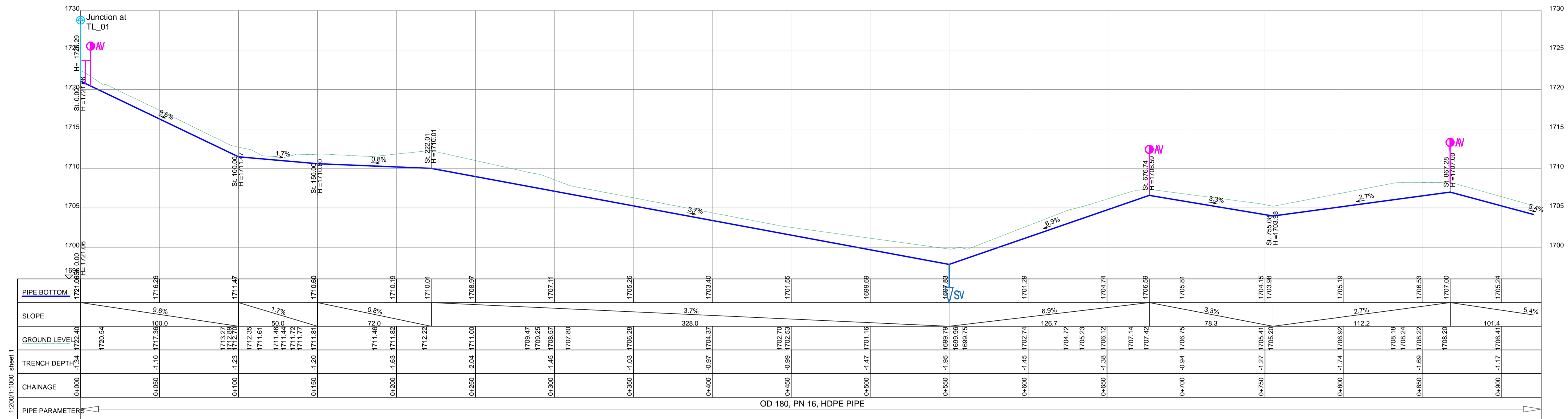
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_01**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAII CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL01-07 Date: SEPT 2021



TRANSMISSION MAIN TL_02

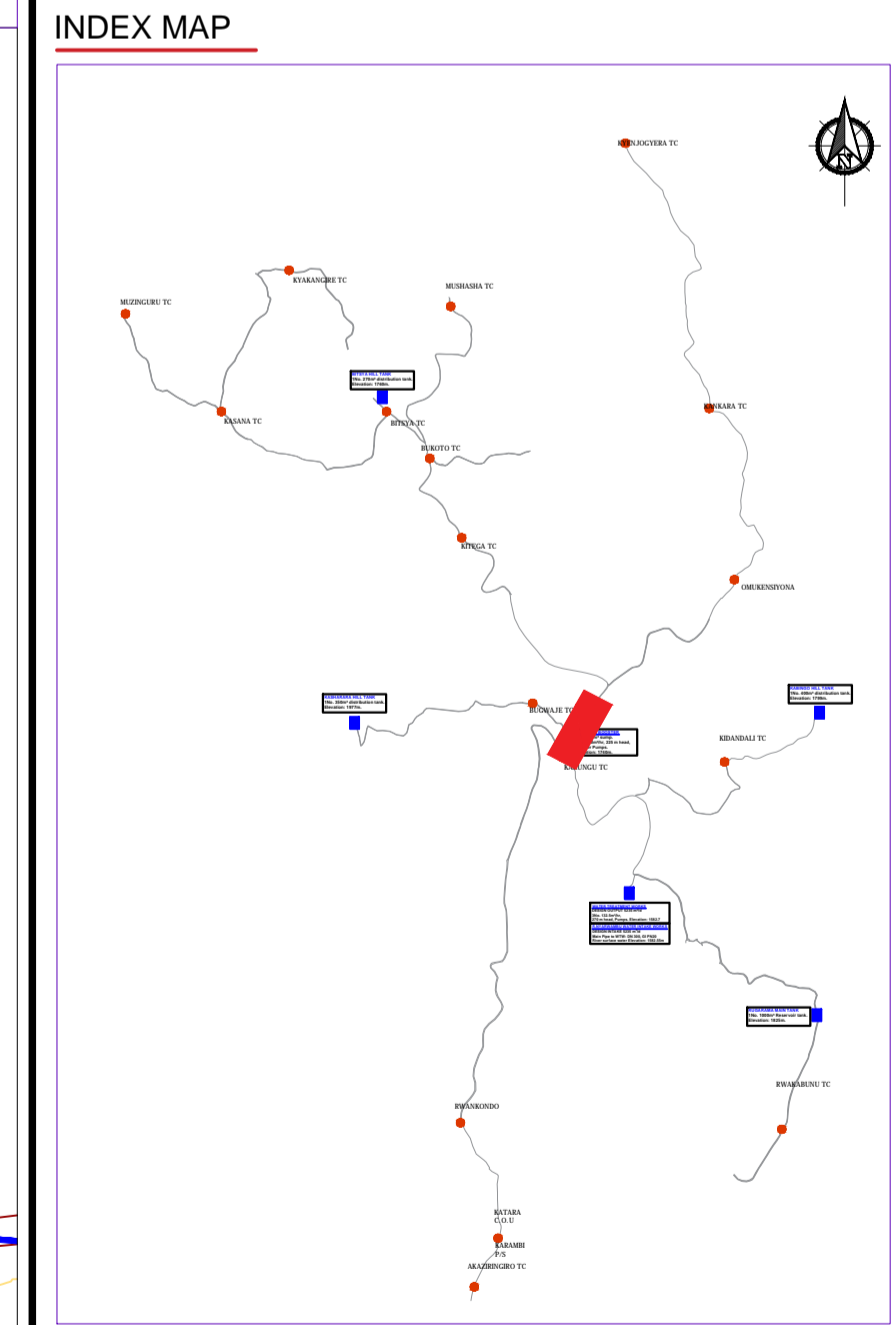
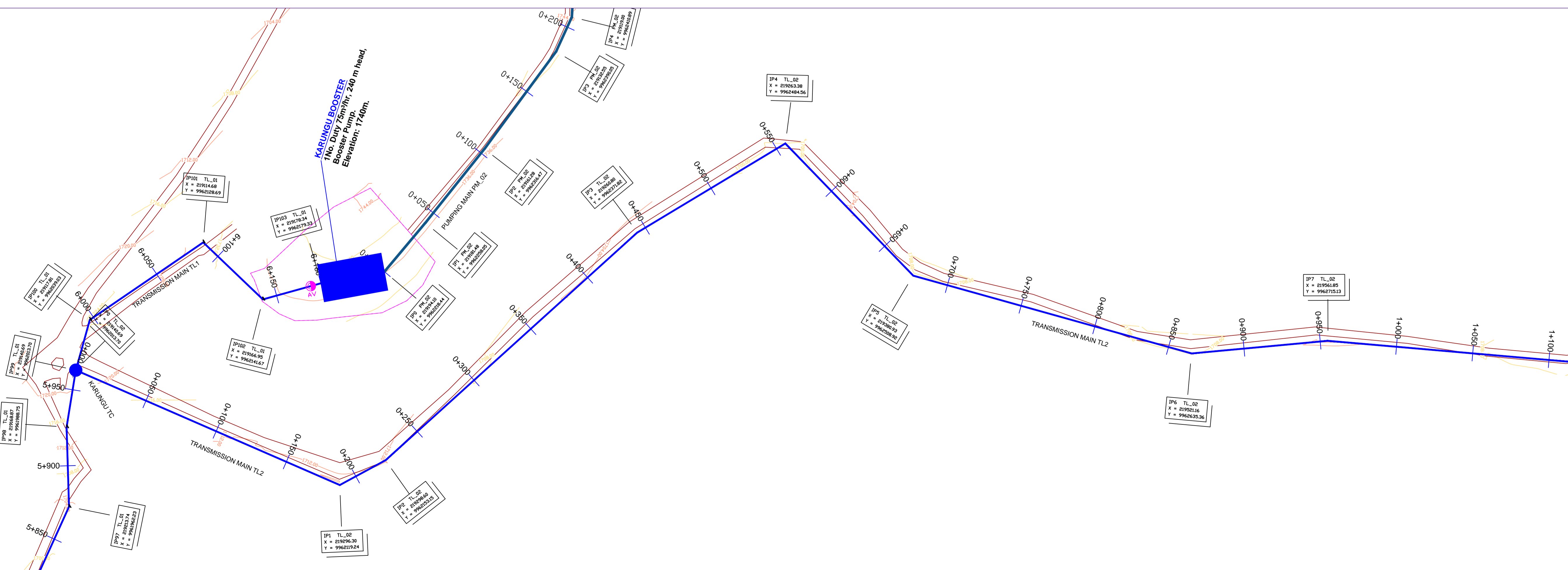
1:2000 1.000 sheet 1

OD 180, PN 16, HDPE PIPE

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
 - REFER TO AUXILIARY WORKS DRAWINGS FOR ANCHORAGE TO PIPELINES, AIR VALVES DETAILS, PIPE PEDESTALS, PULLEY SUPPORT, TRENCH DETAILS, VALVE CHAMBERS, WASHOUT CHAMBERS AND WATER METERS.
 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

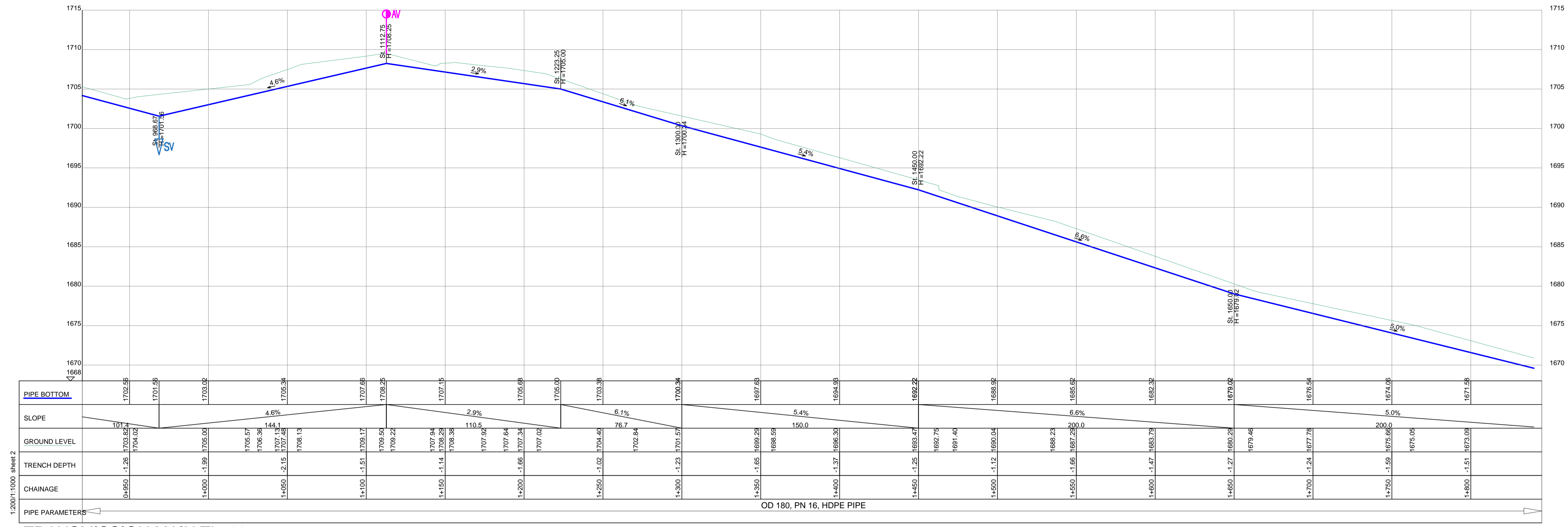
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAAL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279, TEL: 256 41 220208,
FAX: 256 41 220208, P.O. BOX 65852, KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/TL02-01 Date: SEPT 2021

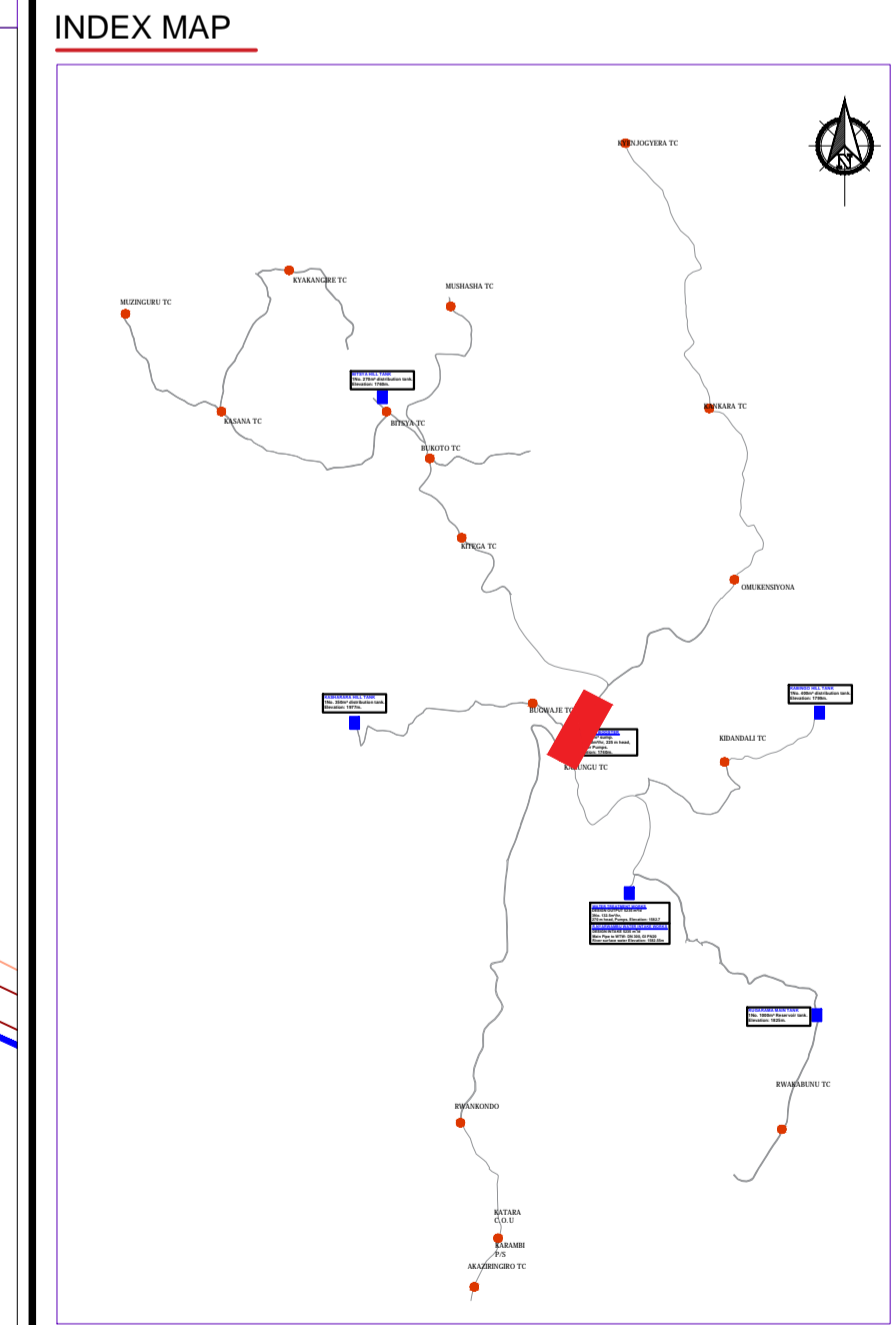


TRANSMISSION MAIN TL_02

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE (AV) On Profile View / On Plan View
- SCOUR VALVE (SV) On Profile View / On Plan View
- ISOLATION VALVE (IV) On Profile View / On Plan View
- ANTI-SURGE VALVE (ASV) On Profile View / On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
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Scale: Horizontal 1 : 1000
Vertical 1 : 100

Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

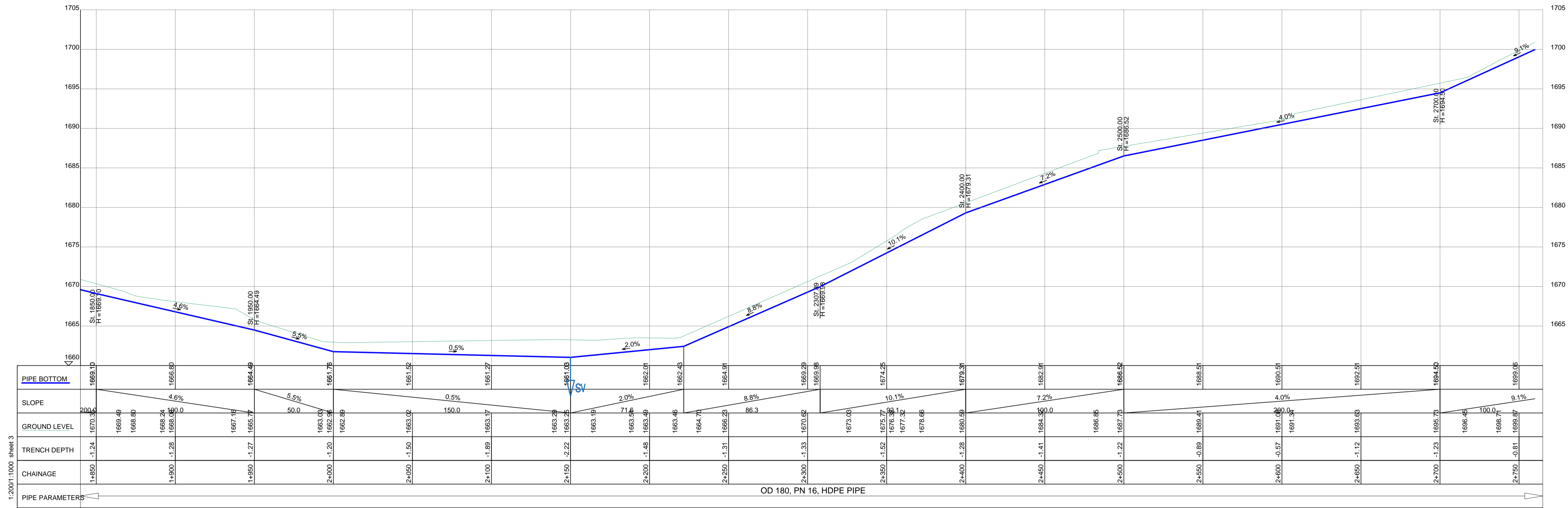
Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL02-02 Date: SEPT 2021

1:2000/1:1000 sheet 2



TRANSMISSION MAIN TL_02

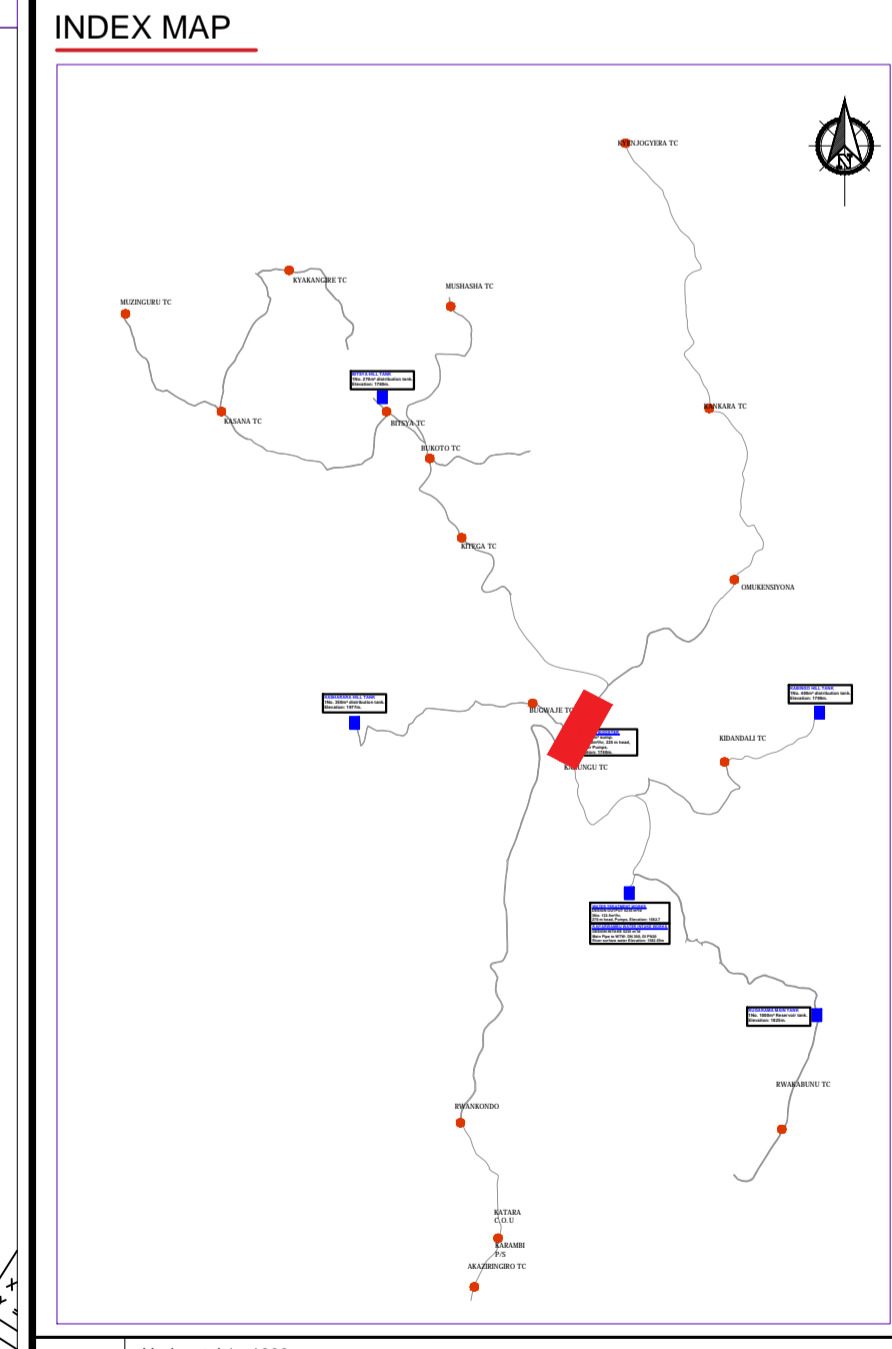
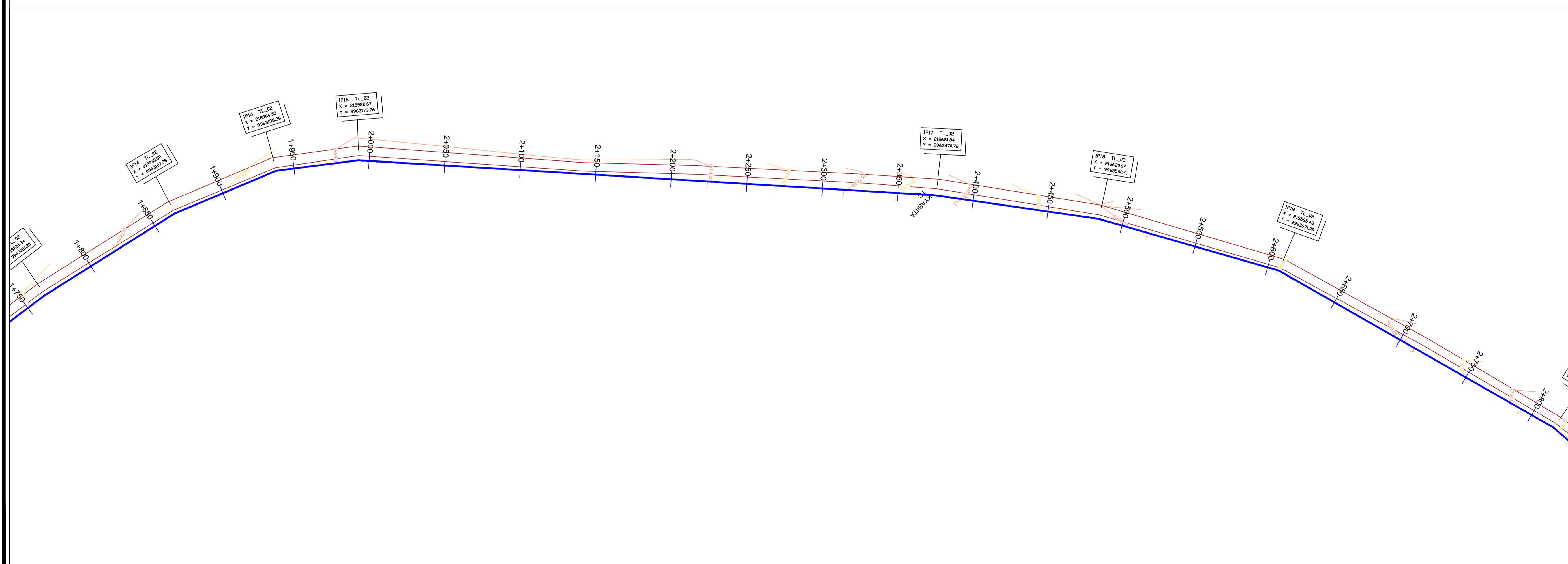
1:2000/1:1000 sheet 3

OD 180, PN 16, HDPE PIPE

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

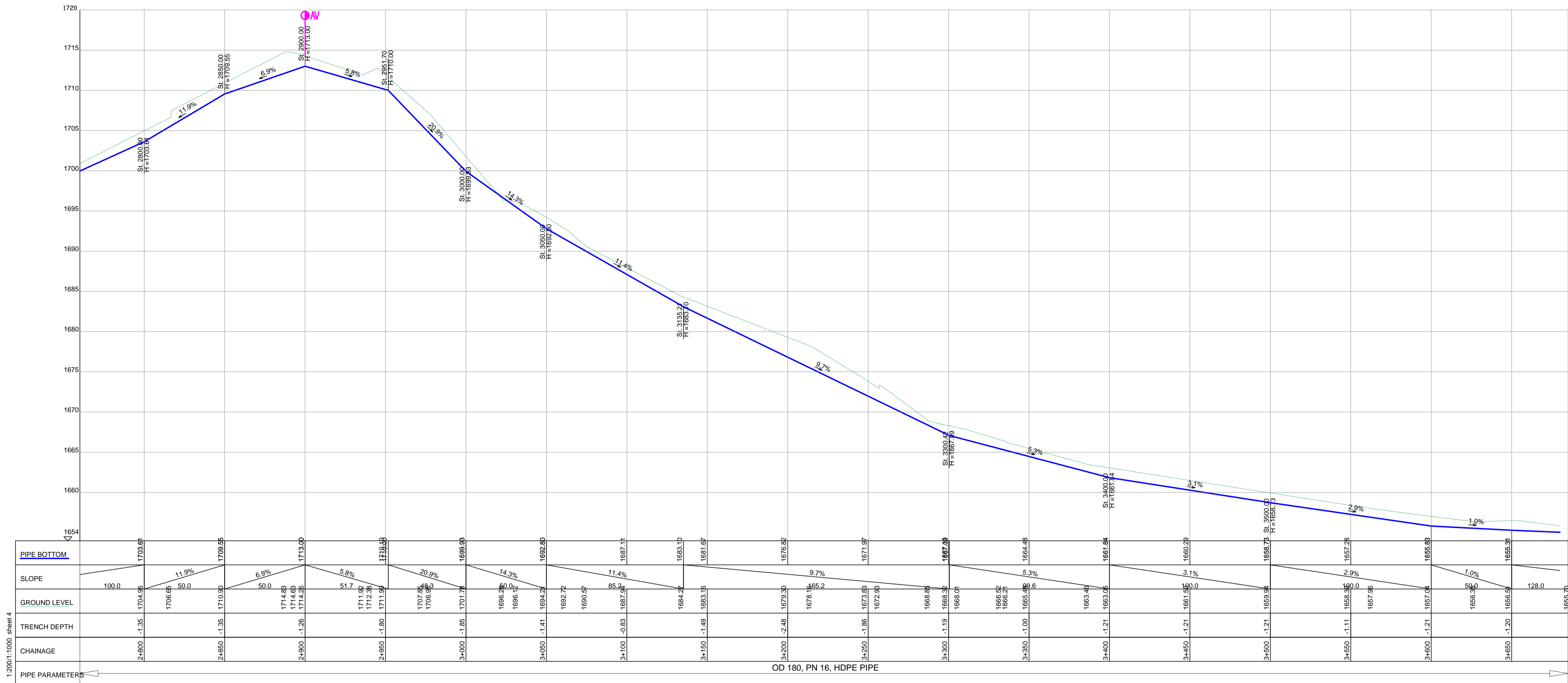
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAAL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL02-03 Date: SEPT 2021

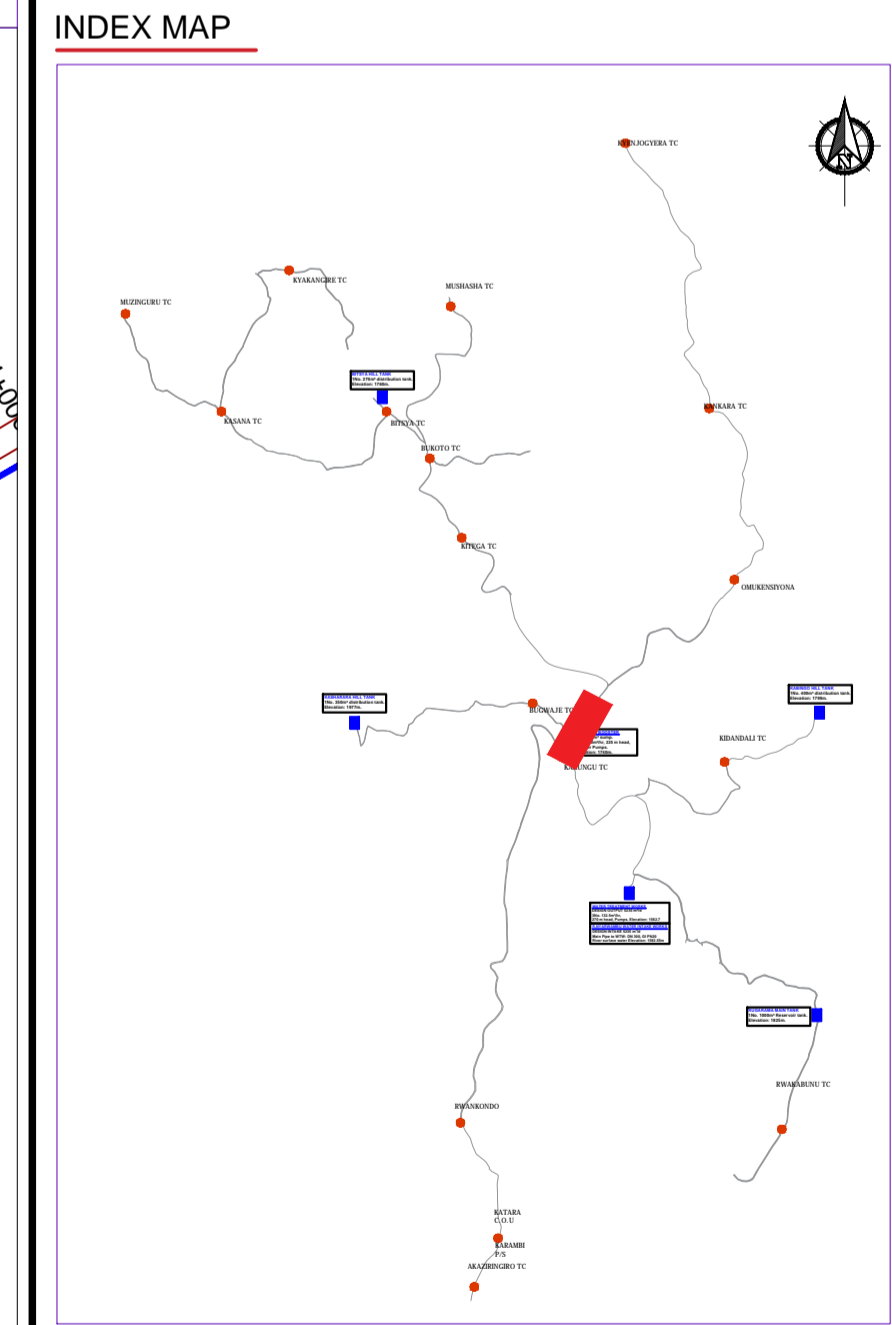
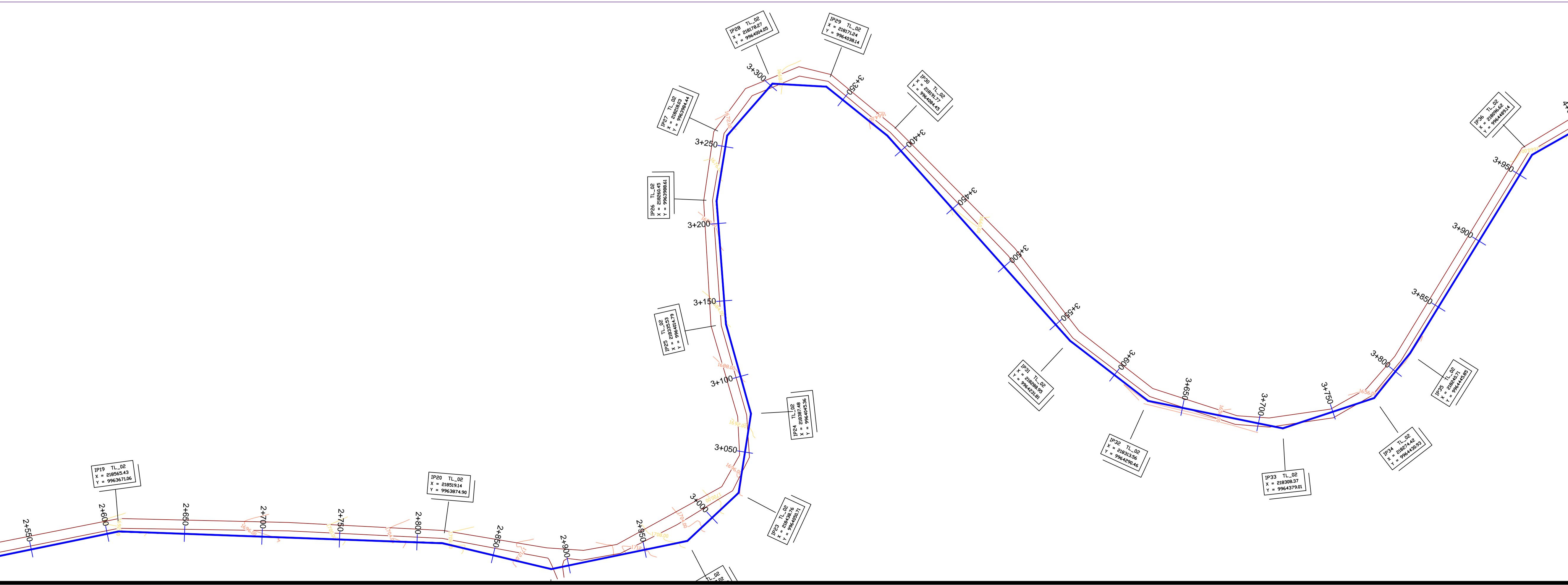


TRANSMISSION MAIN TL_02

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

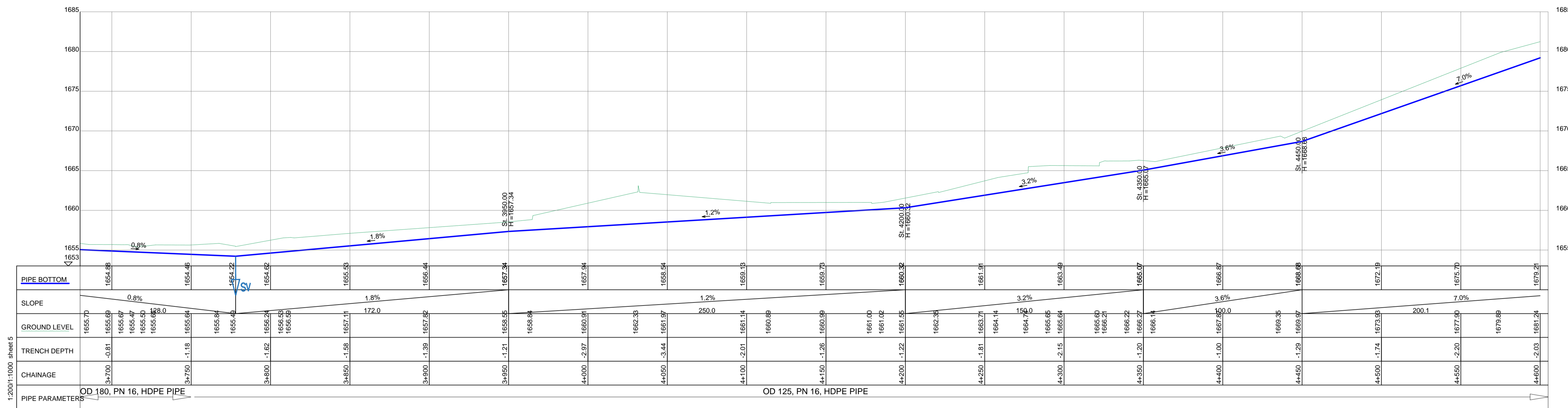
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

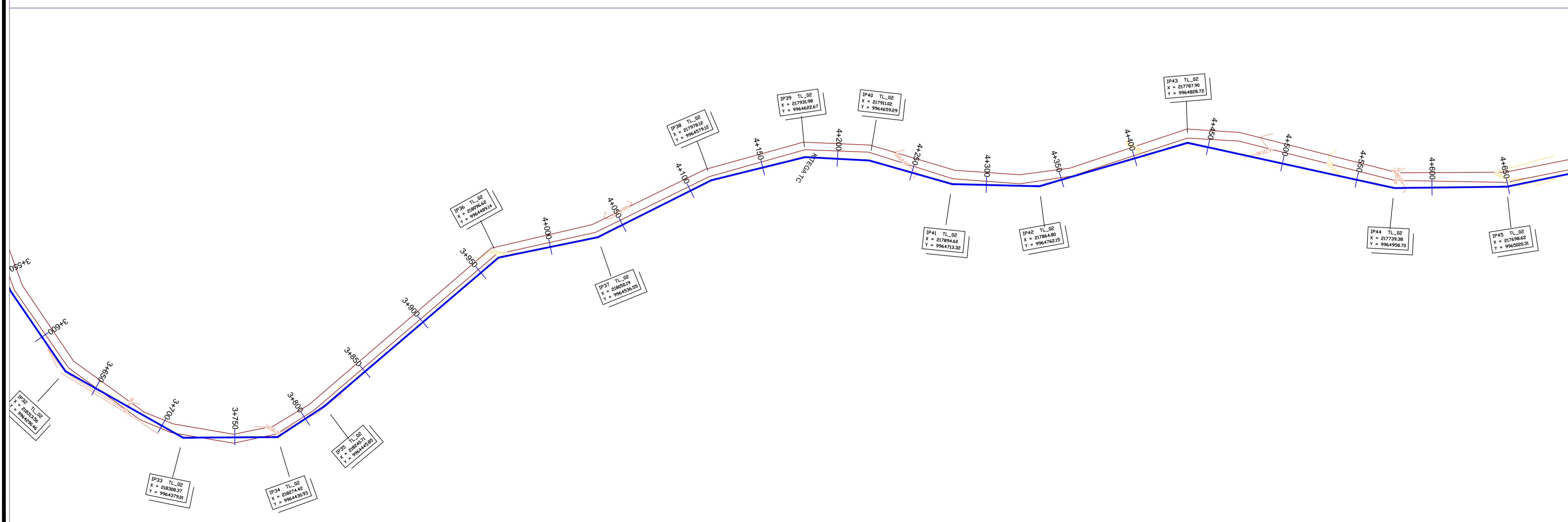
Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, RANDALL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL02-04 Date: /SEPT/2021



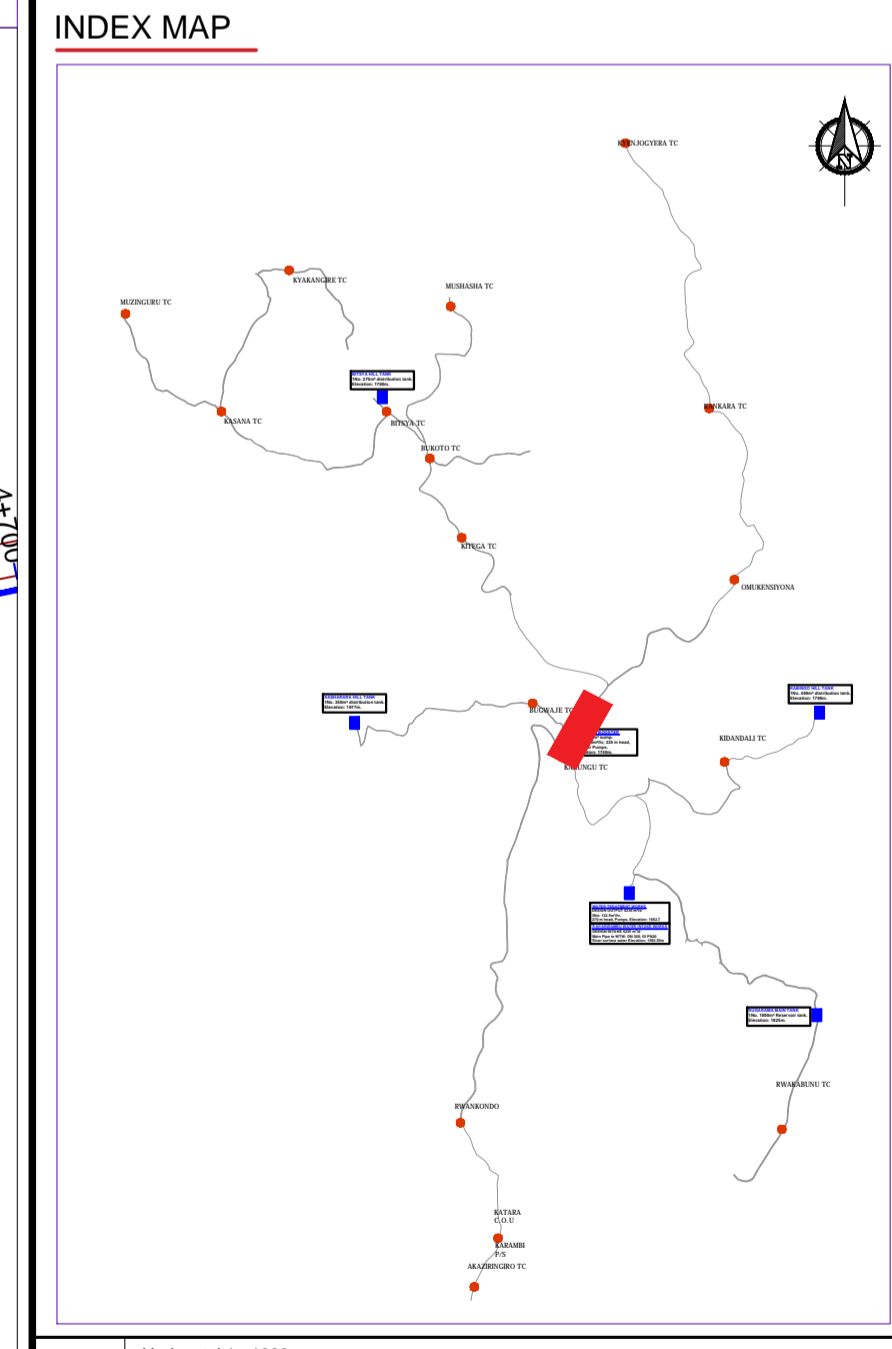
TRANSMISSION MAIN TL_02



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- ### NOTES
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

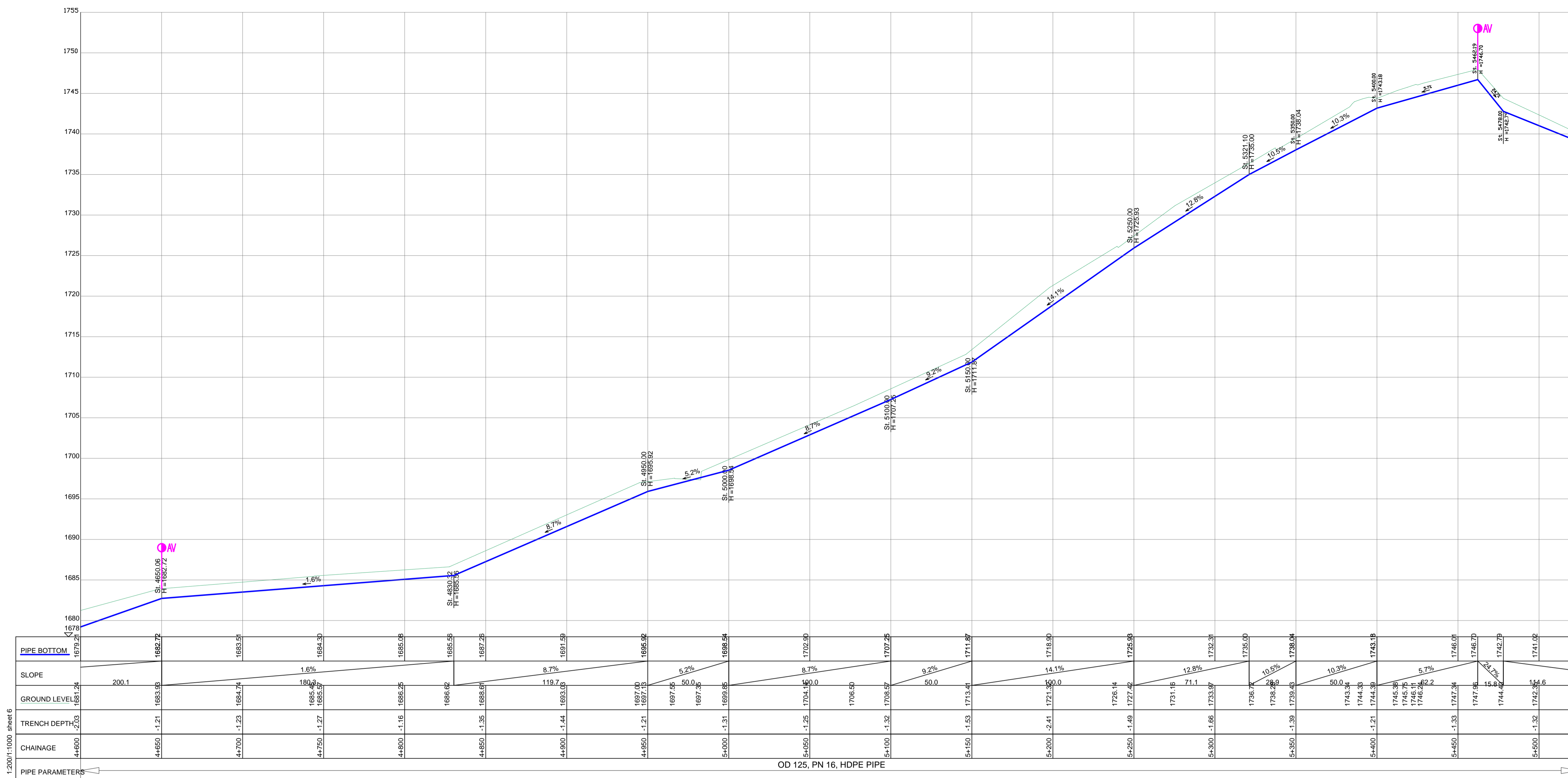
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

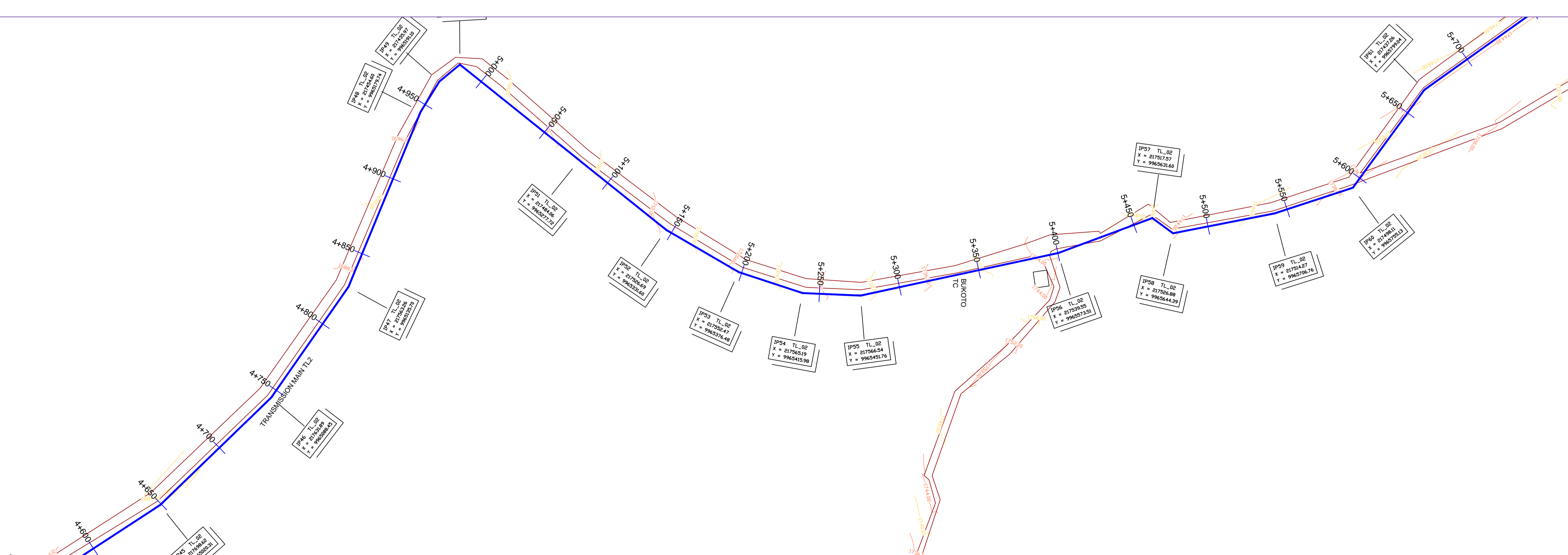
Title: **PLAN PROFILE OF PIPE LINE**
TRANSMISSION MAIN TL_02

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL02-05 Date: SEPT 2021



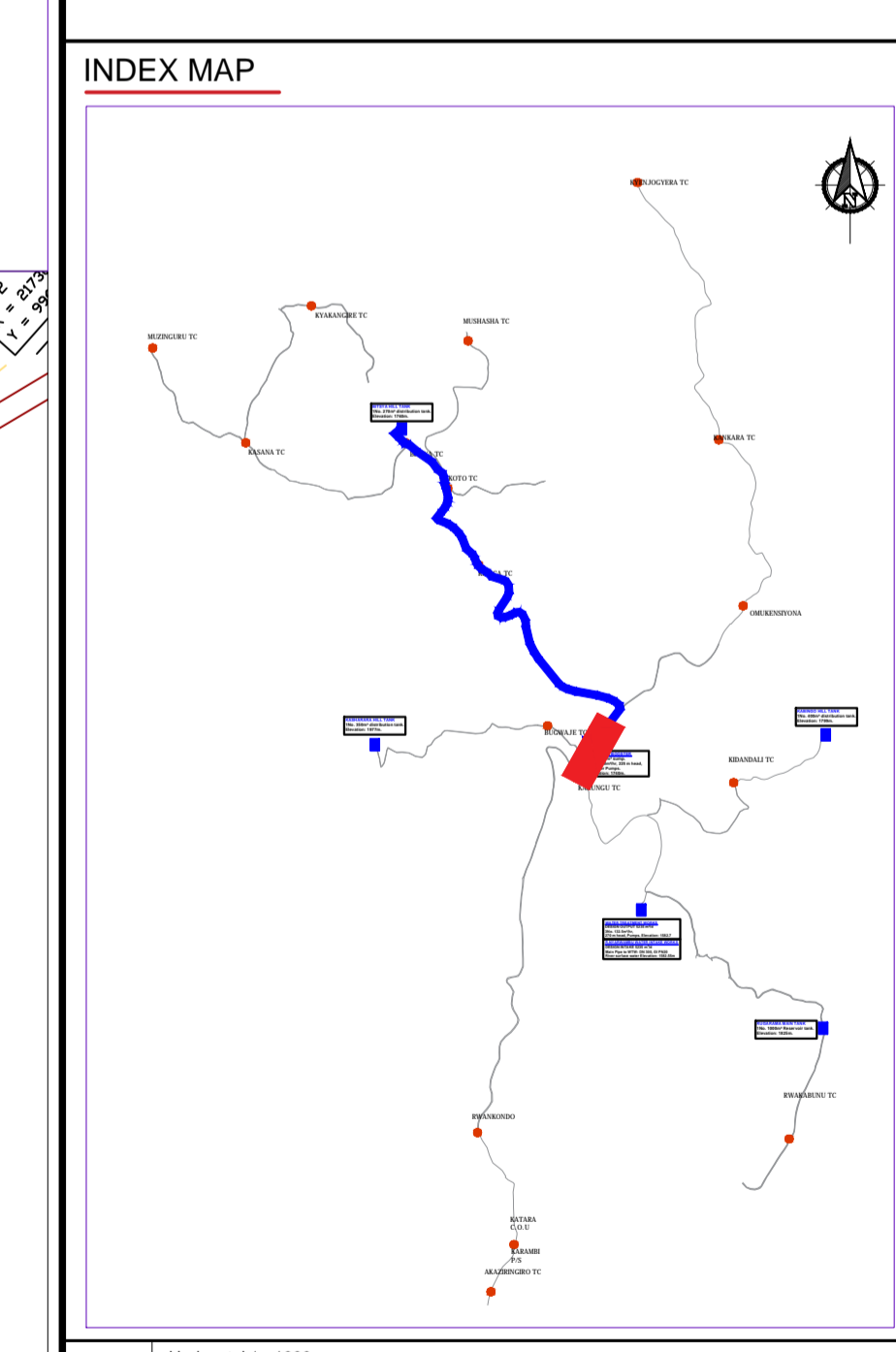
TRANSMISSION MAIN TL_02



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

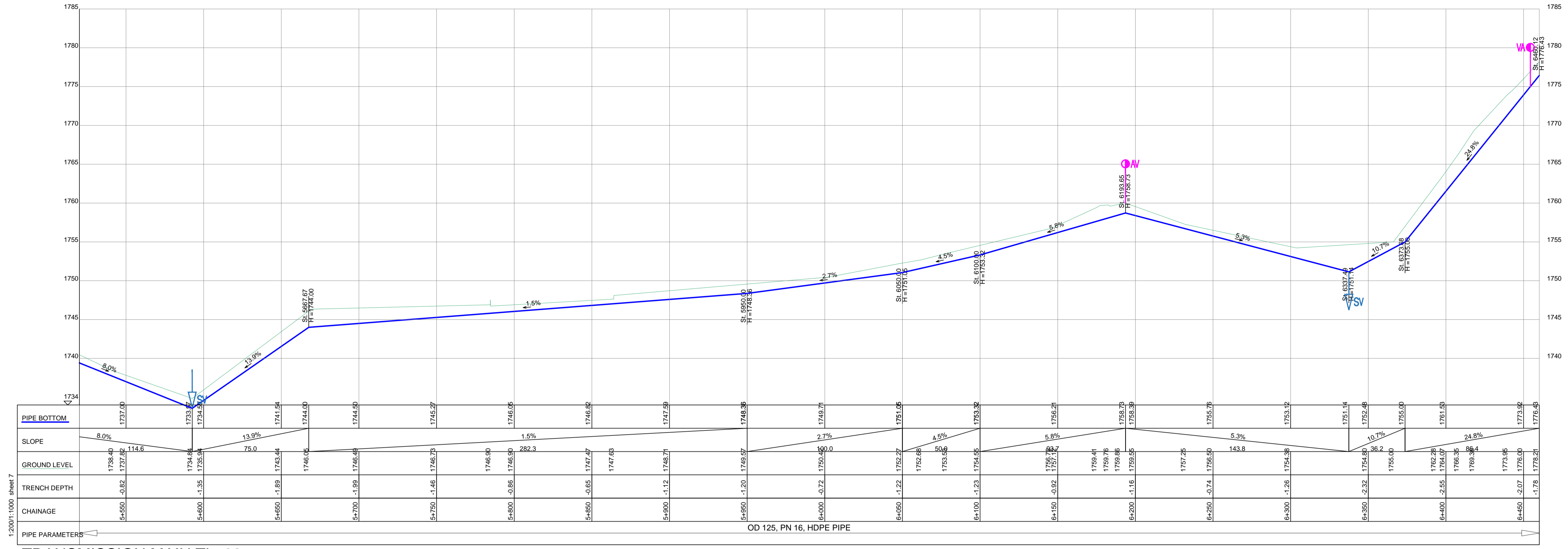
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL02-06 Date: SEPT 2021



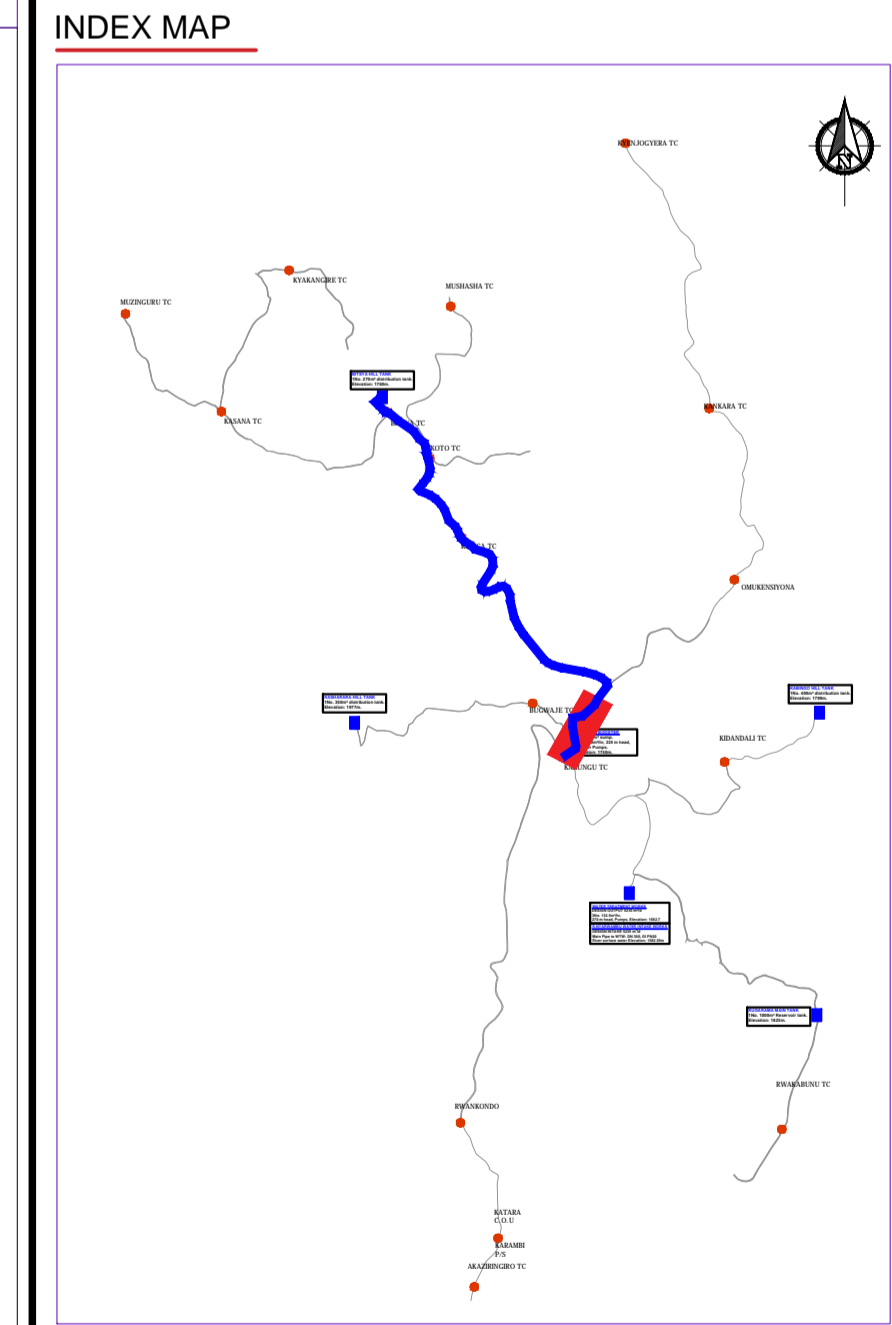
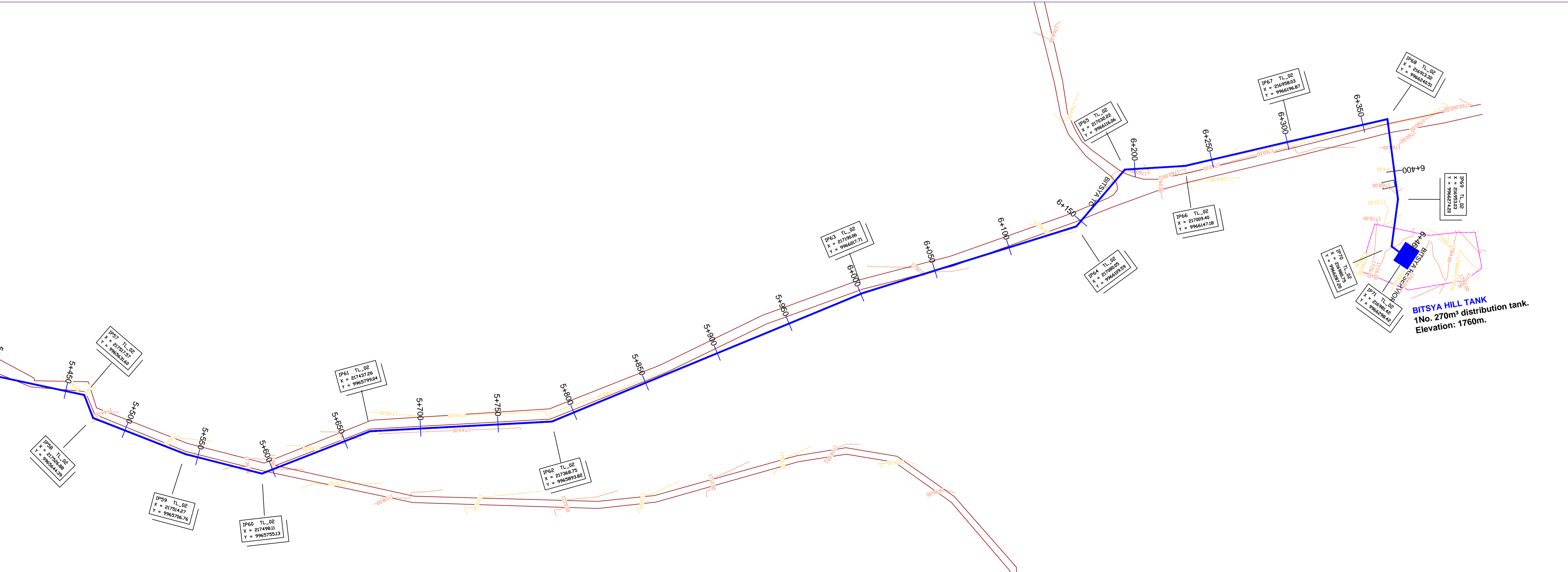
TRANSMISSION MAIN TL_02

1:2000:1:000 sheet 7

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- ⊗ JUNCTION LOCATIONS
- AV AIR VALVE On Profile View
- AV AIR VALVE On Plan View
- SV SCOUR VALVE On Profile View
- SV SCOUR VALVE On Plan View
- IV ISOLATION VALVE On Profile View
- IV ISOLATION VALVE On Plan View
- ASV ANTI-SURGE VALVE On Profile View
- ASV ANTI-SURGE VALVE On Plan View
- ⊕ PIPE T-JUNCTION On Profile View
- ⊕ PIPE CROSS-JUNCTION On Profile View

- NOTES**
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Scale: Horizontal 1 : 1000
Vertical 1 : 100

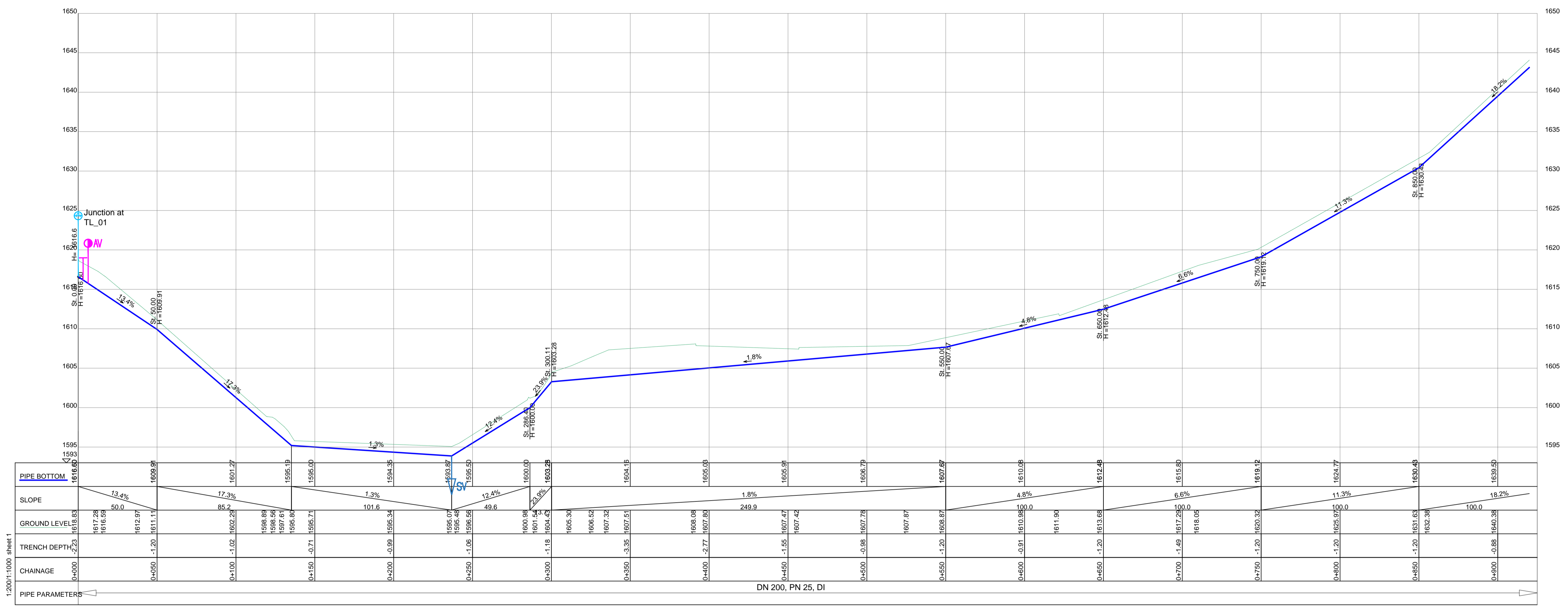
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/TL02-07 Date: SEPT 2021



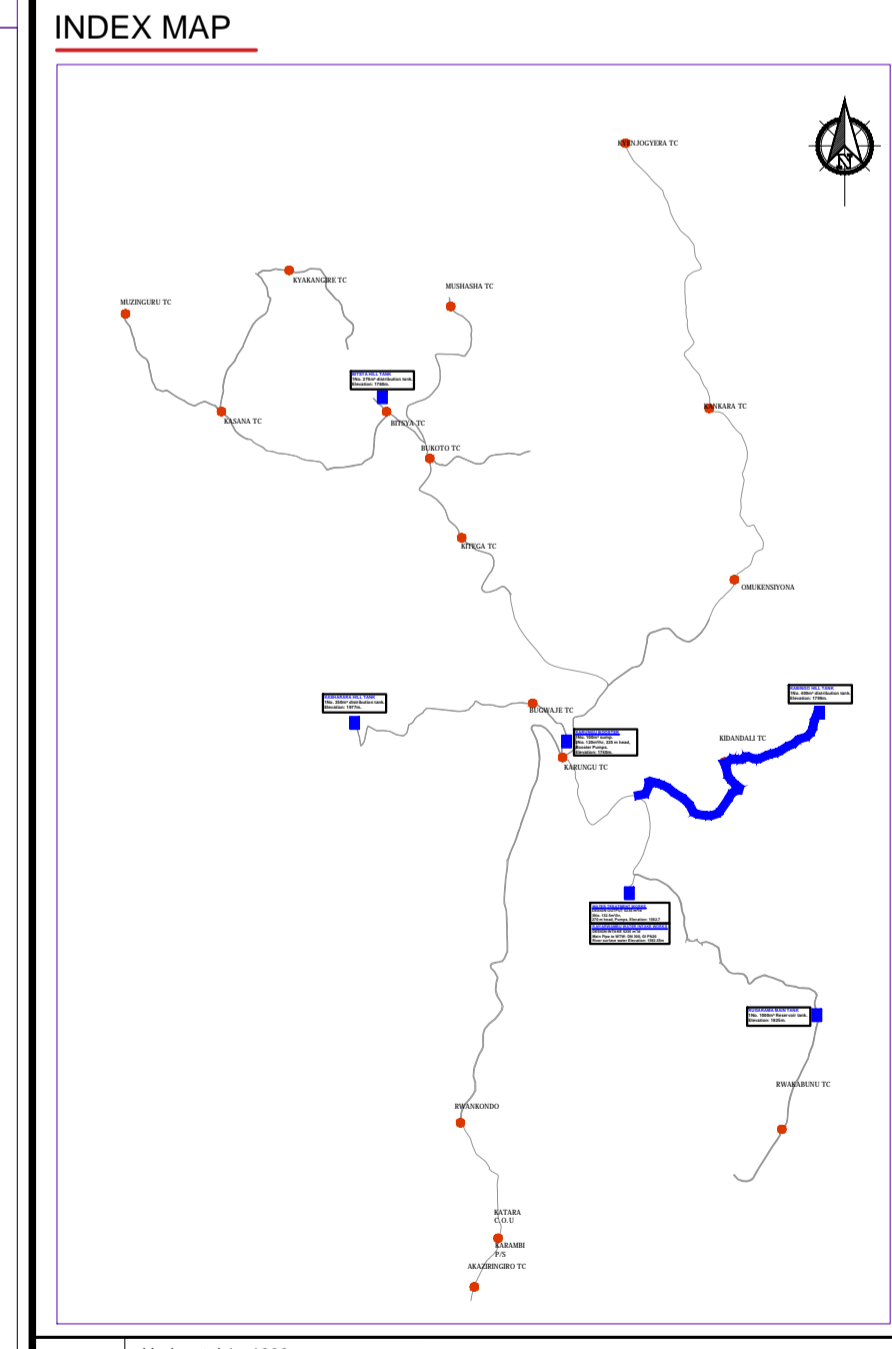
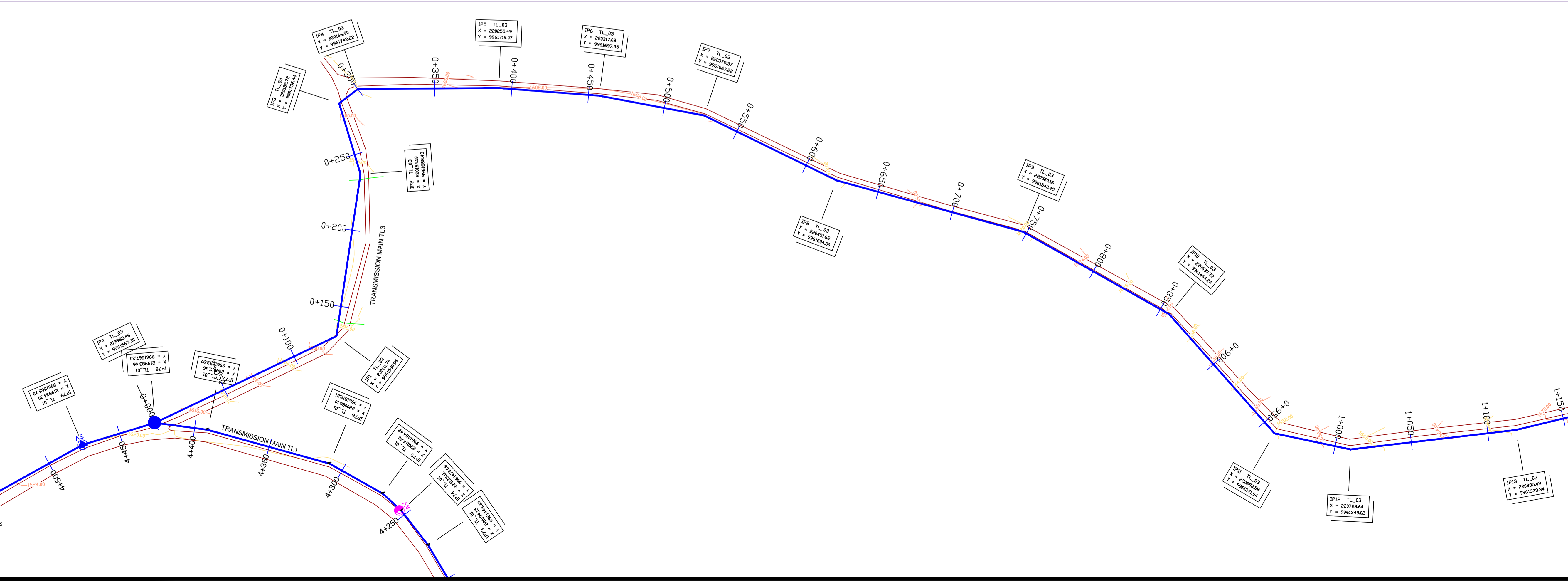
TRANSMISSION MAIN TL_03

1:200/1:1000 Sheet 1

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
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Scale: Horizontal 1:1000, Vertical 1:100

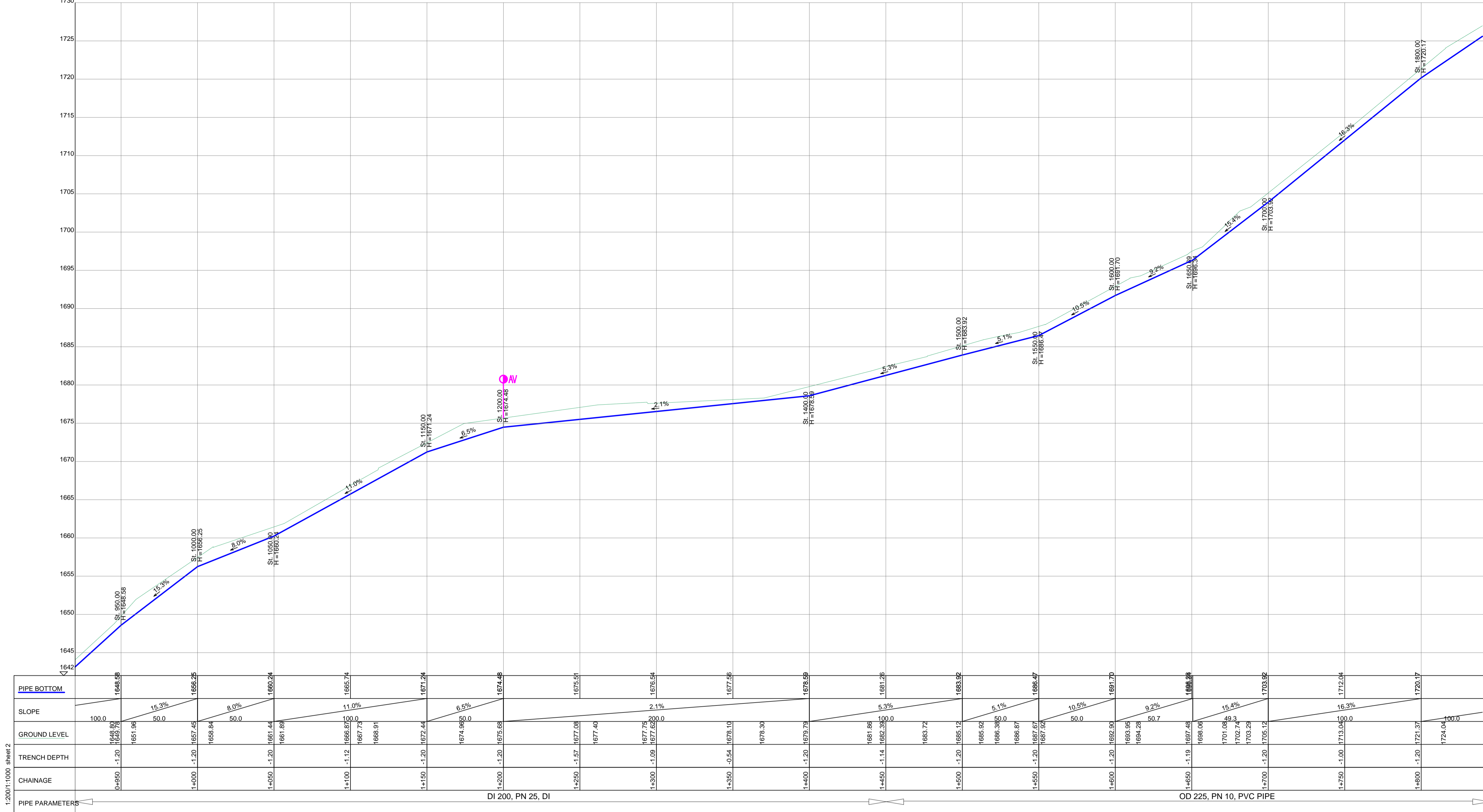
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_03**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279, FAX: 256 41 220208,
P.O. BOX 6585, KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL03-01 Date: SEPT 2021



PIPE BOTTOM	1648.59	1651.98	1657.45	1659.84	1661.44	1661.89	1666.87	1667.73	1668.91	1672.44	1674.48	1675.51	1677.54	1677.59	1681.28	1683.92	1686.47	1688.28	1693.95	1694.28	1696.08	1701.08	1702.94	1703.92	1712.04	1720.17	1724.04	1730.00
SLOPE	100.0	15.3%	8.0%	11.0%	6.5%	2.1%	5.3%	5.1%	10.5%	9.2%	15.4%	16.3%	100.0	13.6%														
GROUND LEVEL	1648.80	1651.98	1657.45	1659.84	1661.44	1661.89	1666.87	1667.73	1668.91	1672.44	1674.48	1675.51	1677.54	1677.59	1681.28	1683.92	1686.47	1688.28	1693.95	1694.28	1696.08	1701.08	1702.94	1703.92	1712.04	1720.17	1724.04	1730.00
TRENCH DEPTH	-1.20	-1.20	-1.20	-1.20	-1.20	-1.12	-1.12	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.14	-1.20	-1.19	-1.19	-1.20	-1.20	-1.19	-1.19	-1.19	-1.19	-1.19	-1.19	-1.19	-1.19
CHAINAGE	0+950	1+000	1+050	1+100	1+150	1+200	1+250	1+300	1+350	1+400	1+450	1+500	1+550	1+600	1+650	1+700	1+750	1+800	1+850	1+900	1+950	1+1000	1+1050	1+1100	1+1150	1+1200	1+1250	1+1300

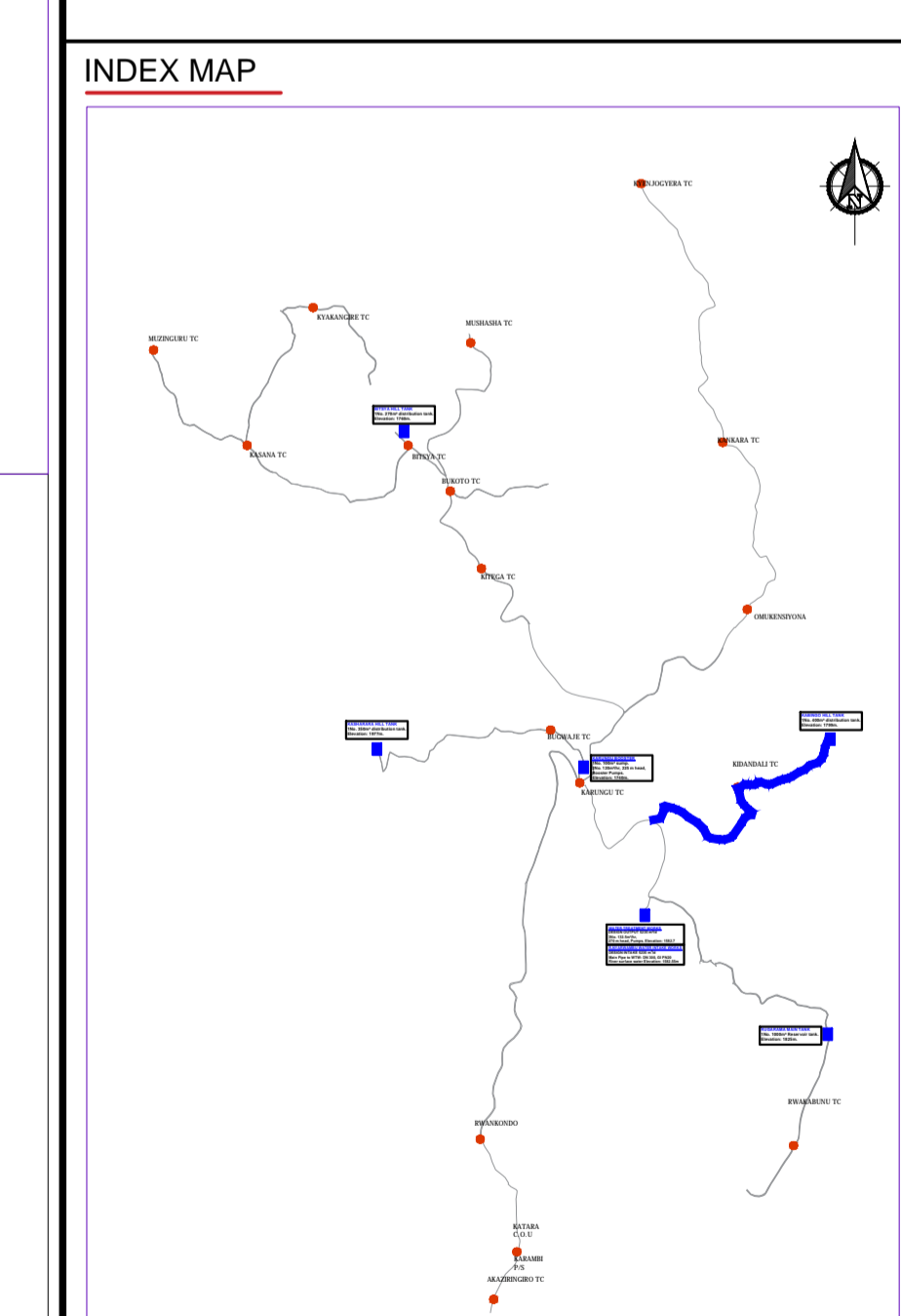
PIPE PARAMETERS: DI 200, PN 25, DI (Chainage 0+950 to 1+450); OD 225, PN 10, PVC PIPE (Chainage 1+450 to 1+800)

TRANSMISSION MAIN TL_03

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

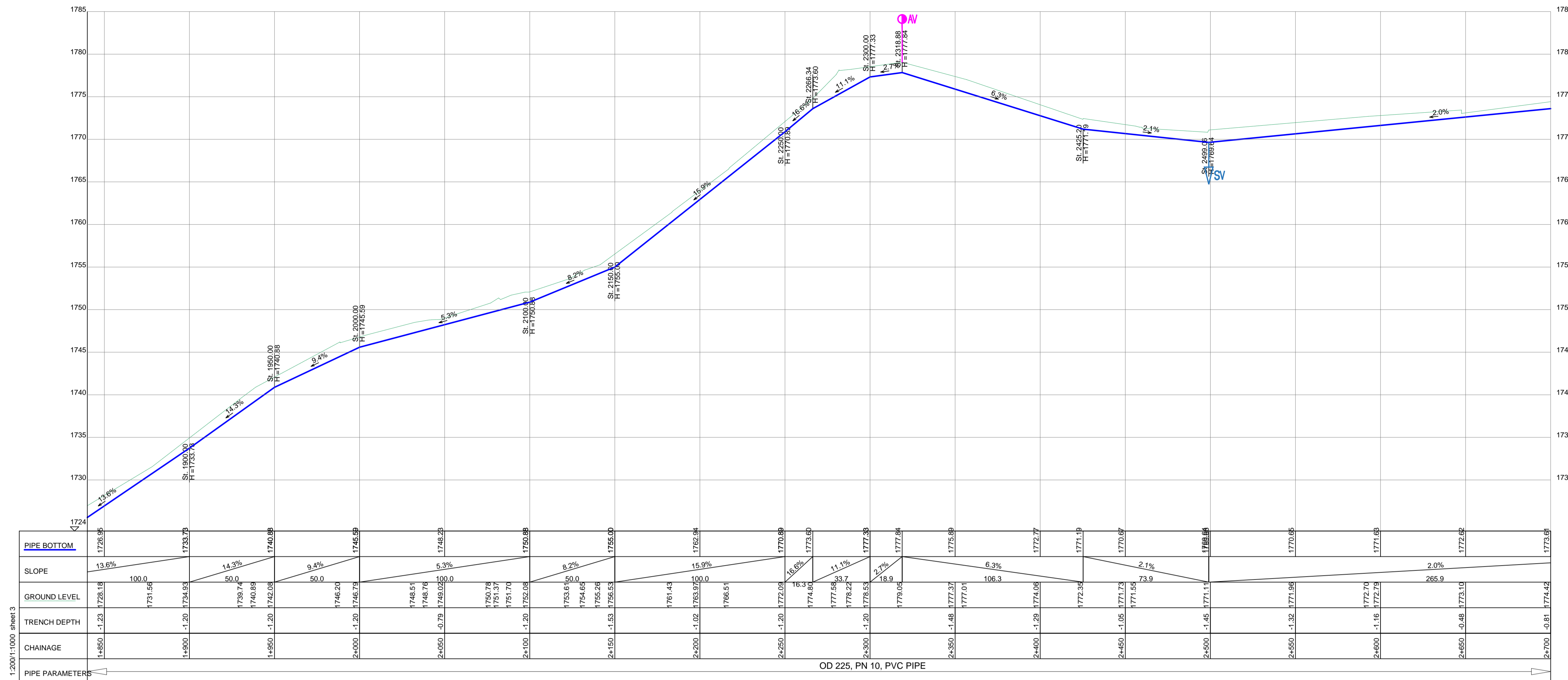
Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_03**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

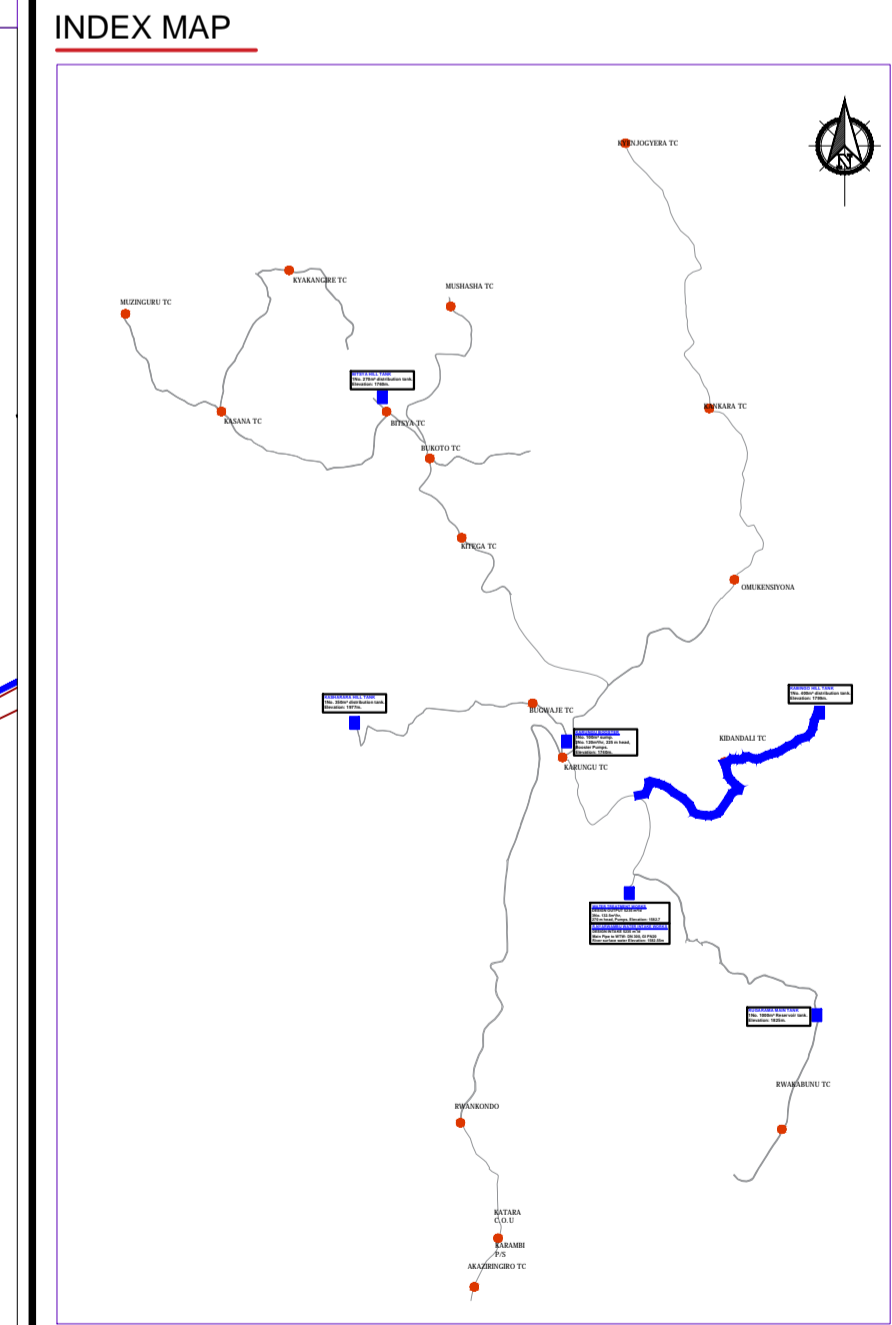
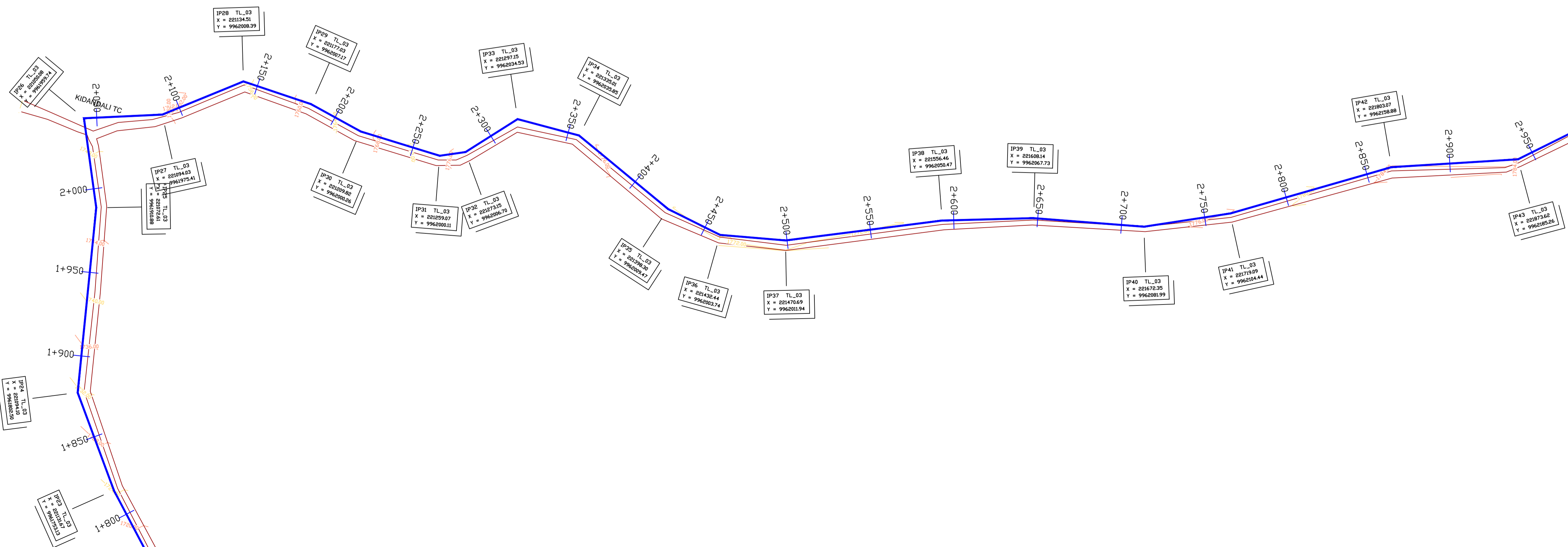
DRG. NO: KP/BWS/PP/TL03-02 | Date: SEPT 2021

1:2000/1:1000 sheet 2



TRANSMISSION MAIN TL_03

1:200/1:1000 sheet 3



Scale: Horizontal 1 : 1000
Vertical 1 : 100

Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_03**

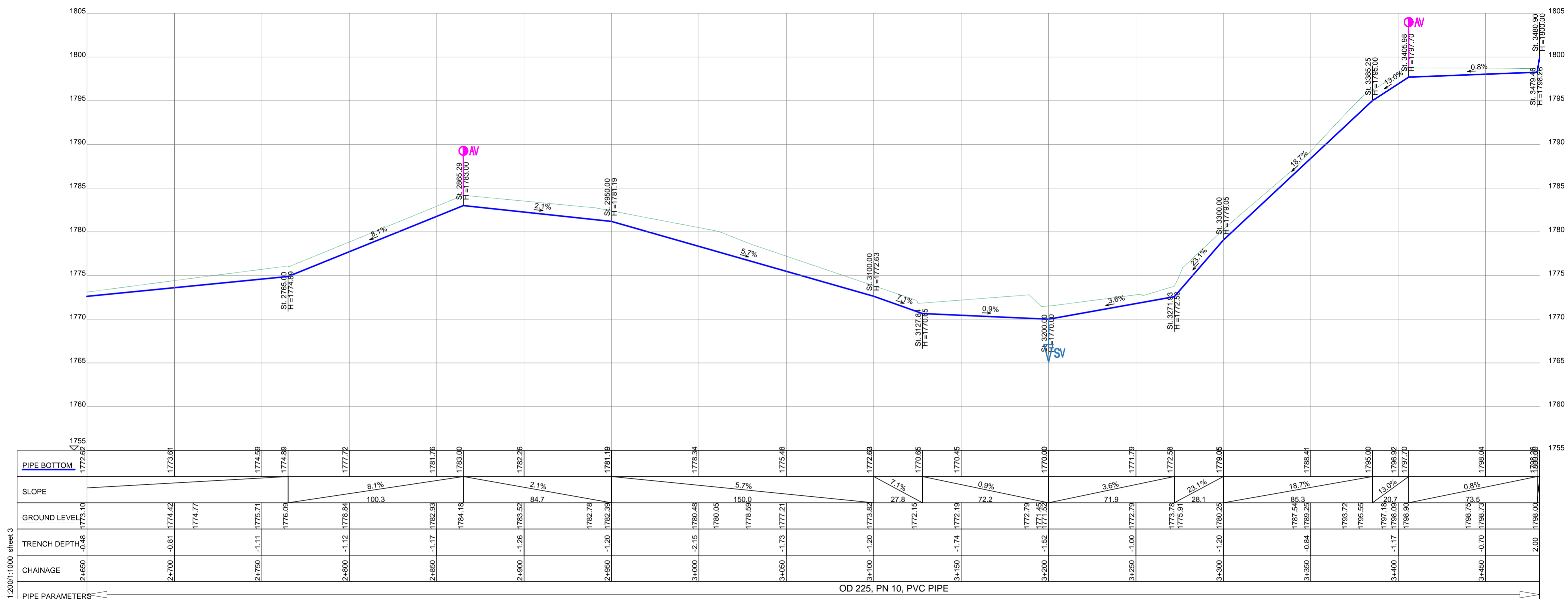
Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/TL03-03 Date: /SEPT 2021

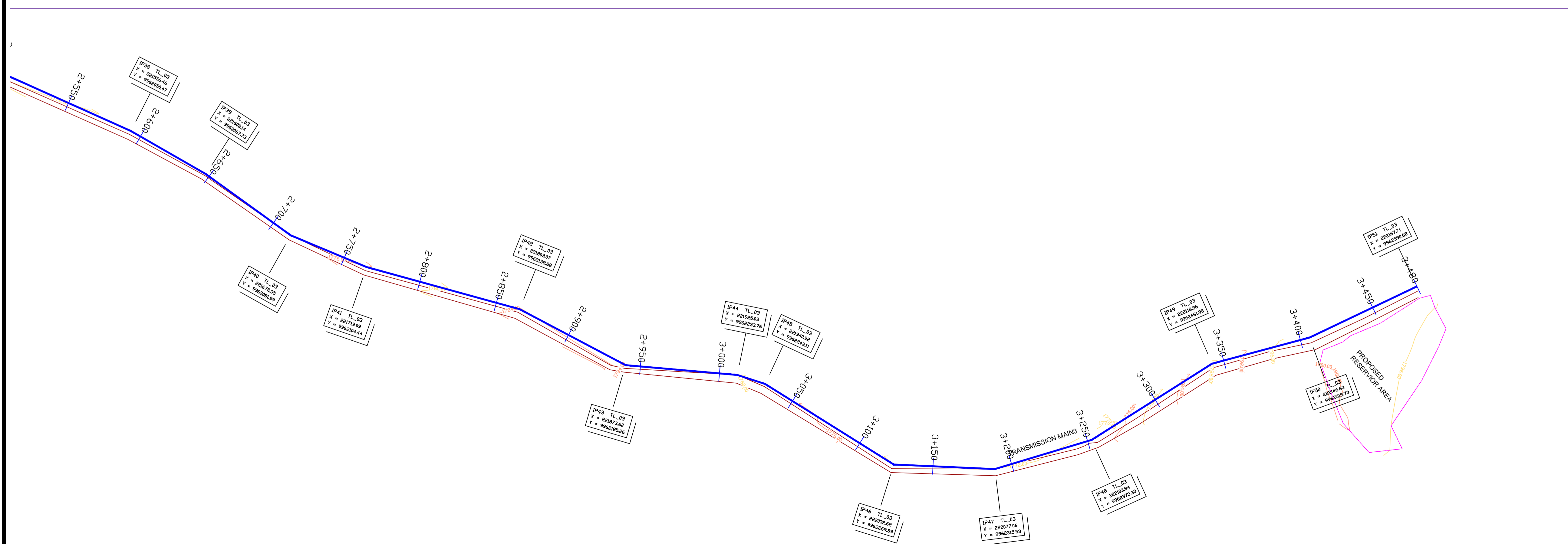
LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



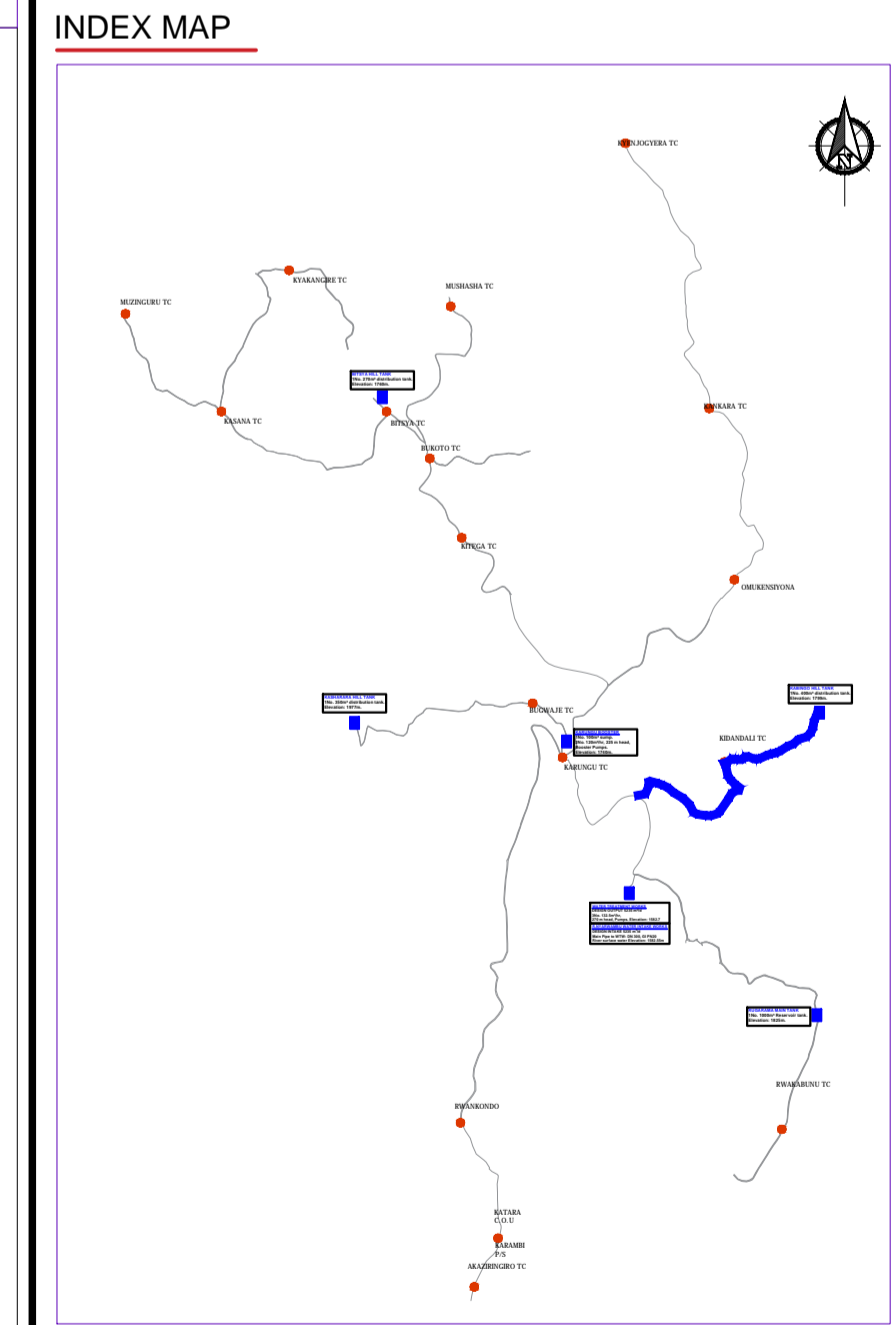
TRANSMISSION MAIN TL_03



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
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- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

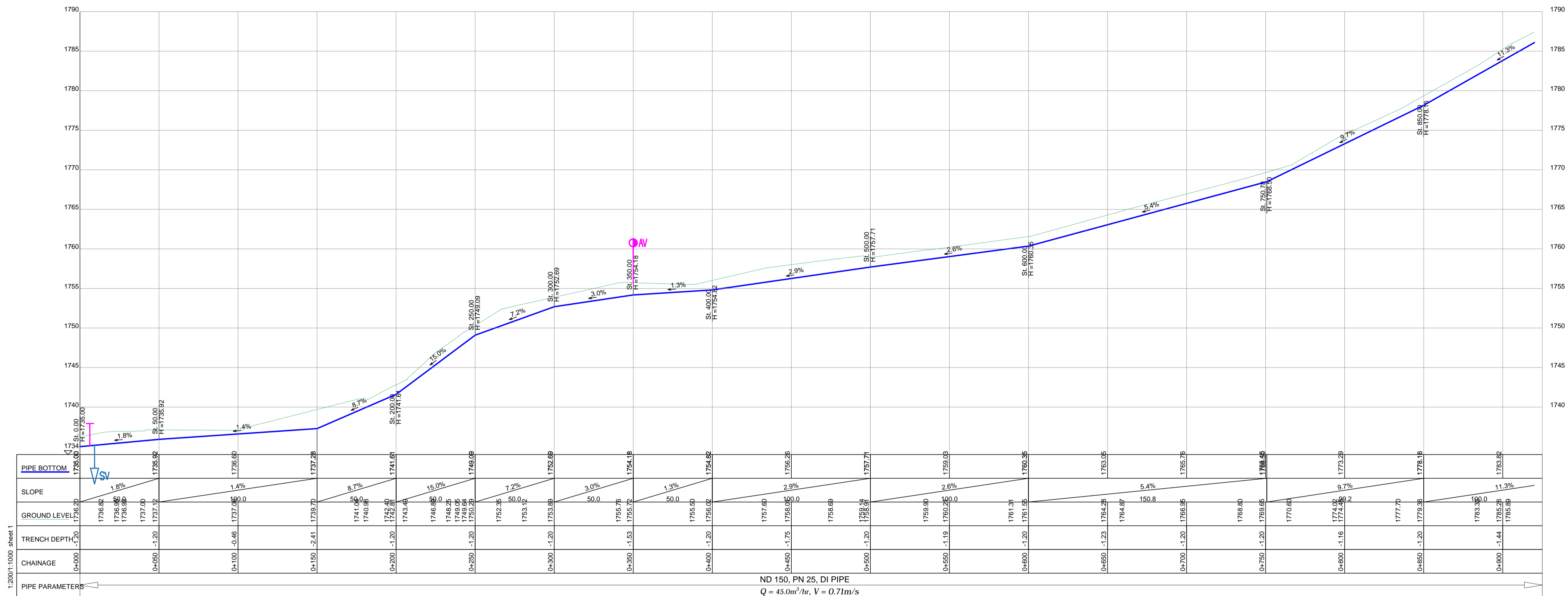
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE TRANSMISSION MAIN TL_03**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/TL03-04 Date: SEPT 2021

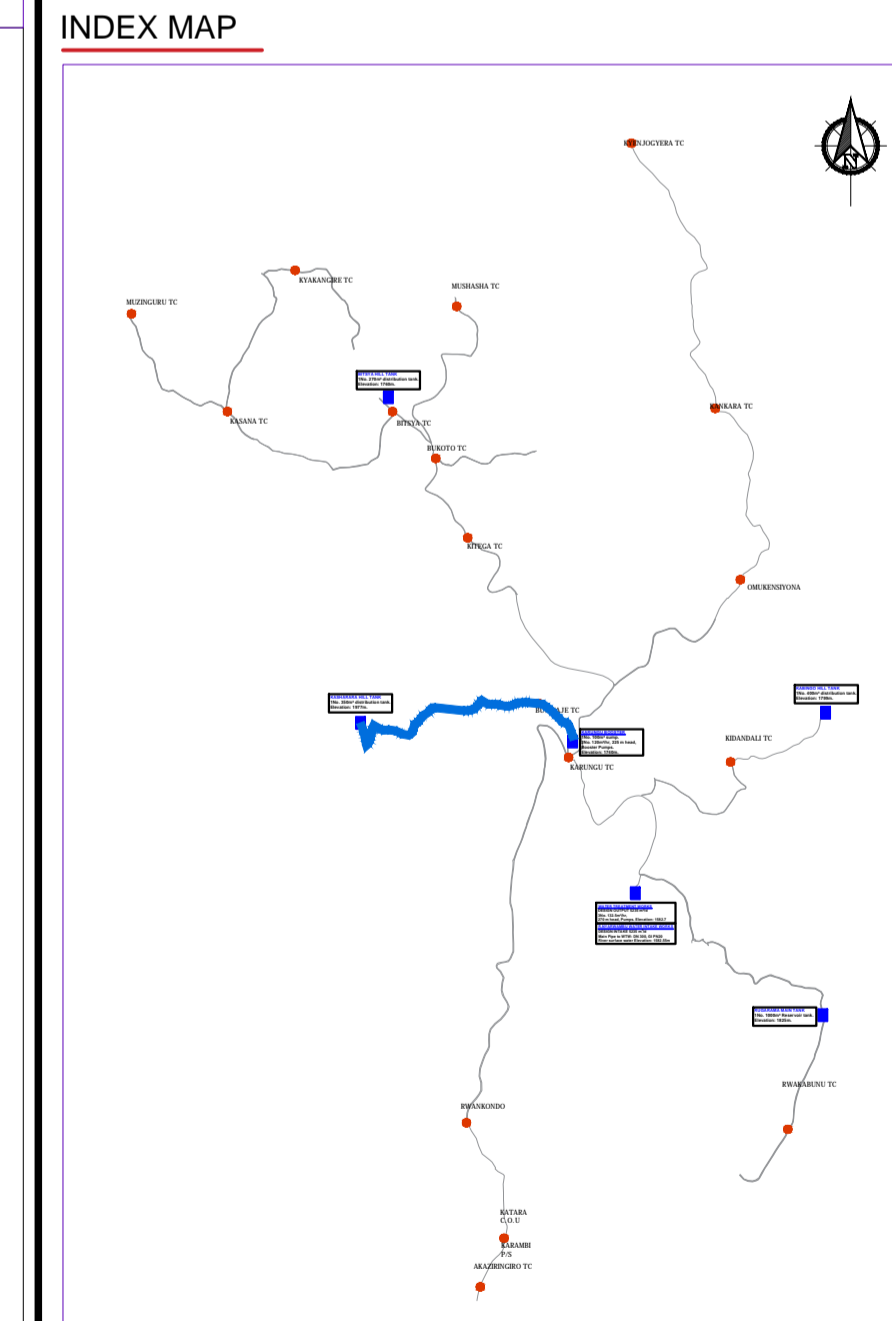
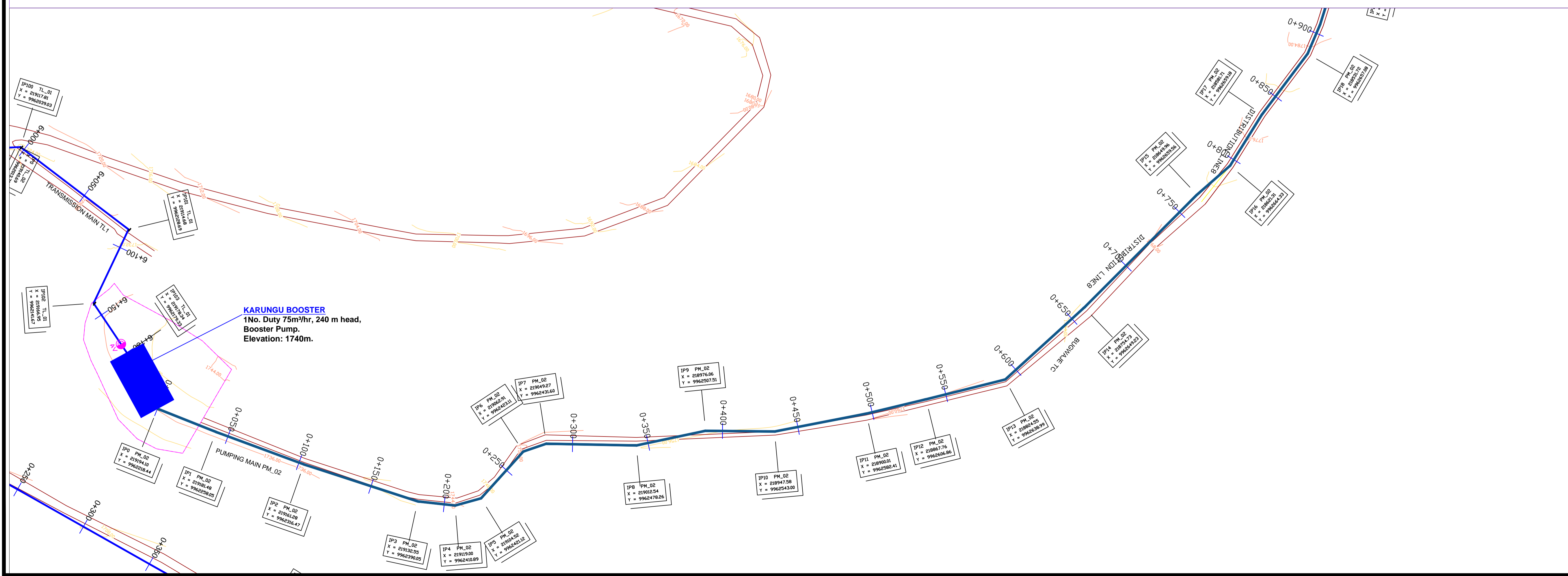


PUMPING MAIN PM_02

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000, Vertical 1 : 100

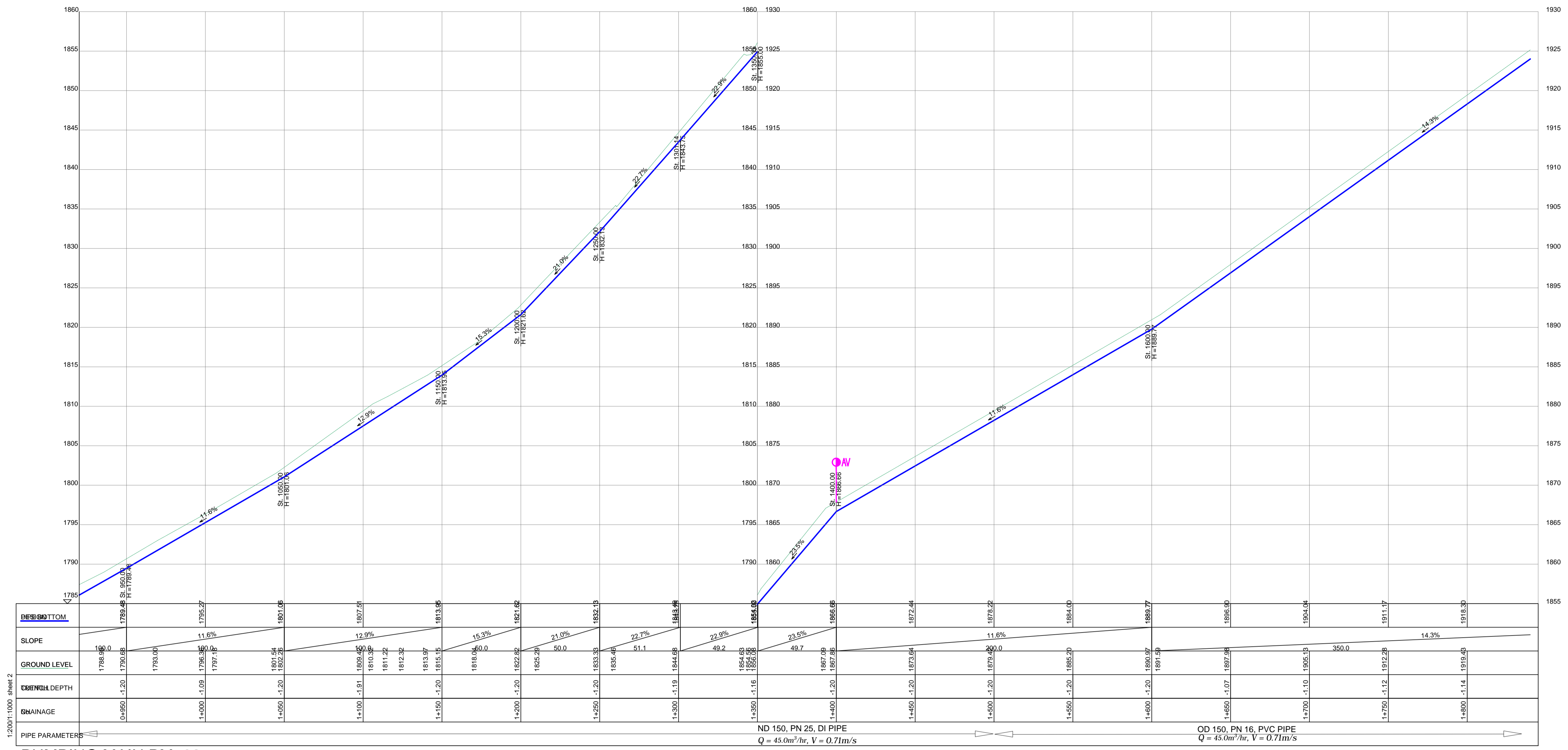
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, RANDALL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/PM02-01 Date: SEPT 2021



PUMPING MAIN PM_02

1:2000:1:1000 sheet 2

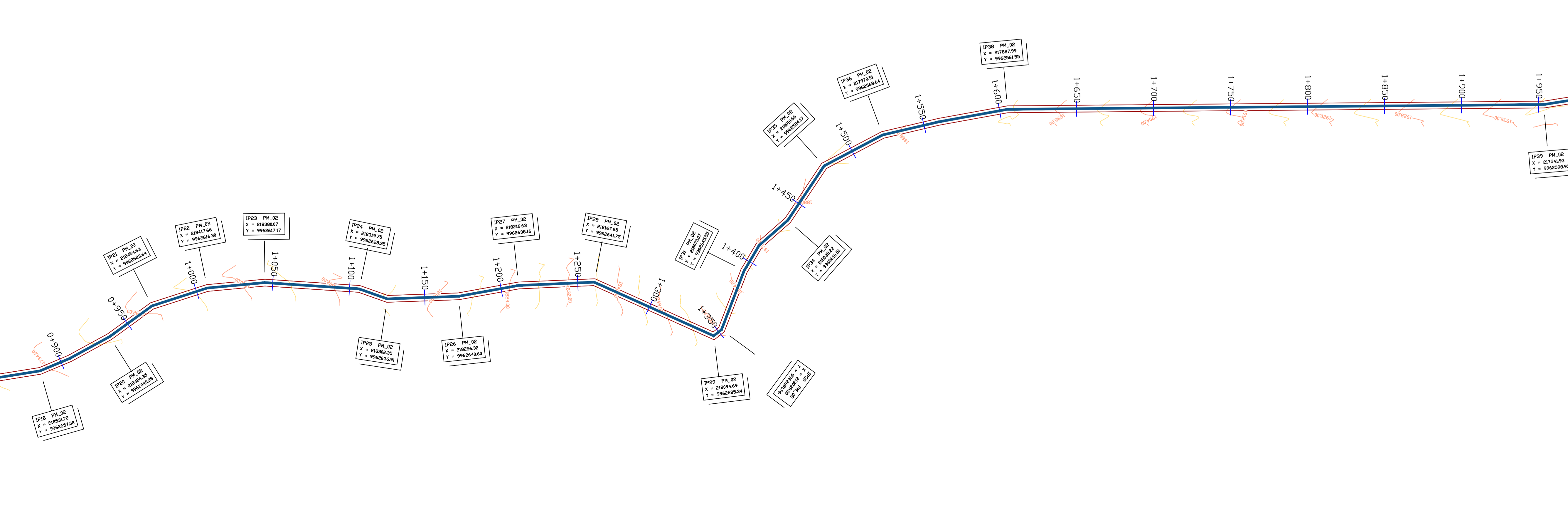
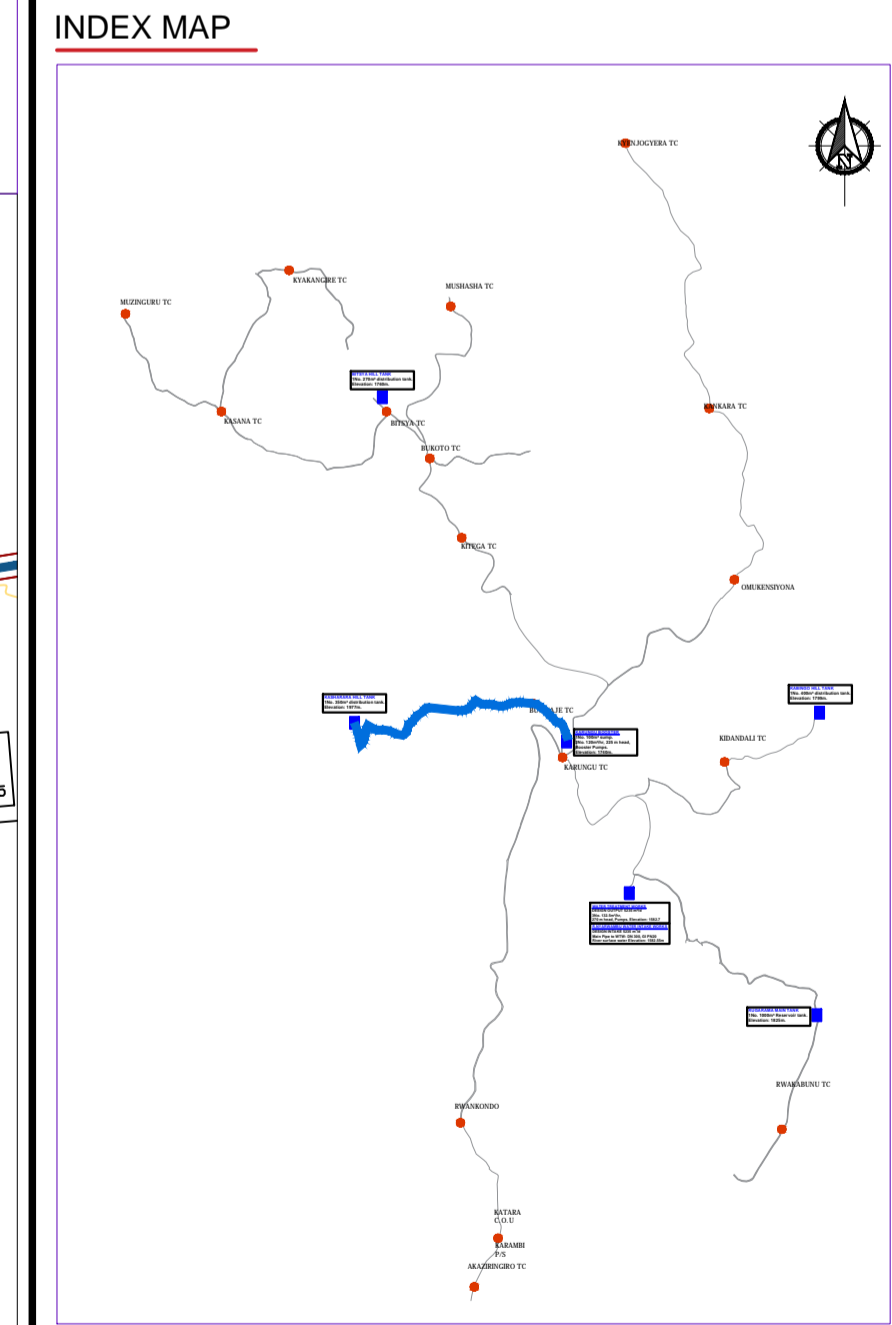
ND 150, PN 25, DI PIPE
Q = 45.0m³/hr, V = 0.71m/s

OD 150, PN 16, PVC PIPE
Q = 45.0m³/hr, V = 0.71m/s

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

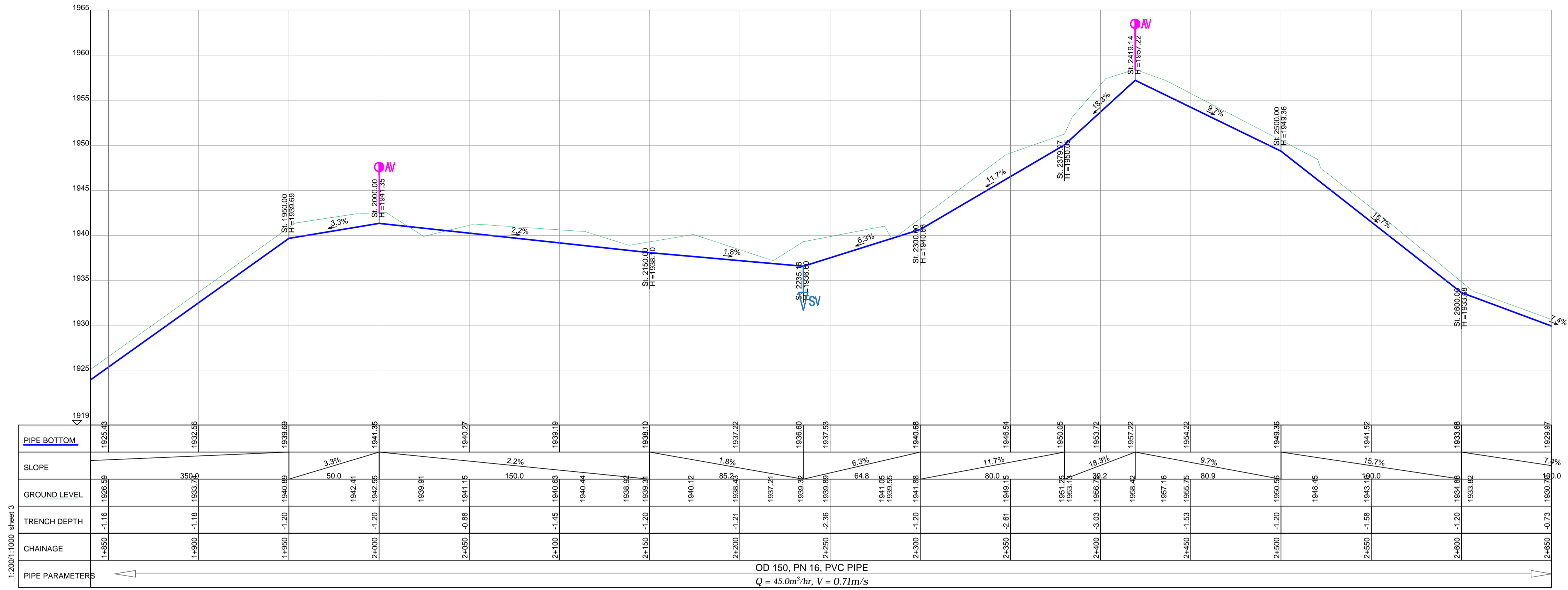
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

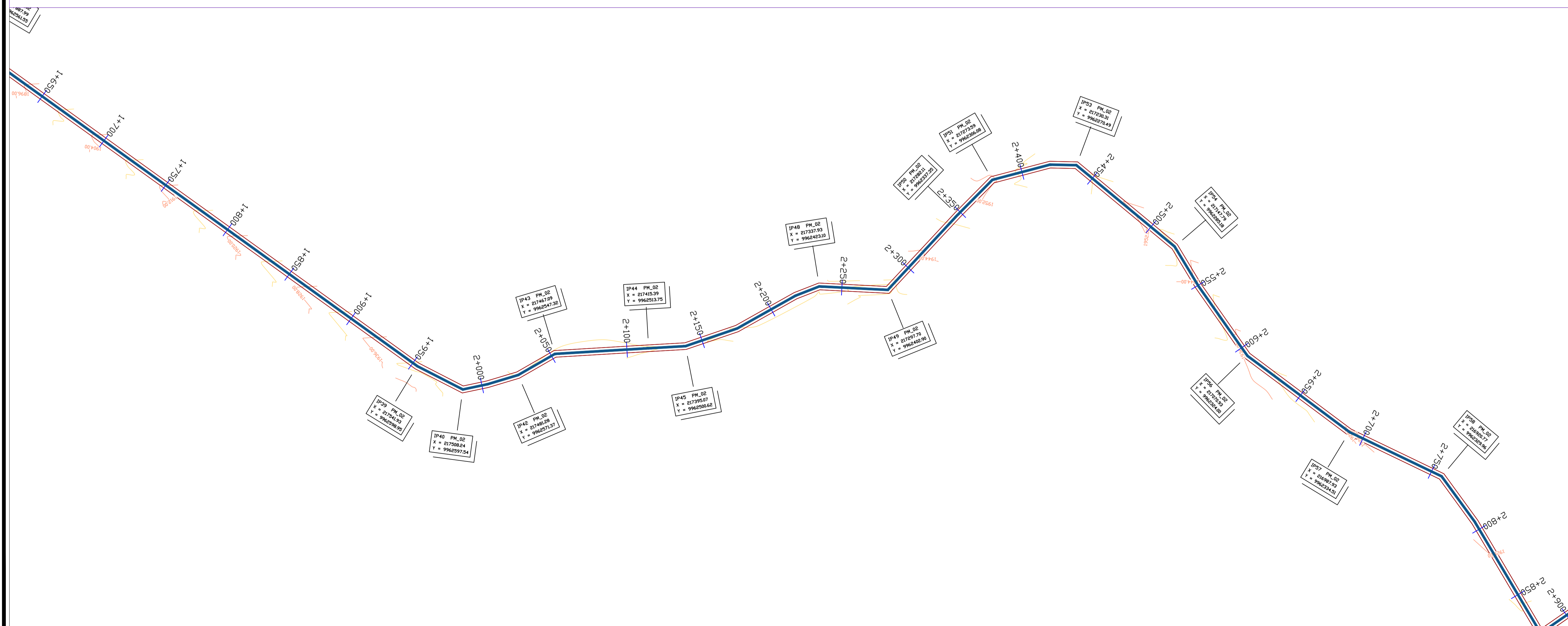
Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAIZI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279, FAX: 256 41 220208,
P.O. BOX 65852, KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/PM02-02 Date: SEPT 2021



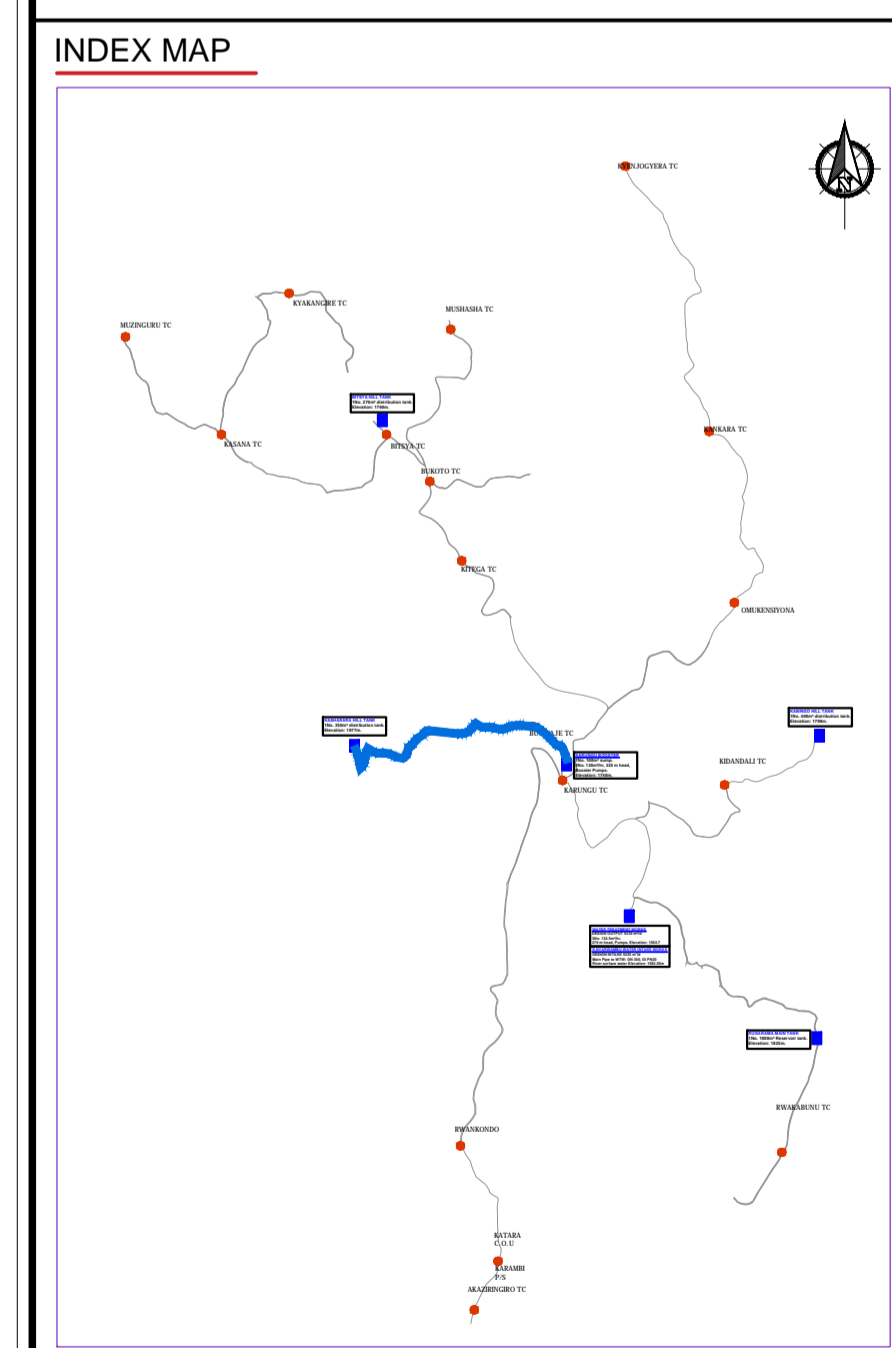
PUMPING MAIN PM_02



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

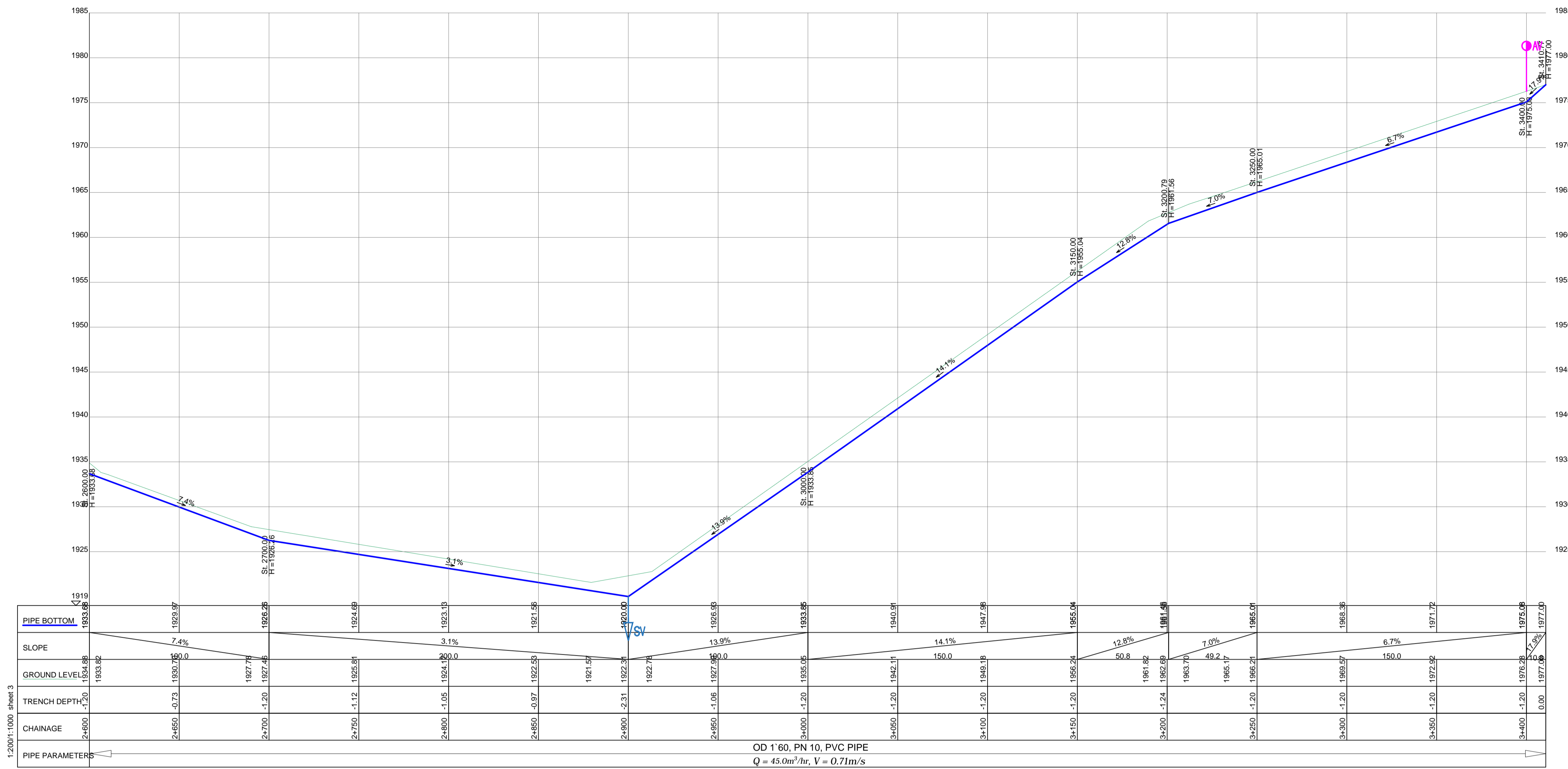
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

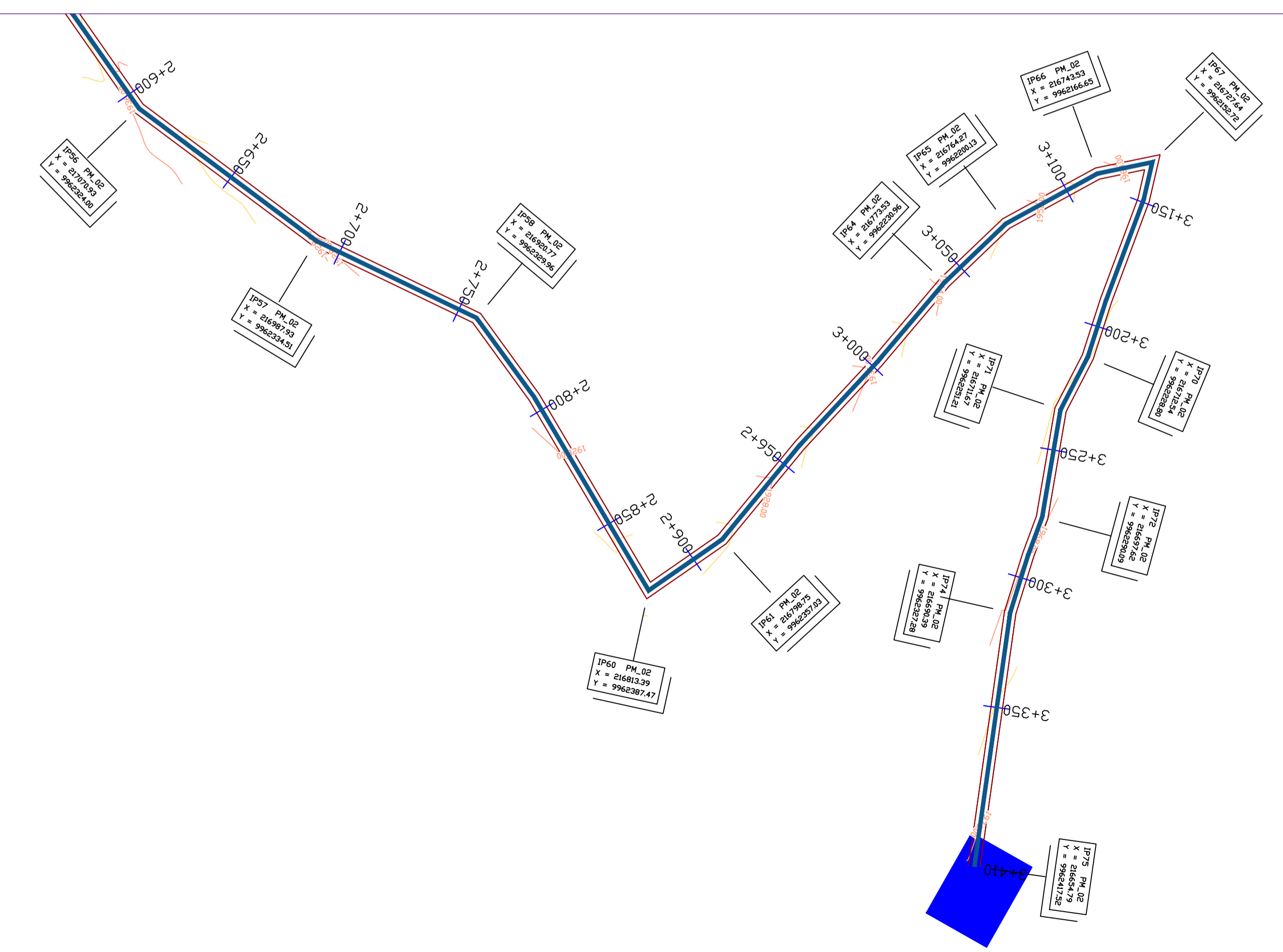
Title: **PLAN PROFILE OF PIPE LINE PUMPING MAIN PM_02**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 65852,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/PM02-03 Date: SEPT 2021



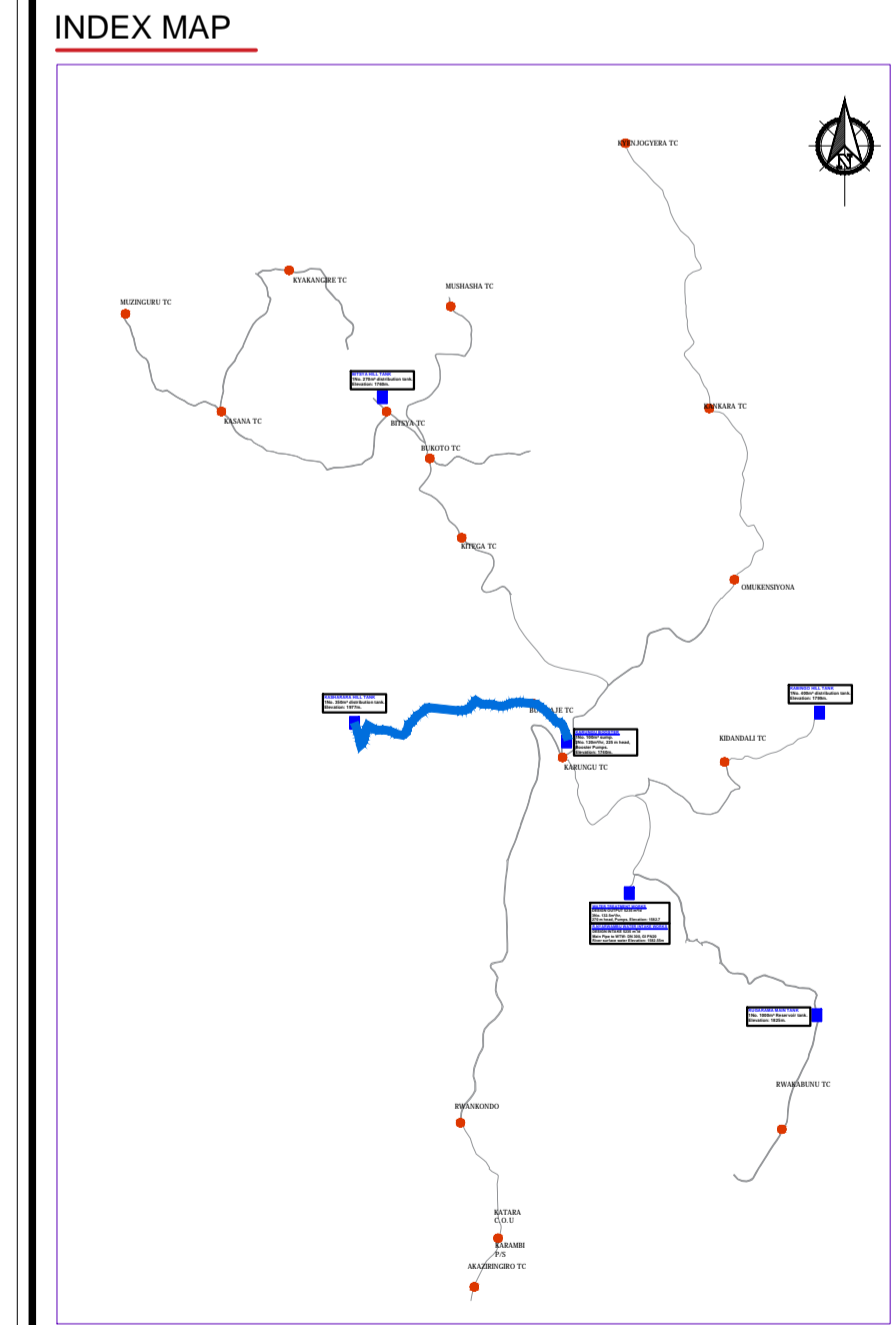
PUMPING MAIN PM_02



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
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Scale: Horizontal 1 : 1000
Vertical 1 : 100

Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

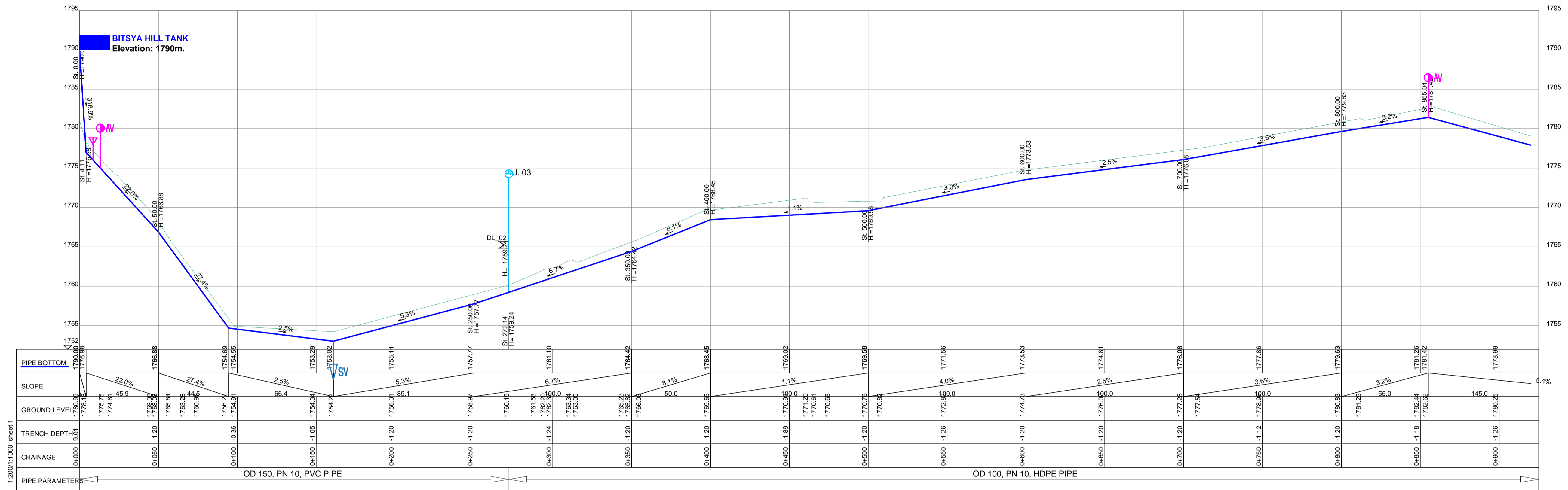
Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
PUMPING MAIN PM_02

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/PM02-04 Date: /SEPT 2021

DISTRIBUTION MAINS



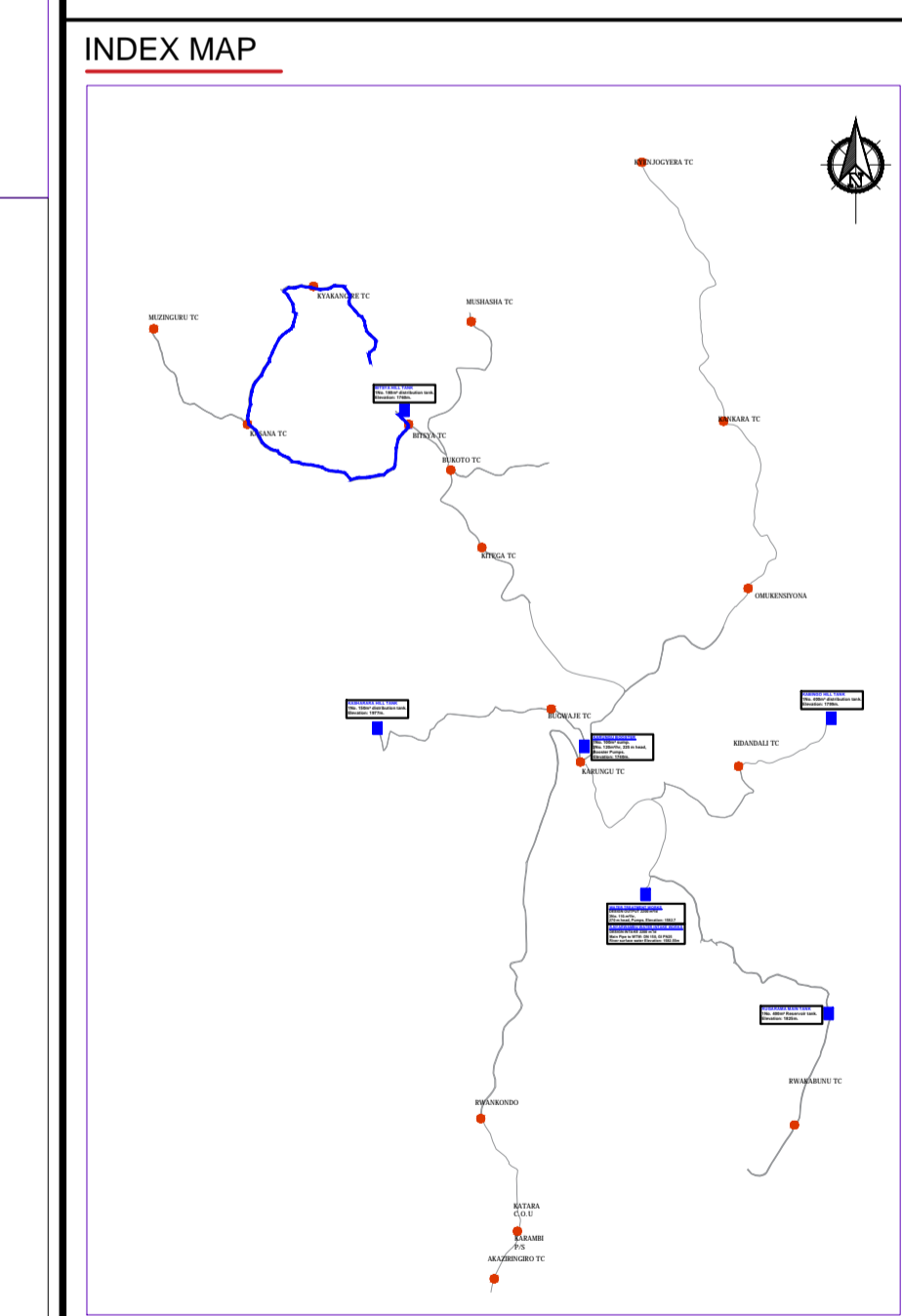
1:2000:1:1000 Sheet 1

DISTRIBUTION LINE DL_01

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1:1000, Vertical 1:100

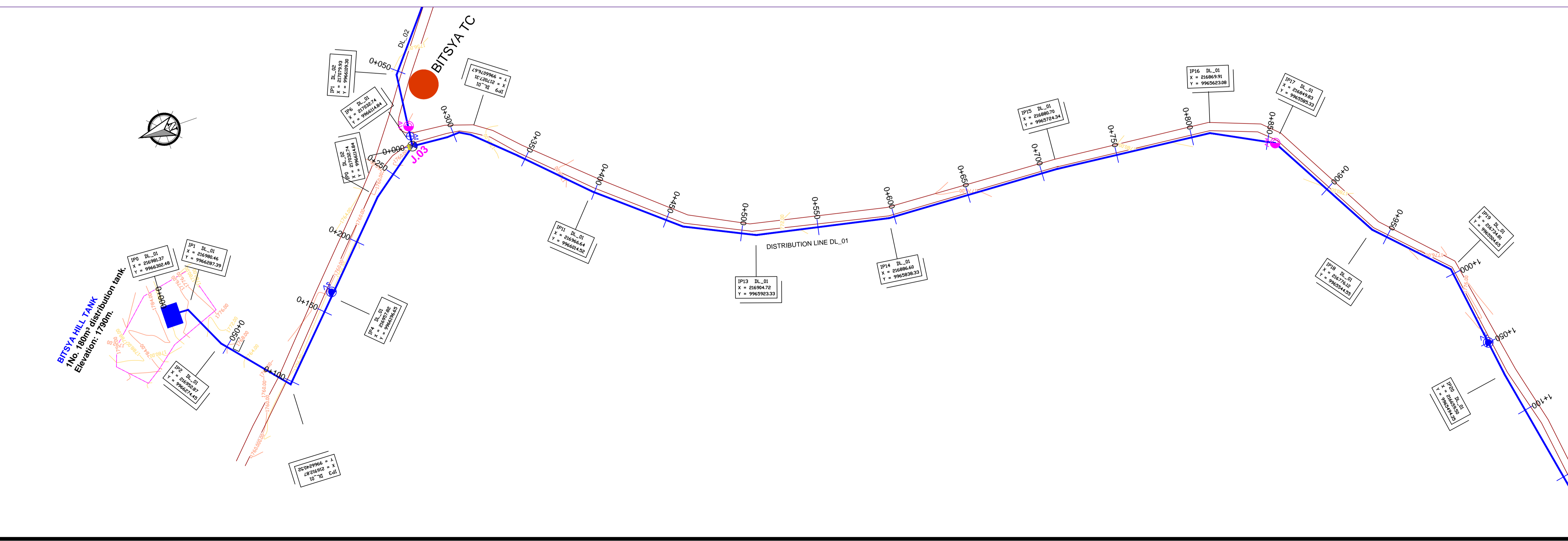
Client: REPUBLIC OF UGANDA, MINISTRY OF WATER AND ENVIRONMENT

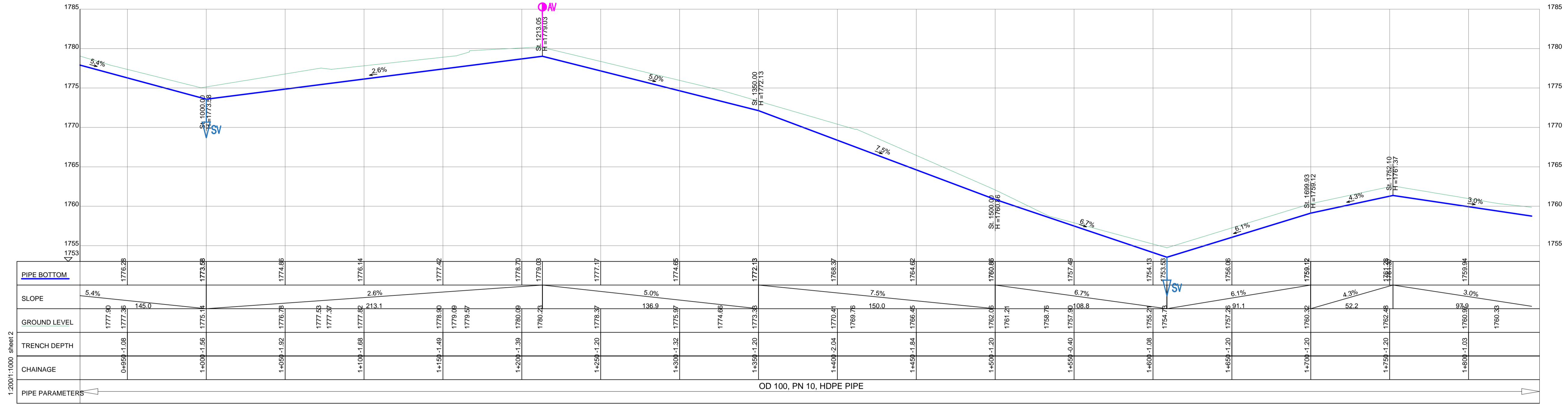
Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_01

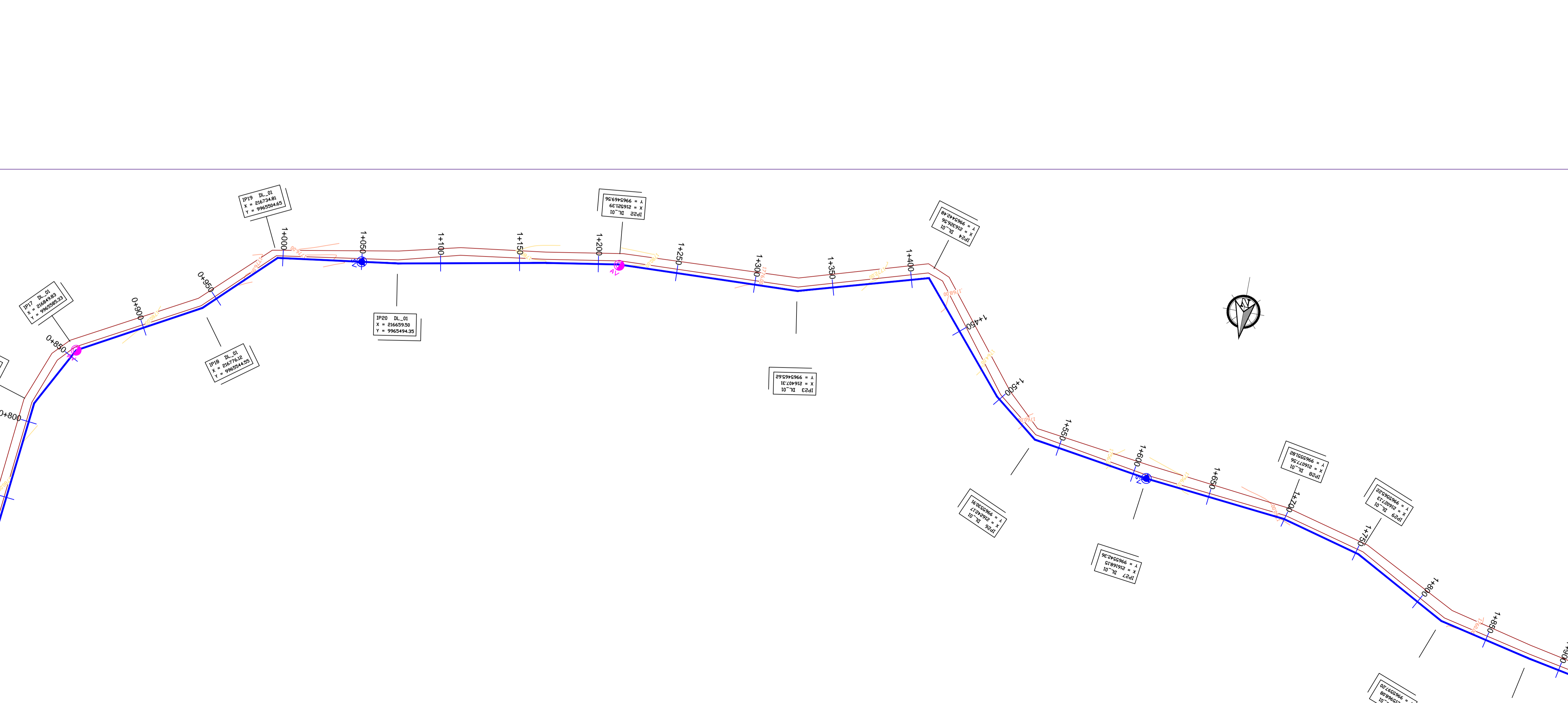
Consultants: KAGGA & PARTNERS

DRG. NO: KP/BWS/PP/DL01-01 | Date: SEPT 2021





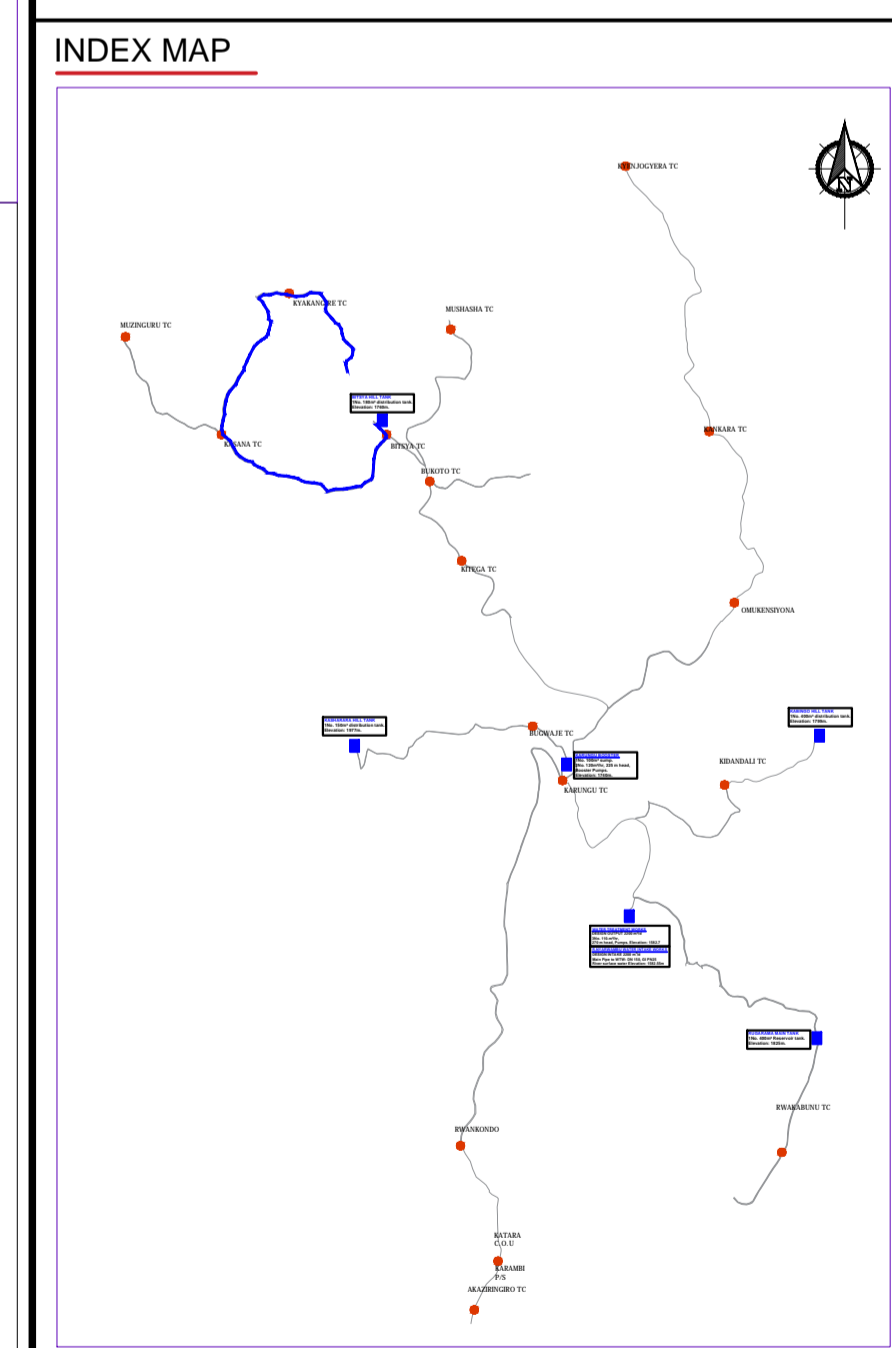
DISTRIBUTION LINE DL_01



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
 - REFER TO AUXILIARY WORKS DRAWINGS FOR ANCHORAGE TO PIPELINES, AIR VALVES DETAILS, PIPE PEDESTALS, PULLEY SUPPORT, TRENCH DETAILS, VALVE CHAMBERS, WASHOUT CHAMBERS AND WATER METERS.
 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

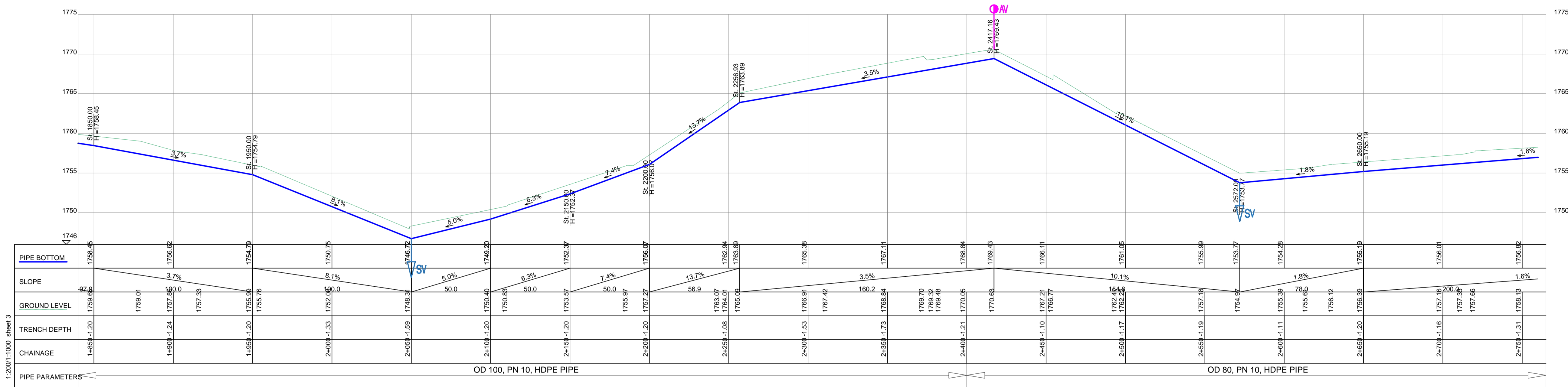
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

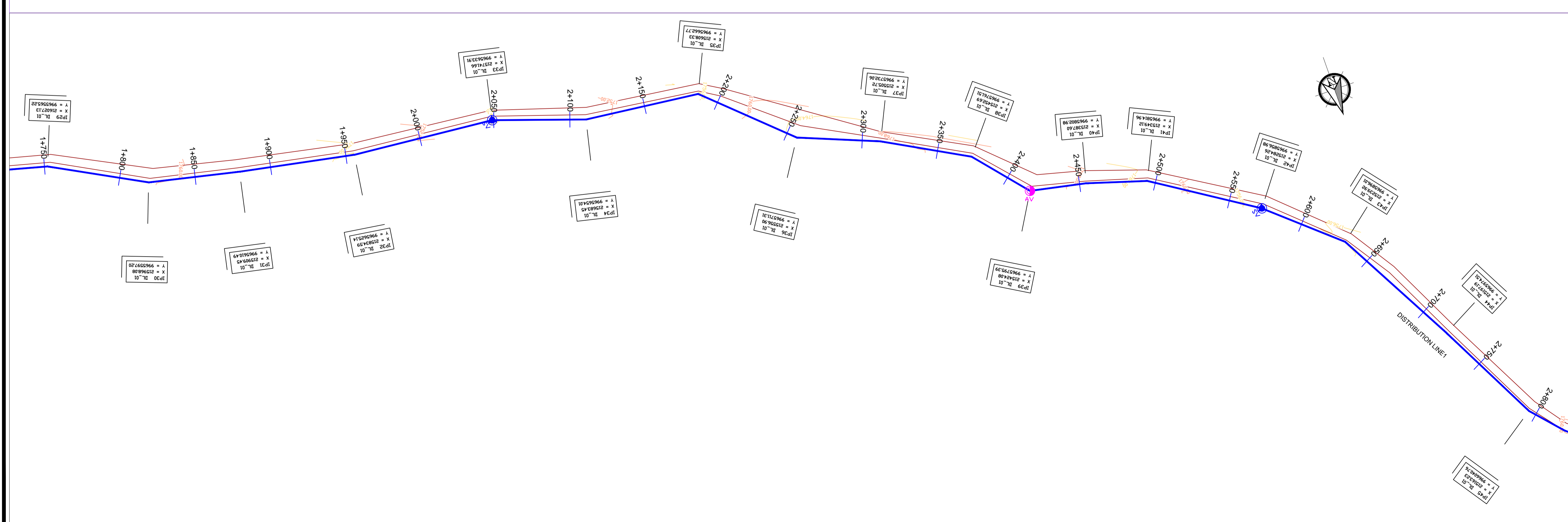
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_01

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL01-02 Date: SEPT 2021



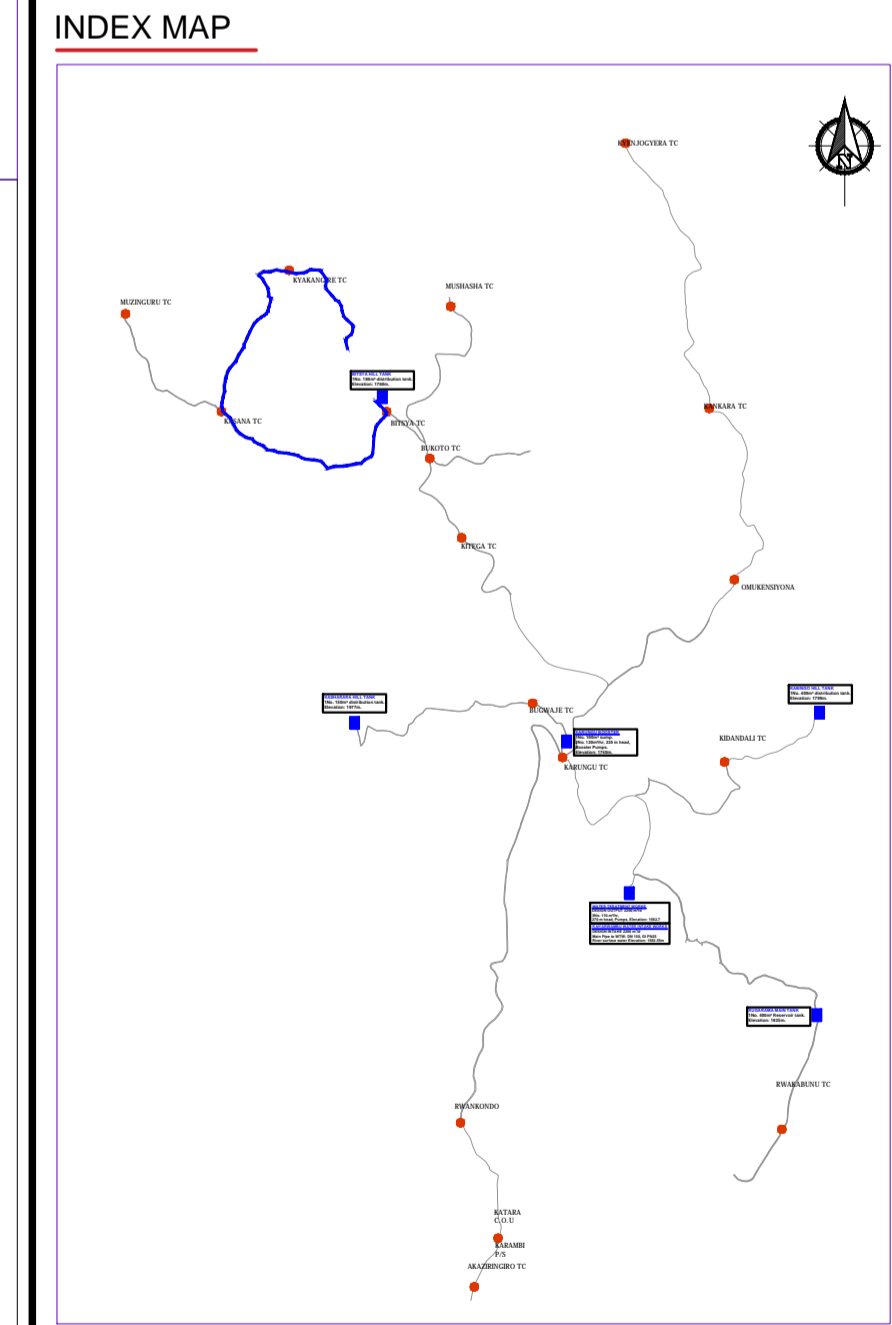
DISTRIBUTION LINE DL_01



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

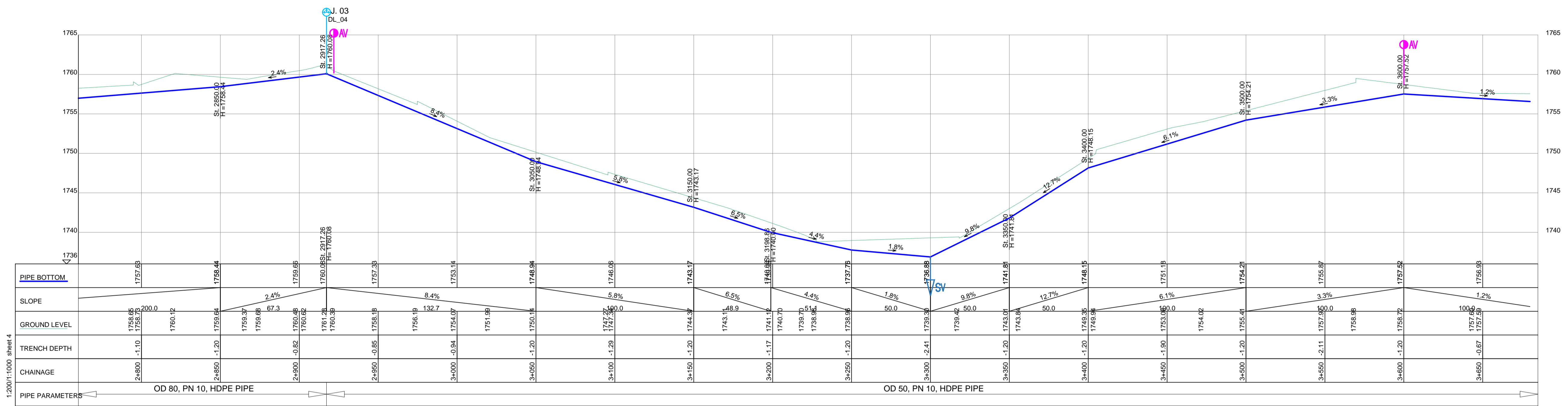
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_01

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAIZI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL01-03 Date: SEPT 2021



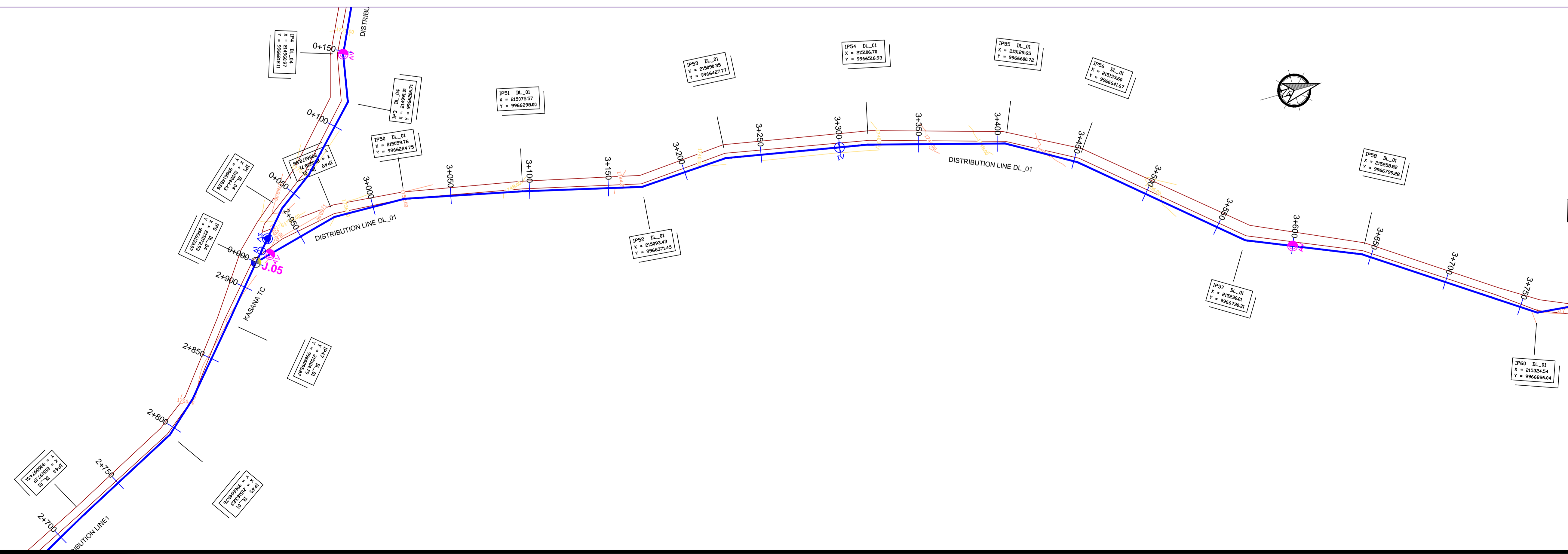
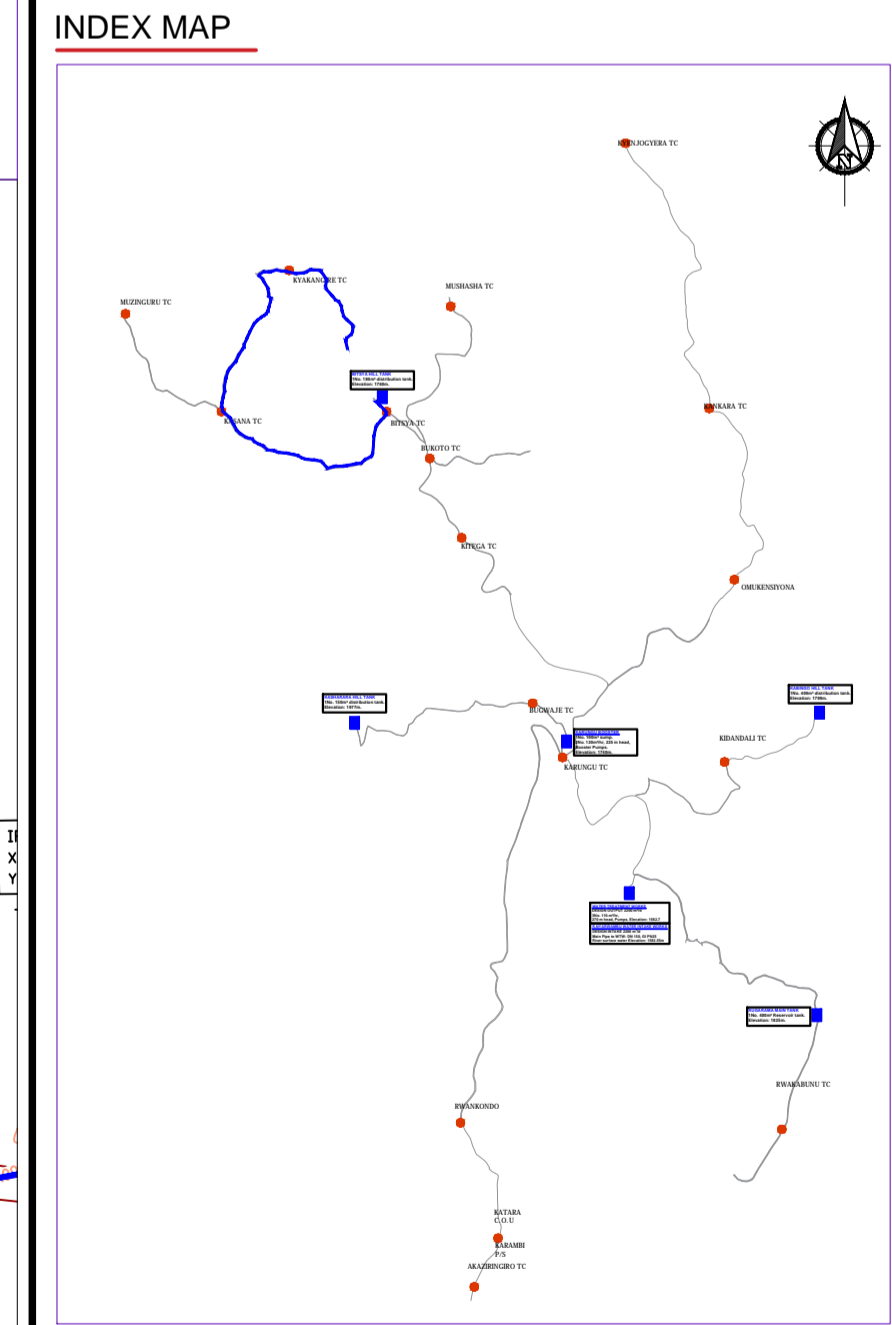
DISTRIBUTION LINE DL_01

1:200/1:1000 sheet 4

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



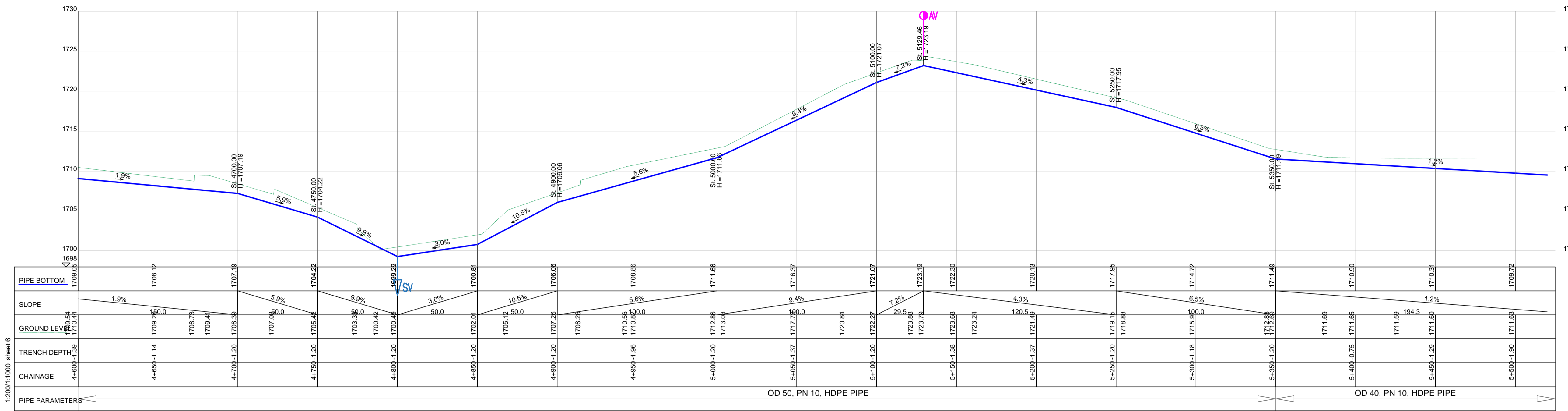
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_01**

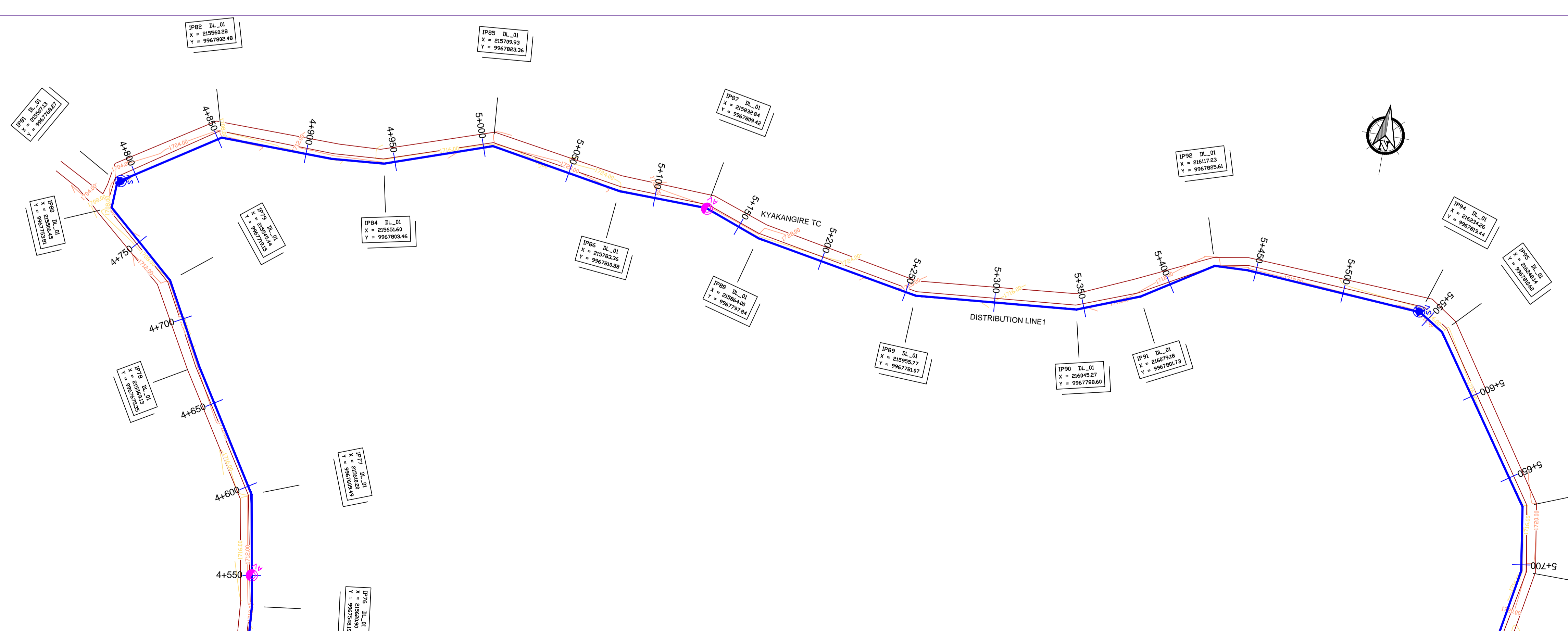
Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL01-04 Date: SEPT 2021



DISTRIBUTION LINE DL_01

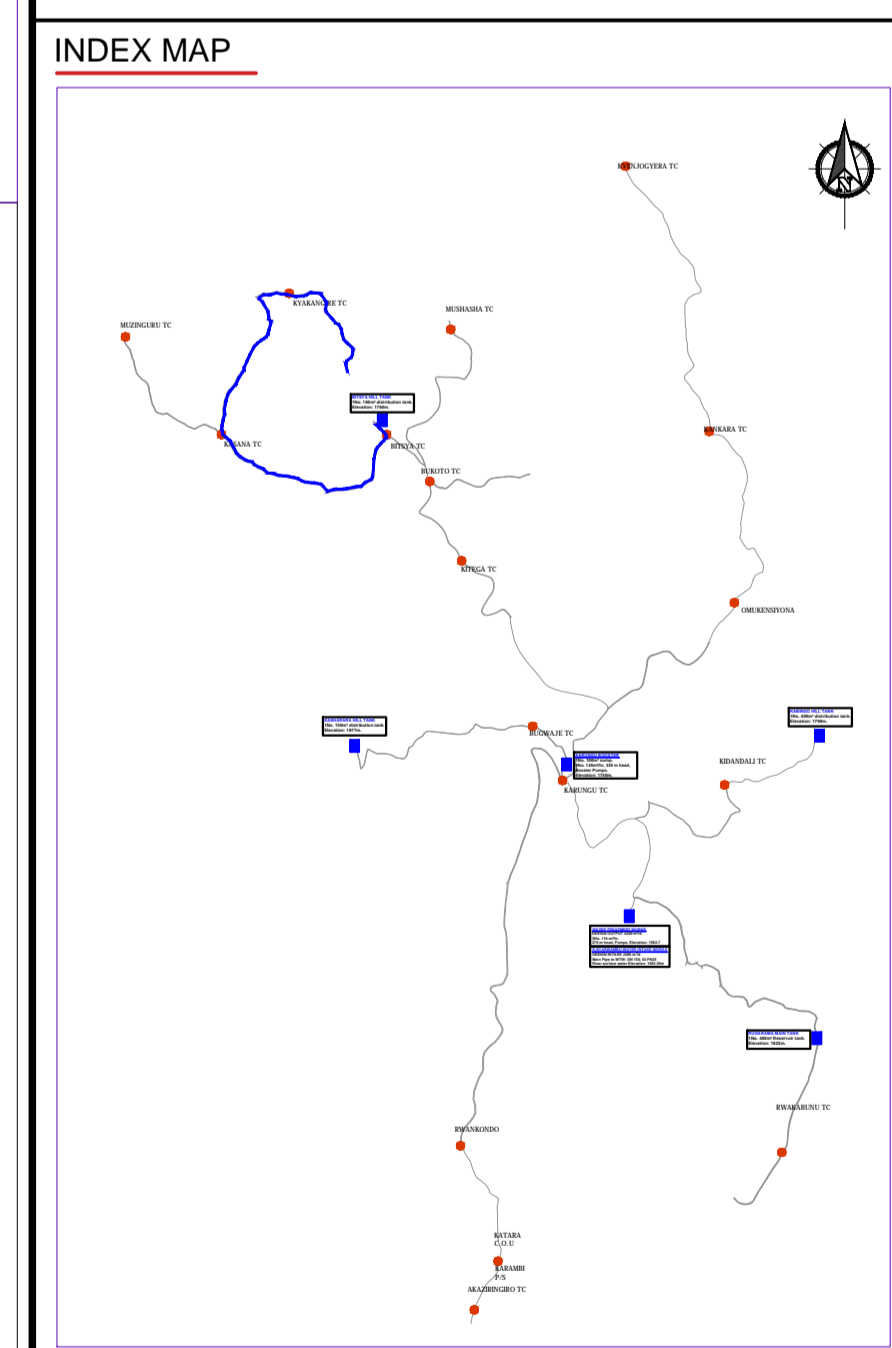
1:2000:1:1000 sheet 6



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

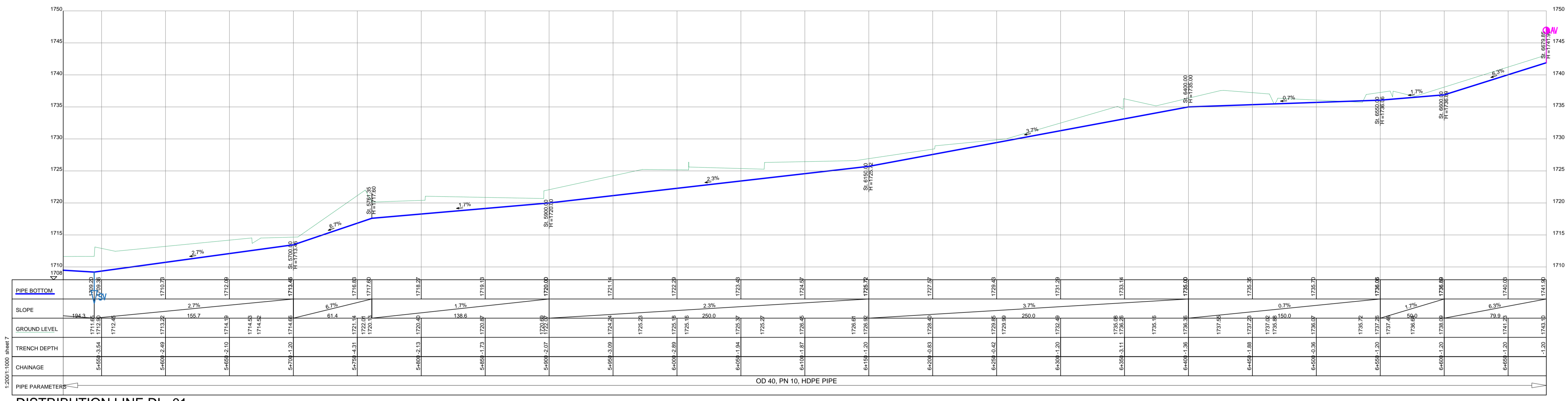
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

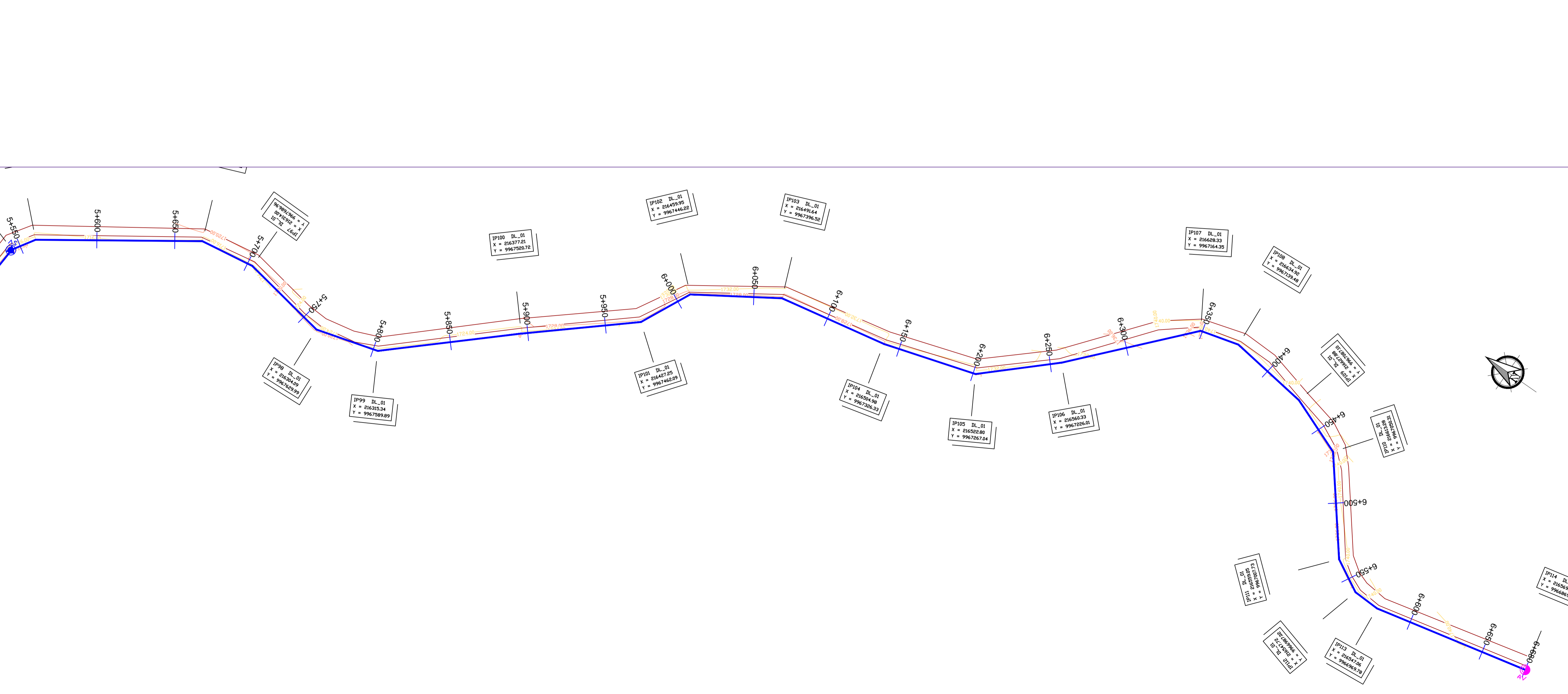
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_01**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL01-06 Date: SEPT 2021



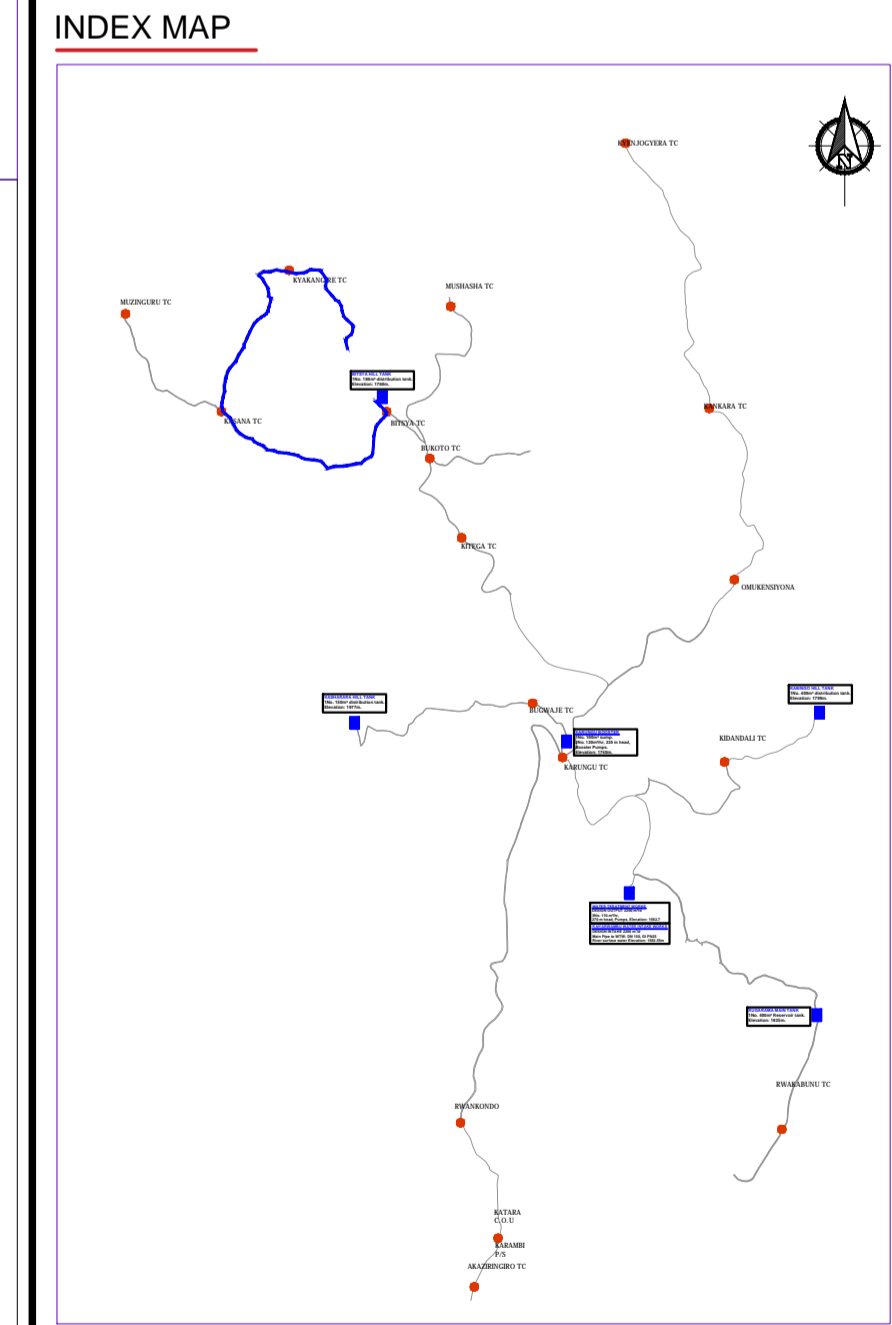
DISTRIBUTION LINE DL_01



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

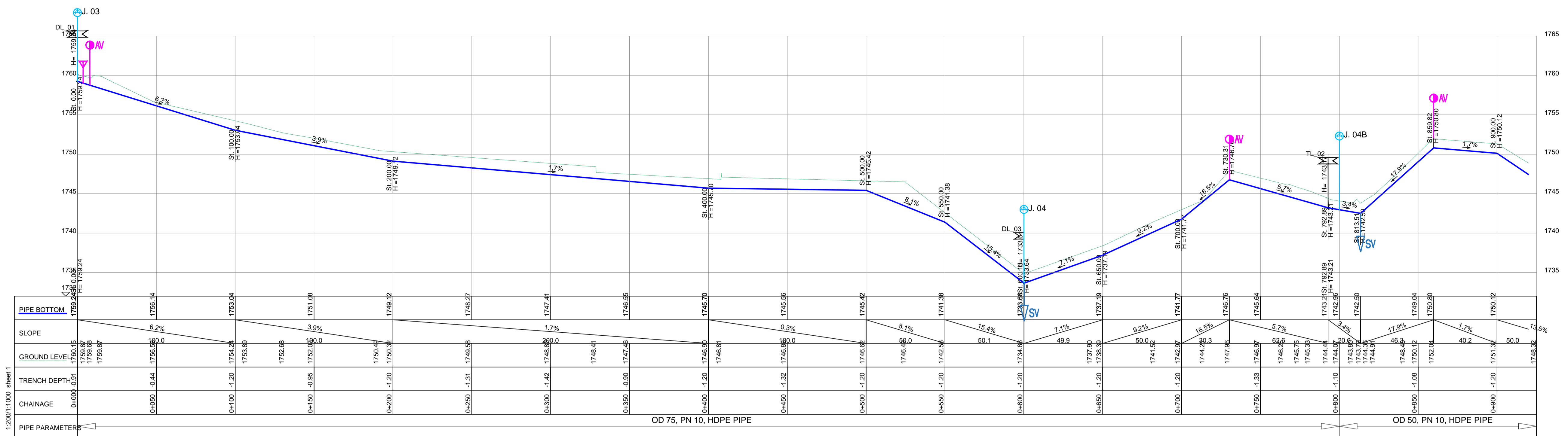
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_01**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL01-07 Date: SEPT 2021



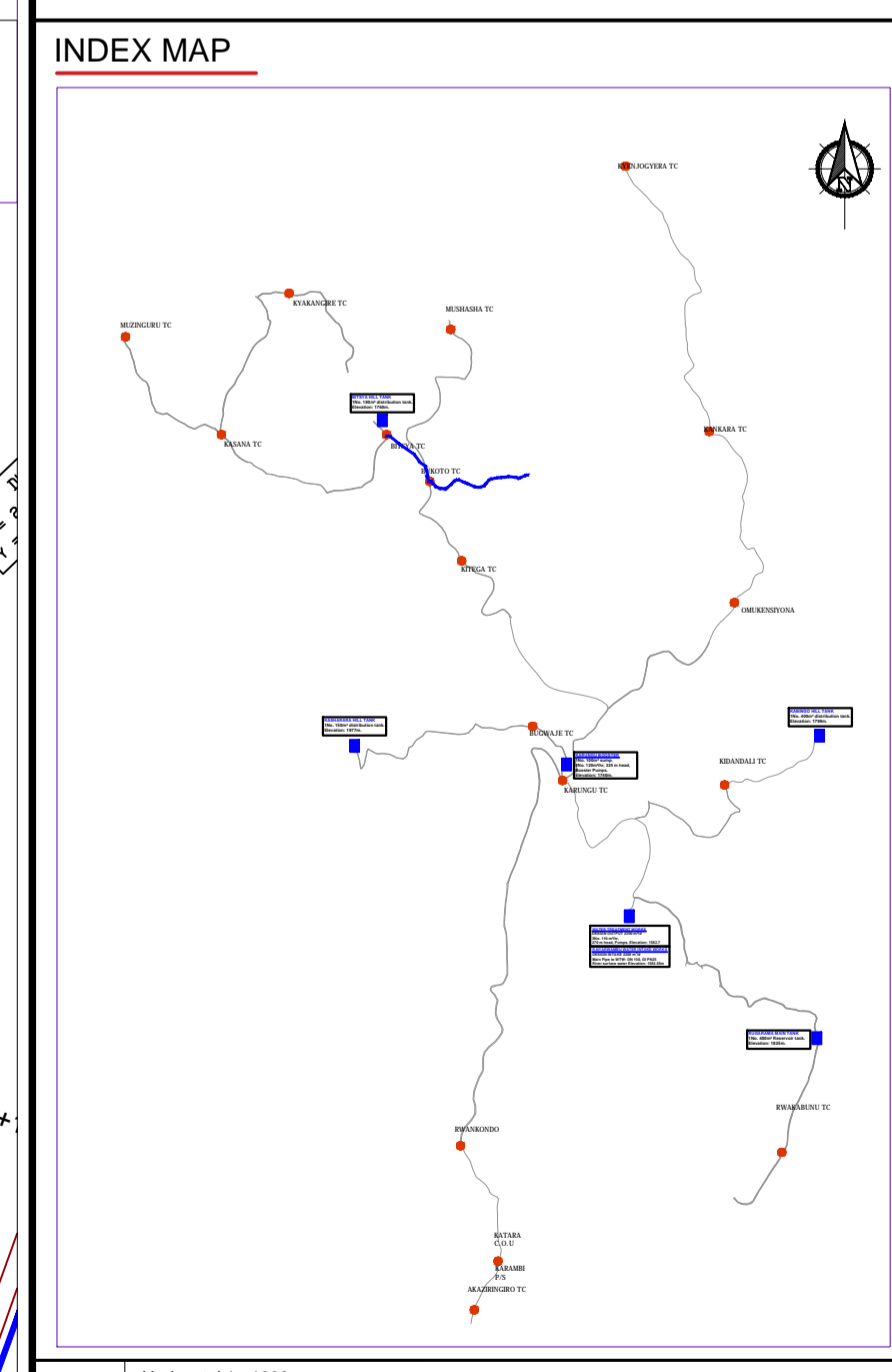
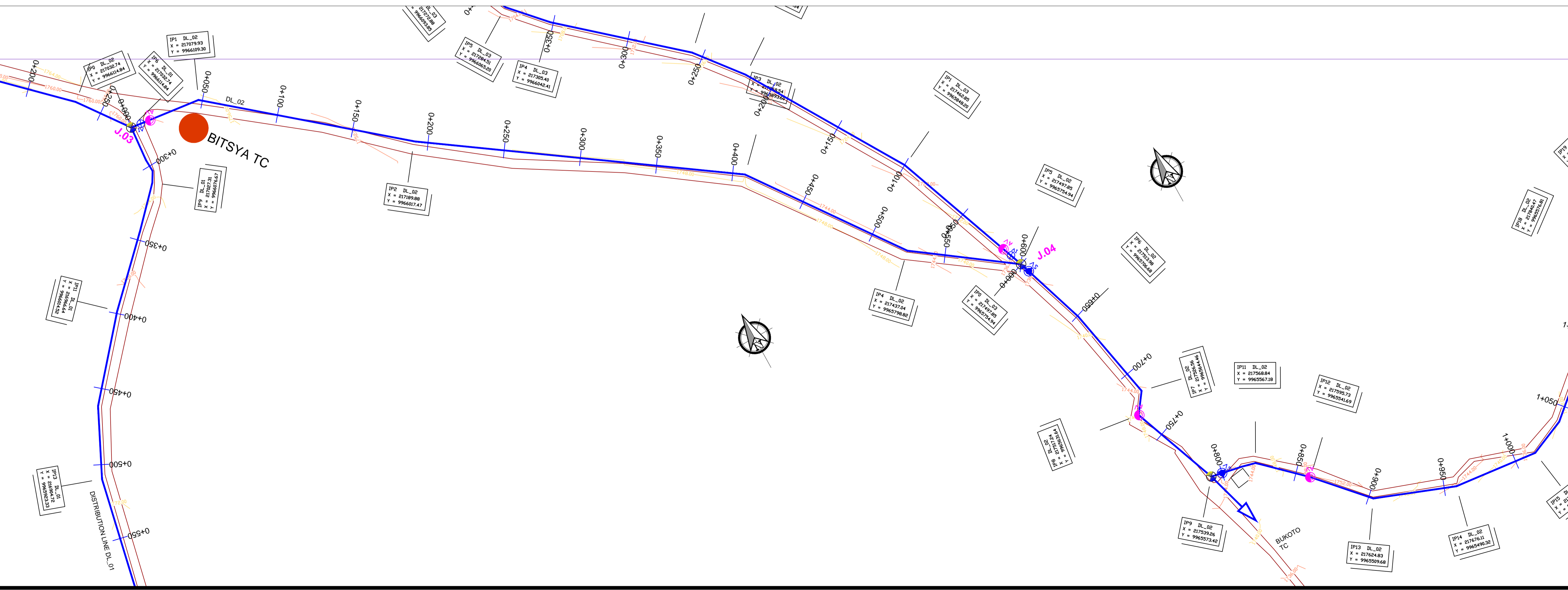
DISTRIBUTION LINE DL_02

1:2000:1:1000 sheet 1

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



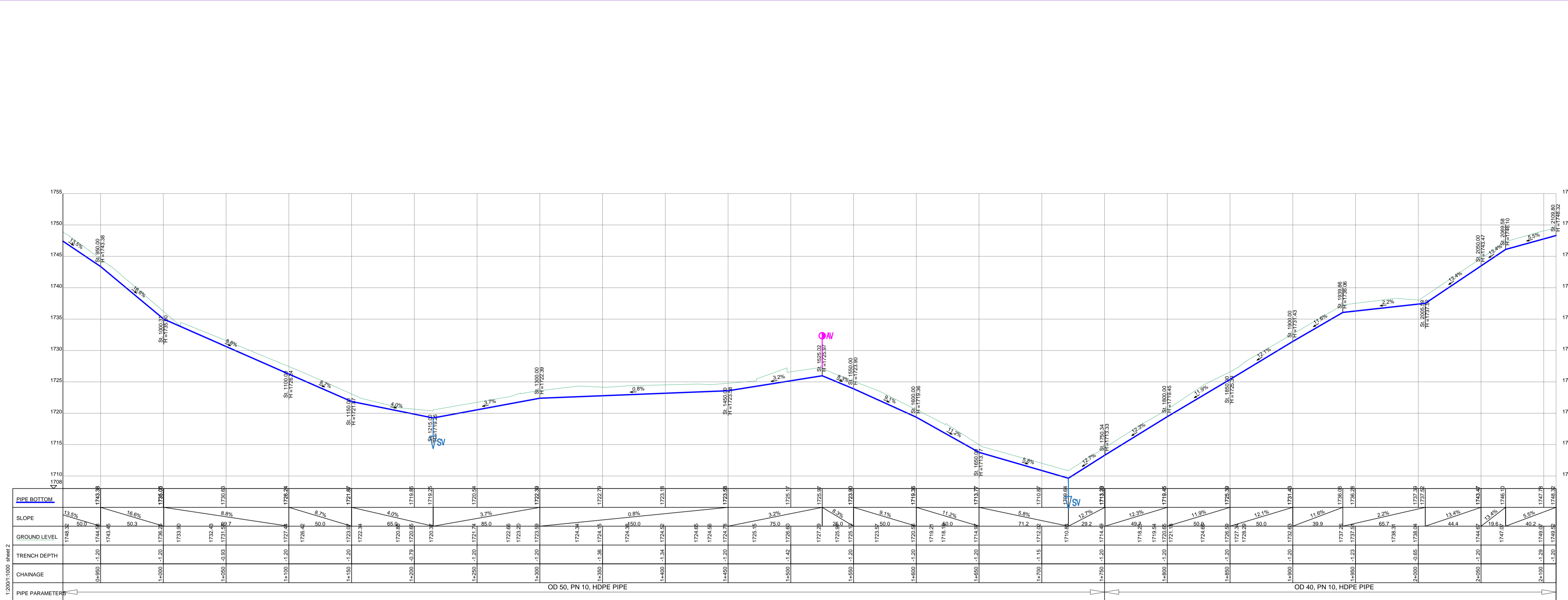
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_02

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL02-01 Date: SEPT 2021



DISTRIBUTION LINE DL_02

1:2000:11000 sheet 2

PIPE PARAMETERS

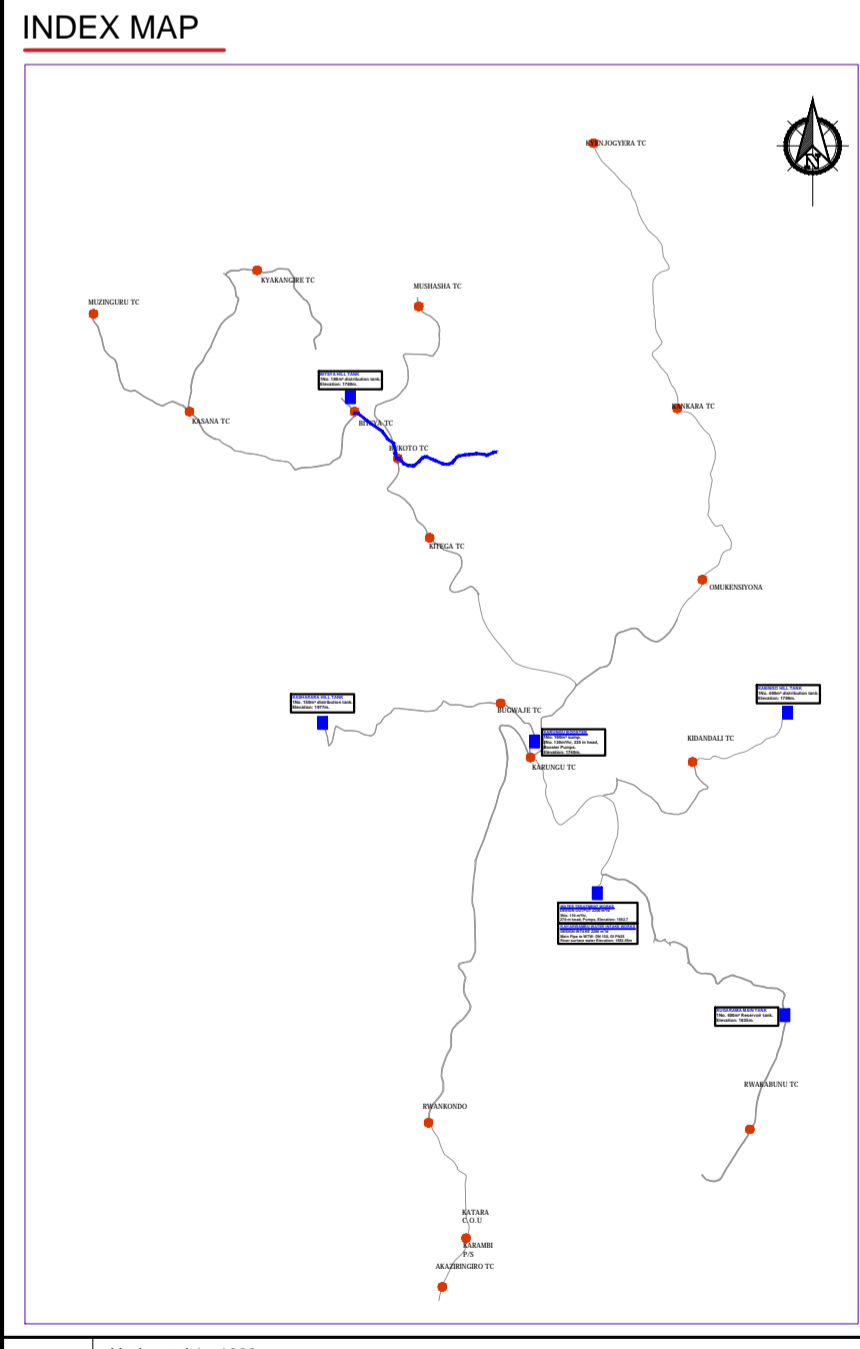
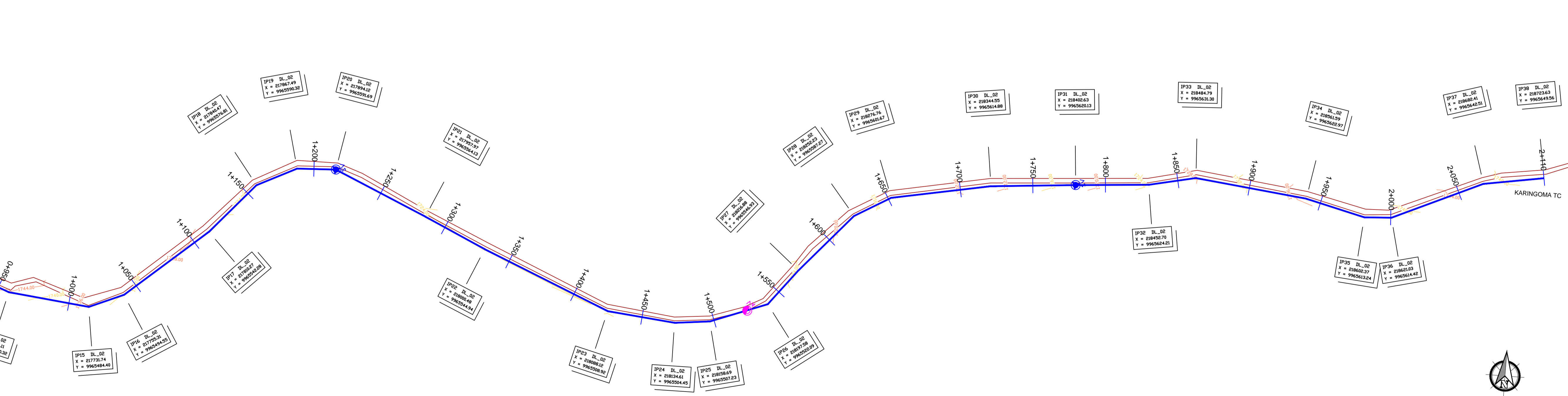
OD 50, PN 10, HDPE PIPE

OD 40, PN 10, HDPE PIPE

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

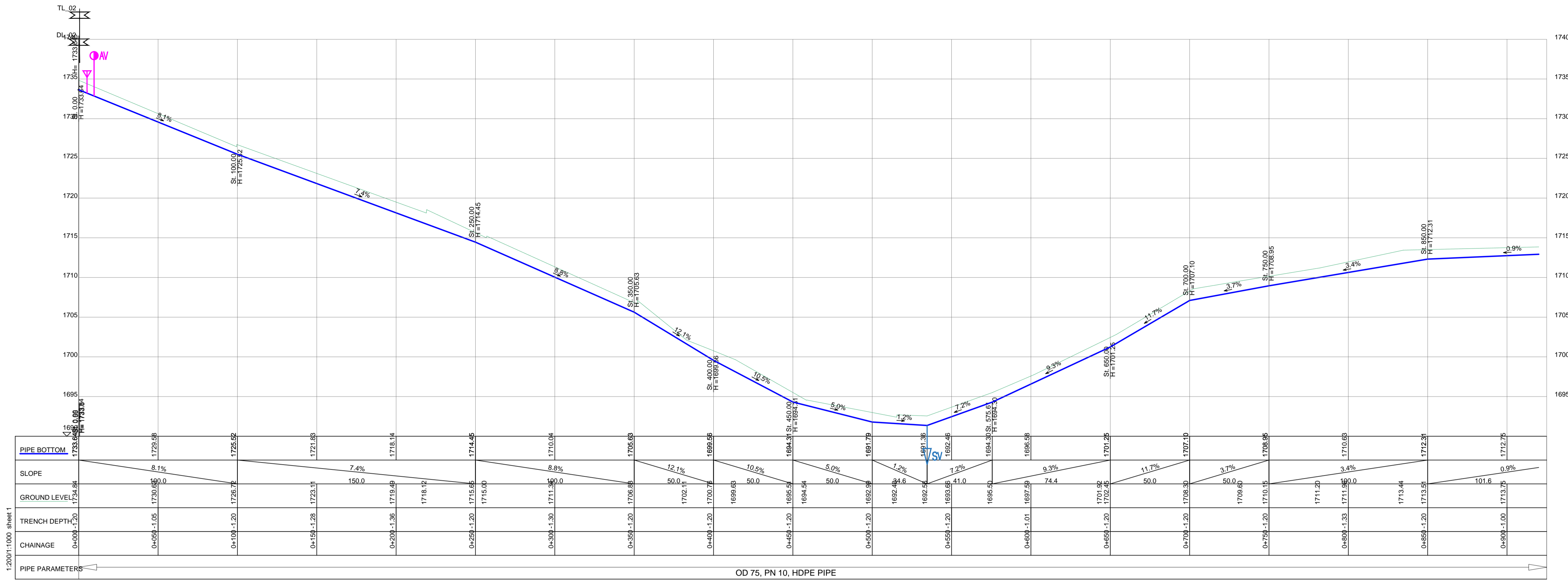
Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_02

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAISI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL02-01

Date: SEPT 2021



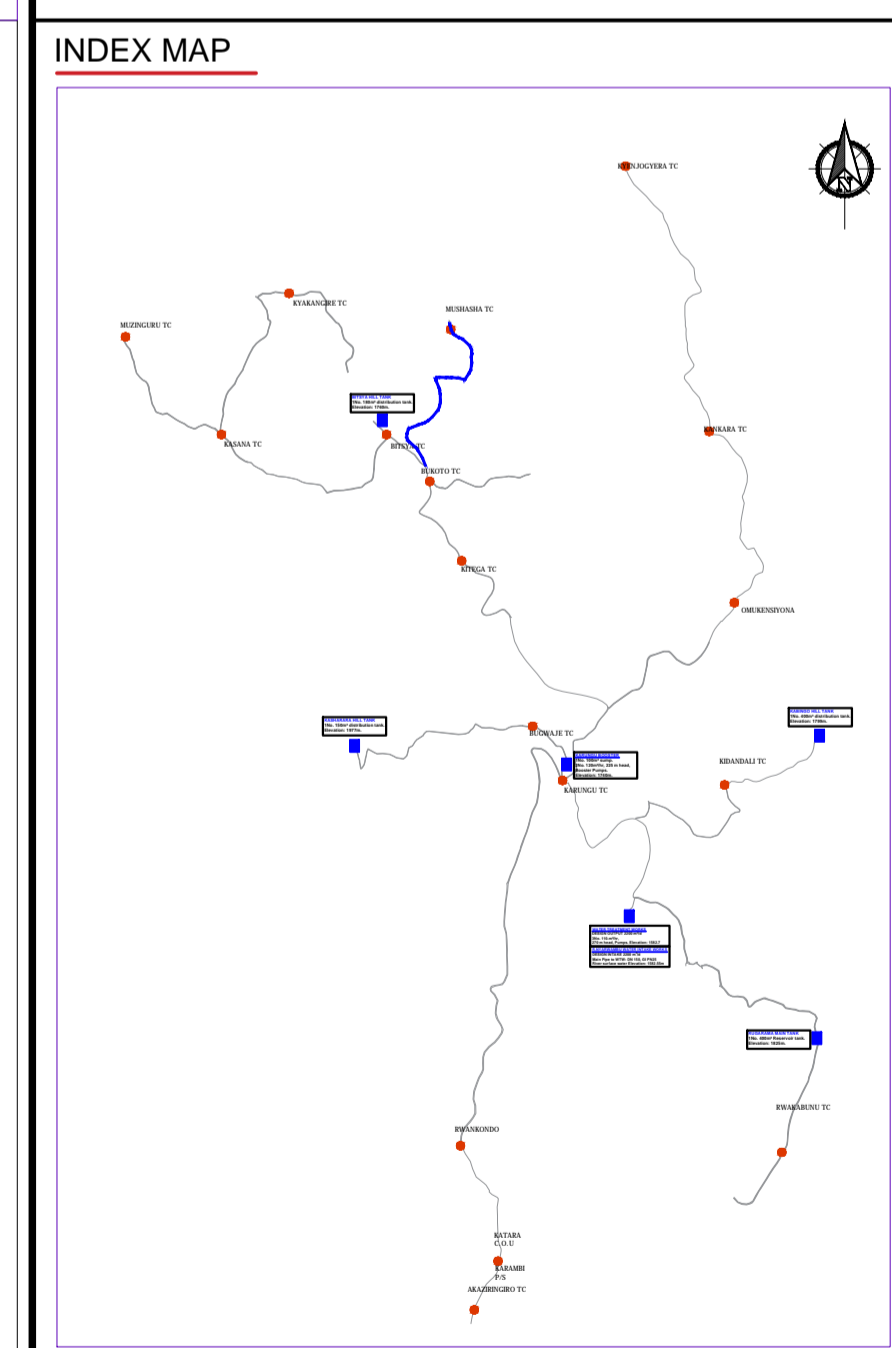
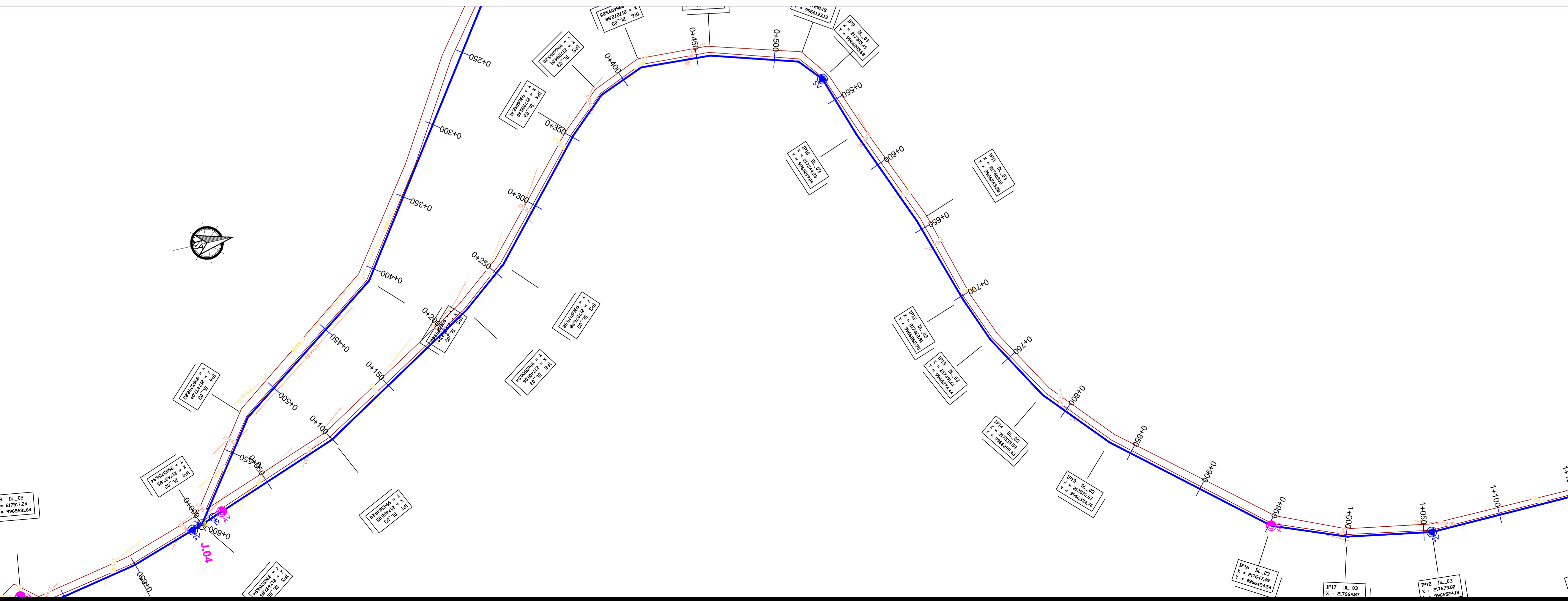
DISTRIBUTION LINE DL_03

OD 75, PN 10, HDPE PIPE

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE (On Profile View / On Plan View)
- SCOUR VALVE (On Profile View / On Plan View)
- ISOLATION VALVE (On Profile View / On Plan View)
- ANTI-SURGE VALVE (On Profile View / On Plan View)
- PIPE T-JUNCTION (On Profile View)
- PIPE CROSS-JUNCTION (On Profile View)

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

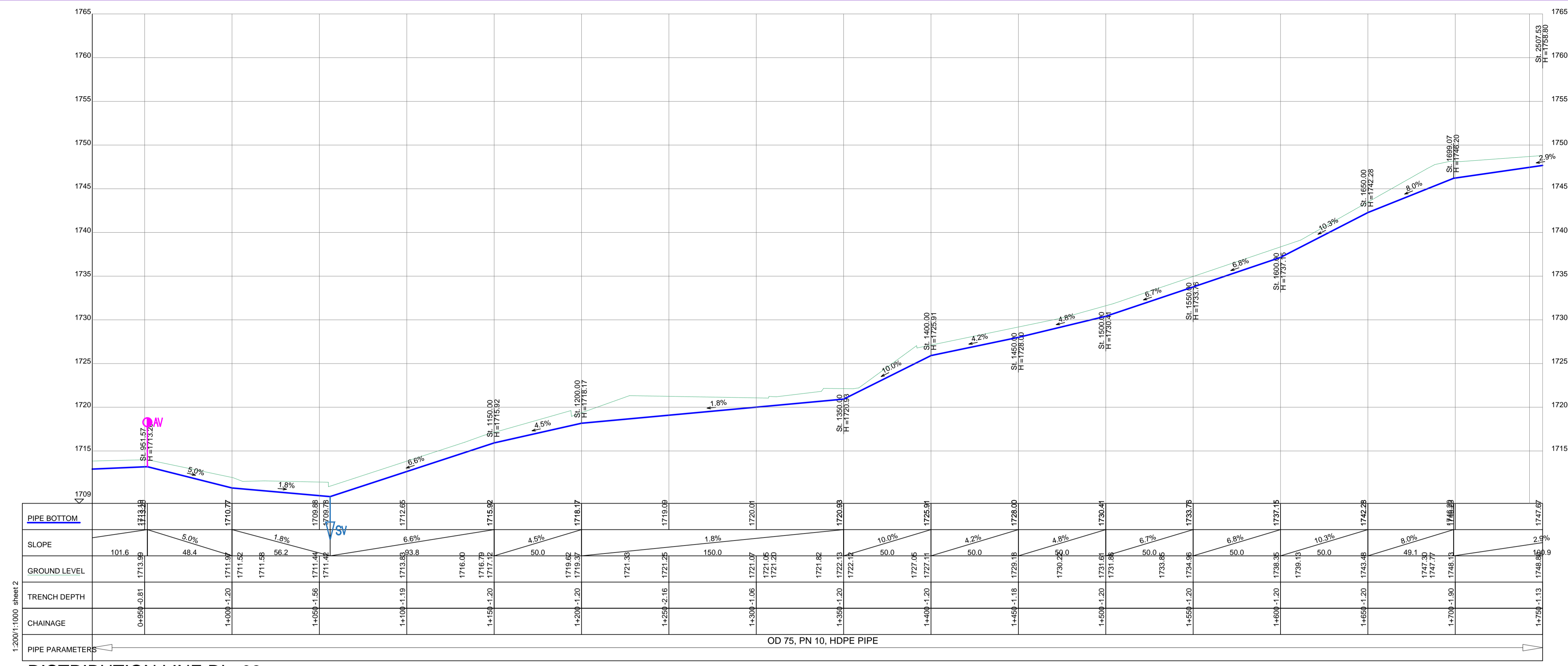
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

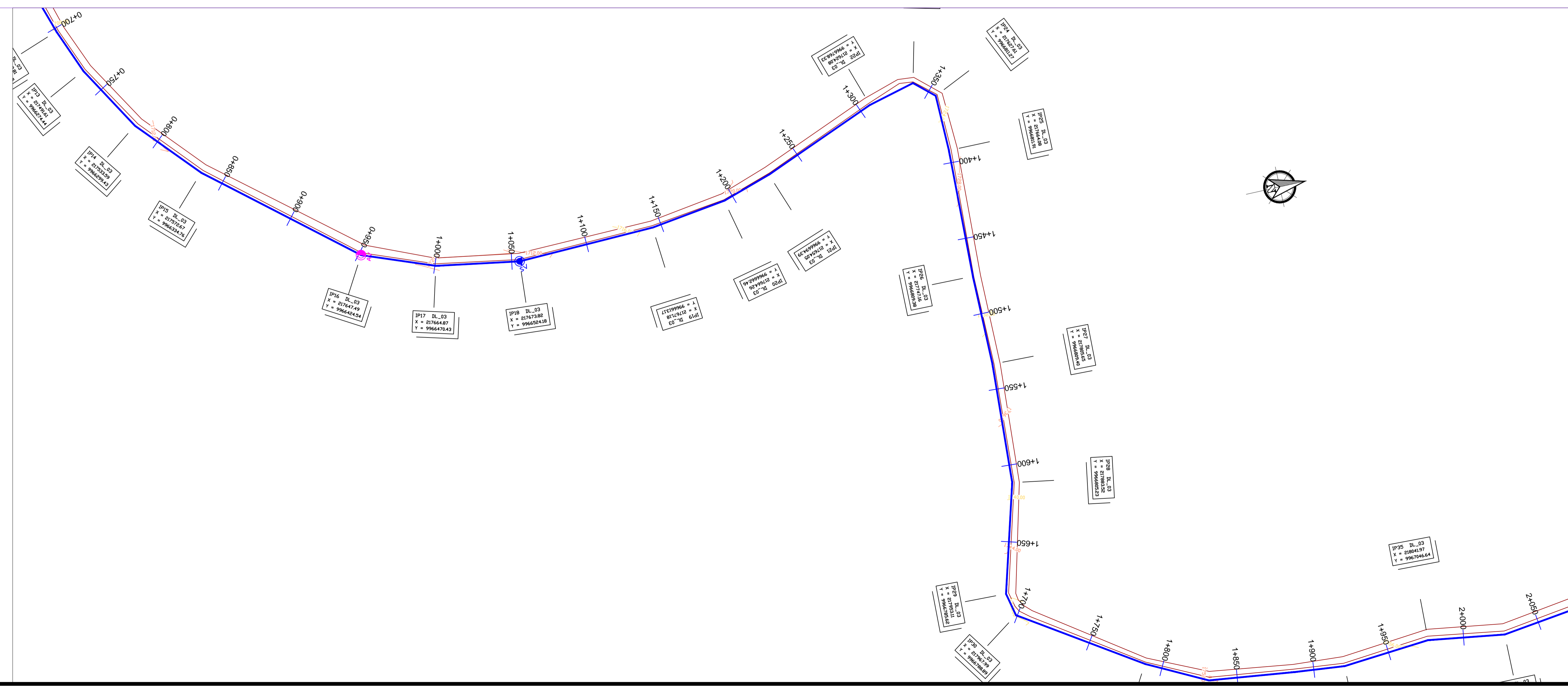
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_03**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65852,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL03-01 Date: SEPT 2021



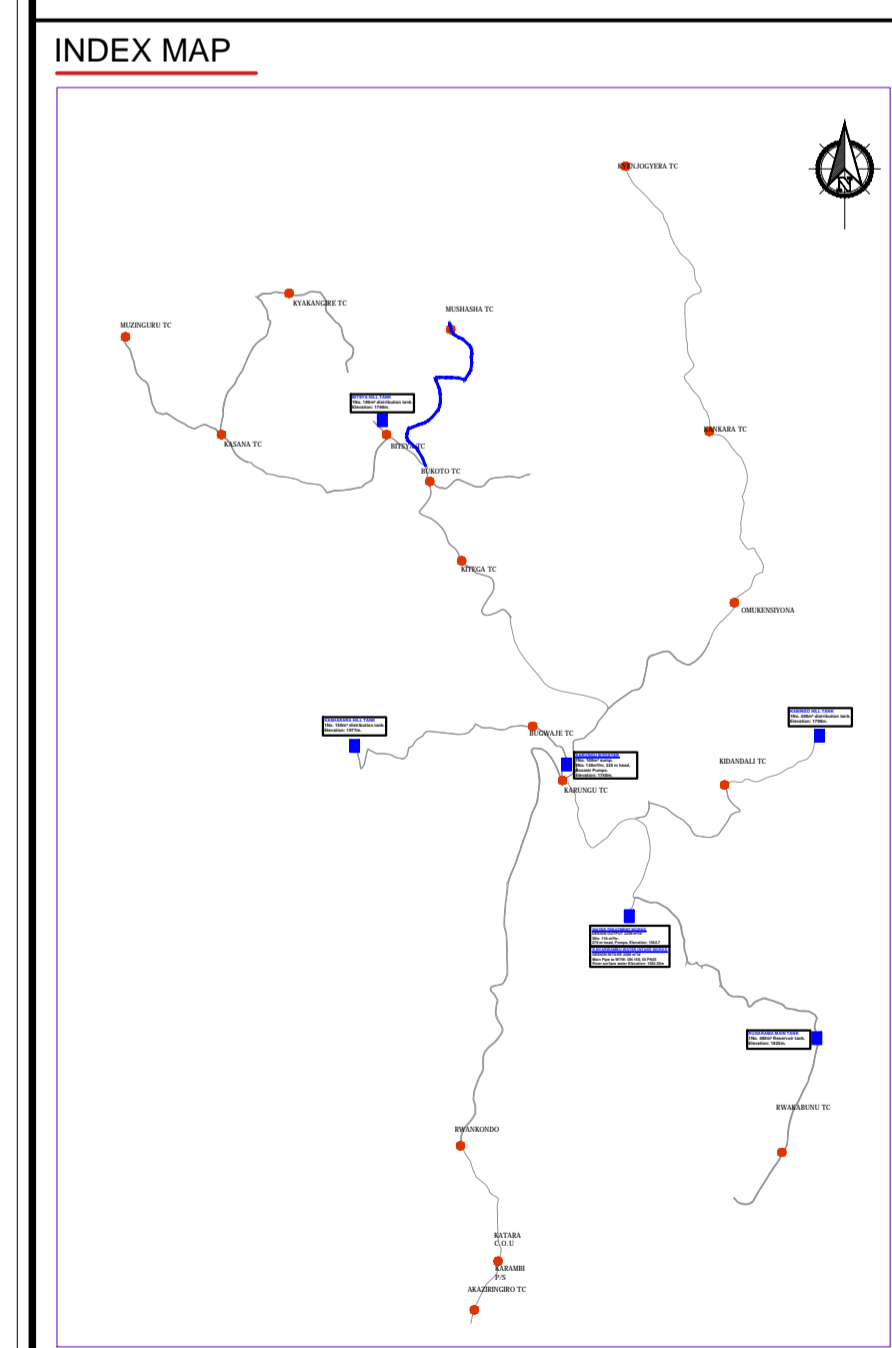
DISTRIBUTION LINE DL_03



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
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- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

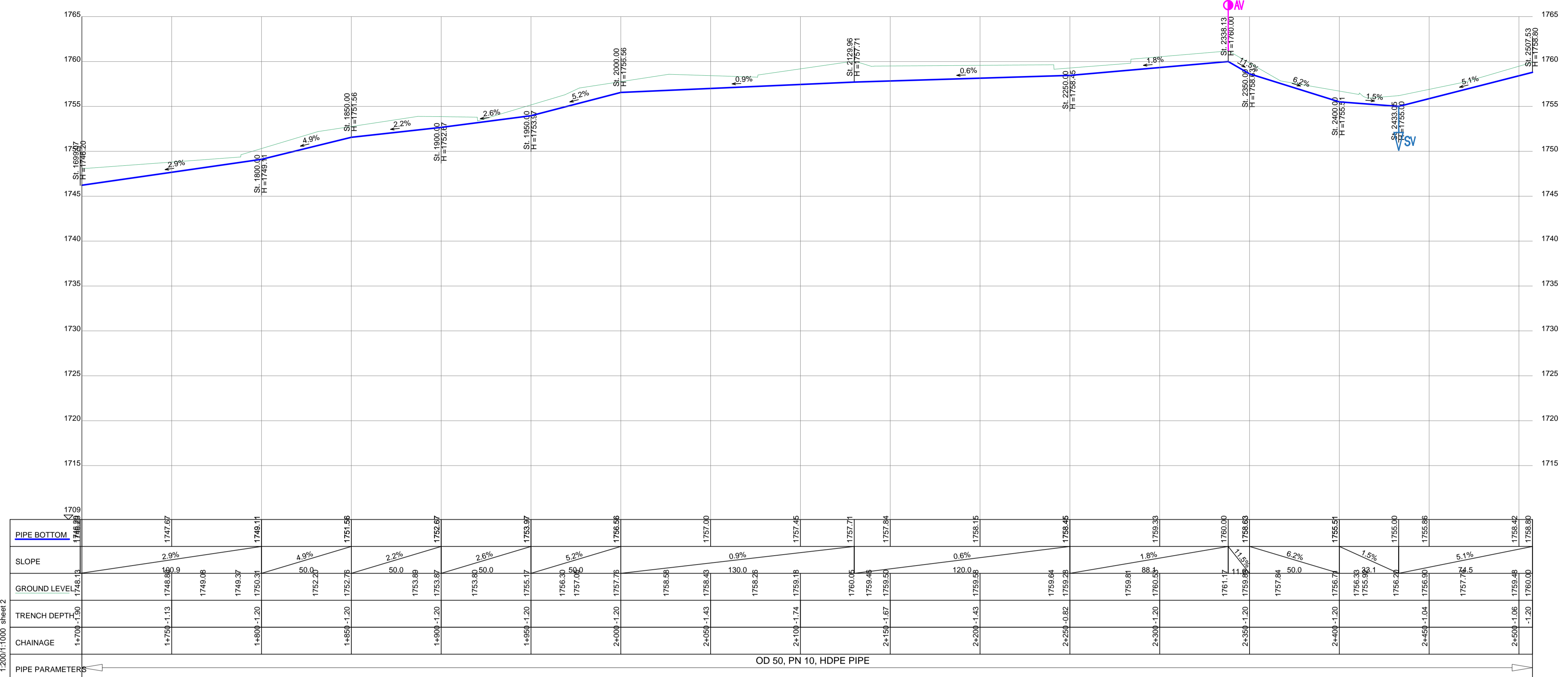
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

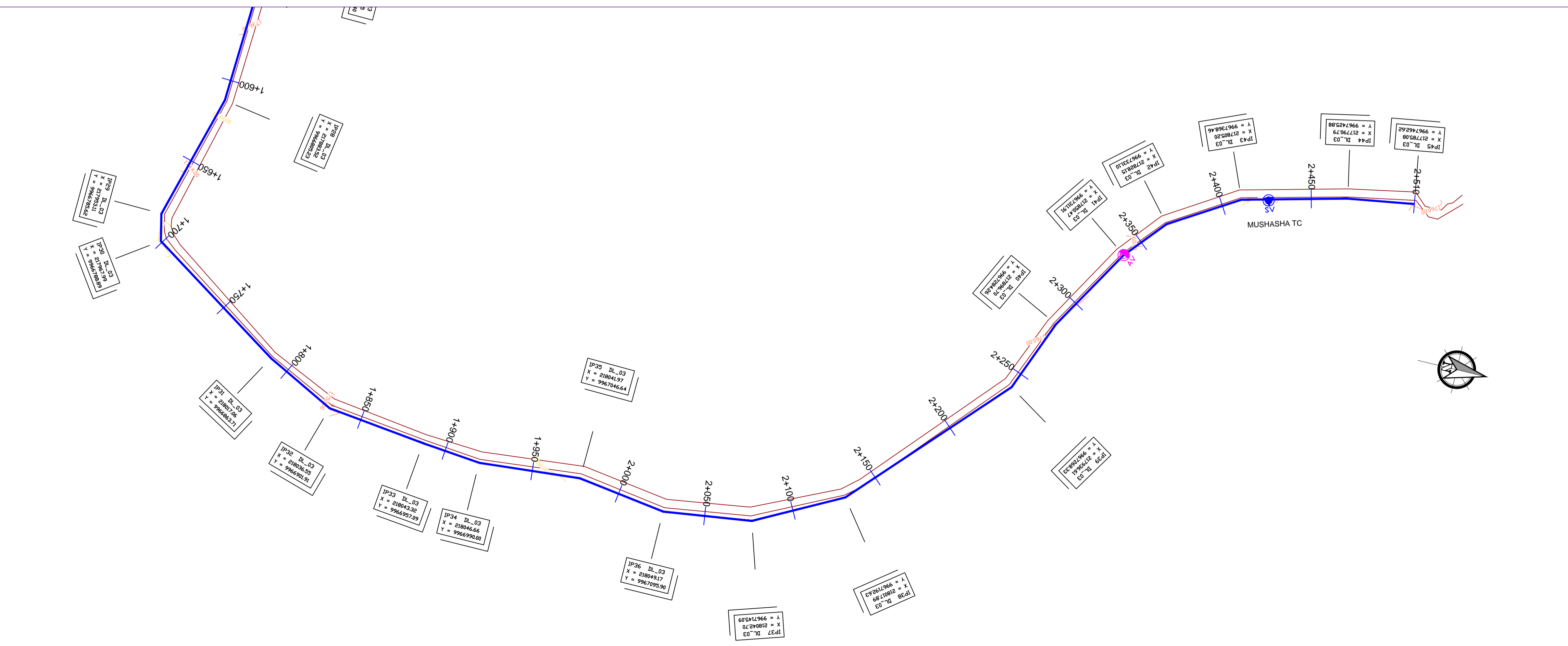
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_03**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAAL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL03-02 Date: SEPT 2021



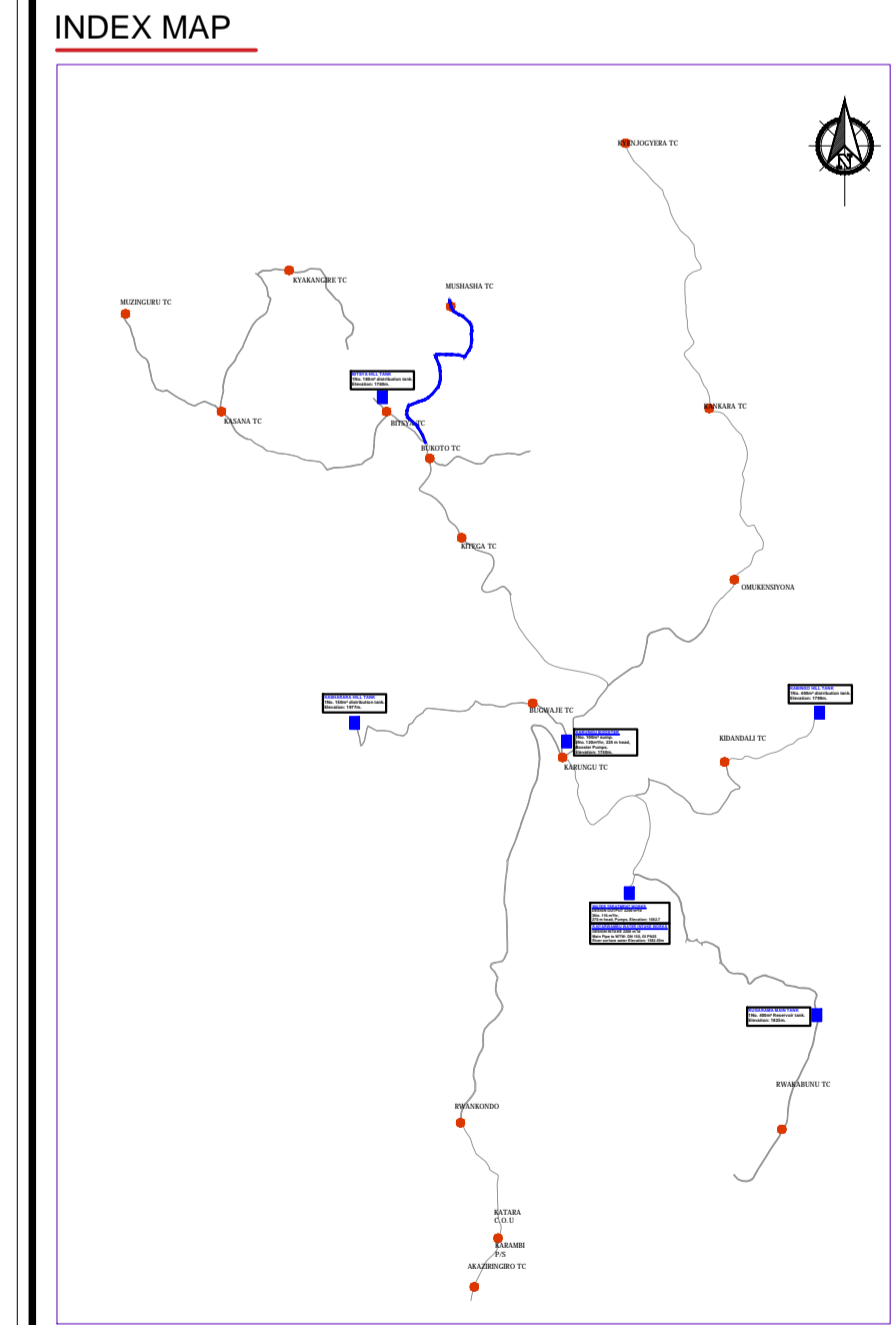
DISTRIBUTION LINE DL_03



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
- NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

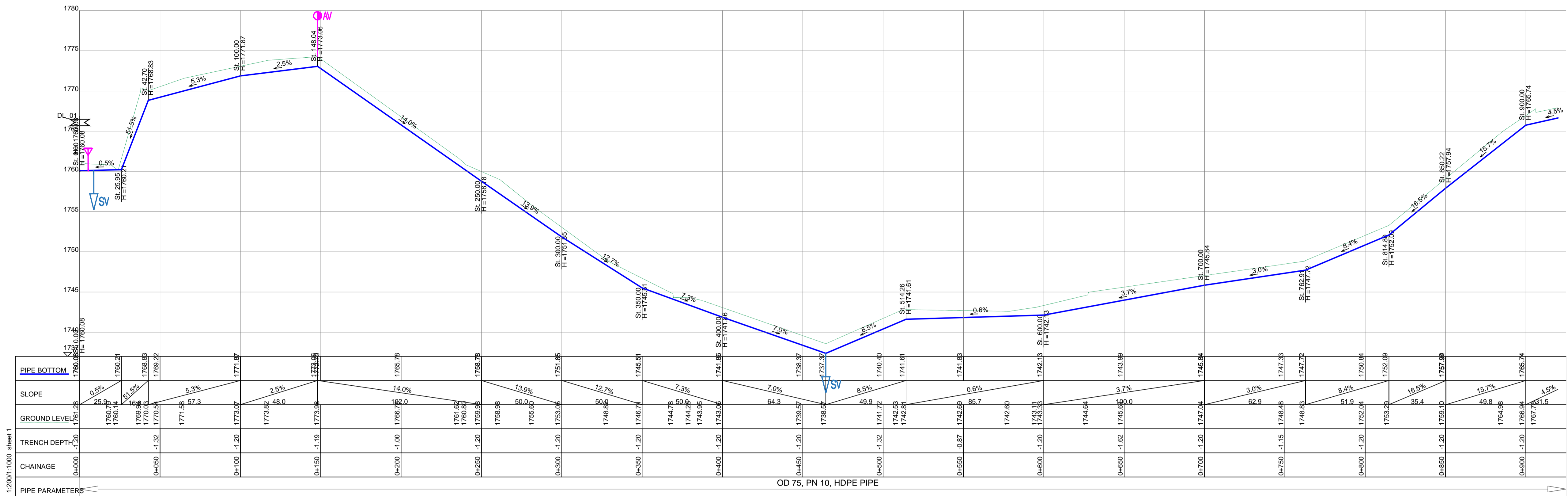
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_03**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL03-03 Date: SEPT 2021



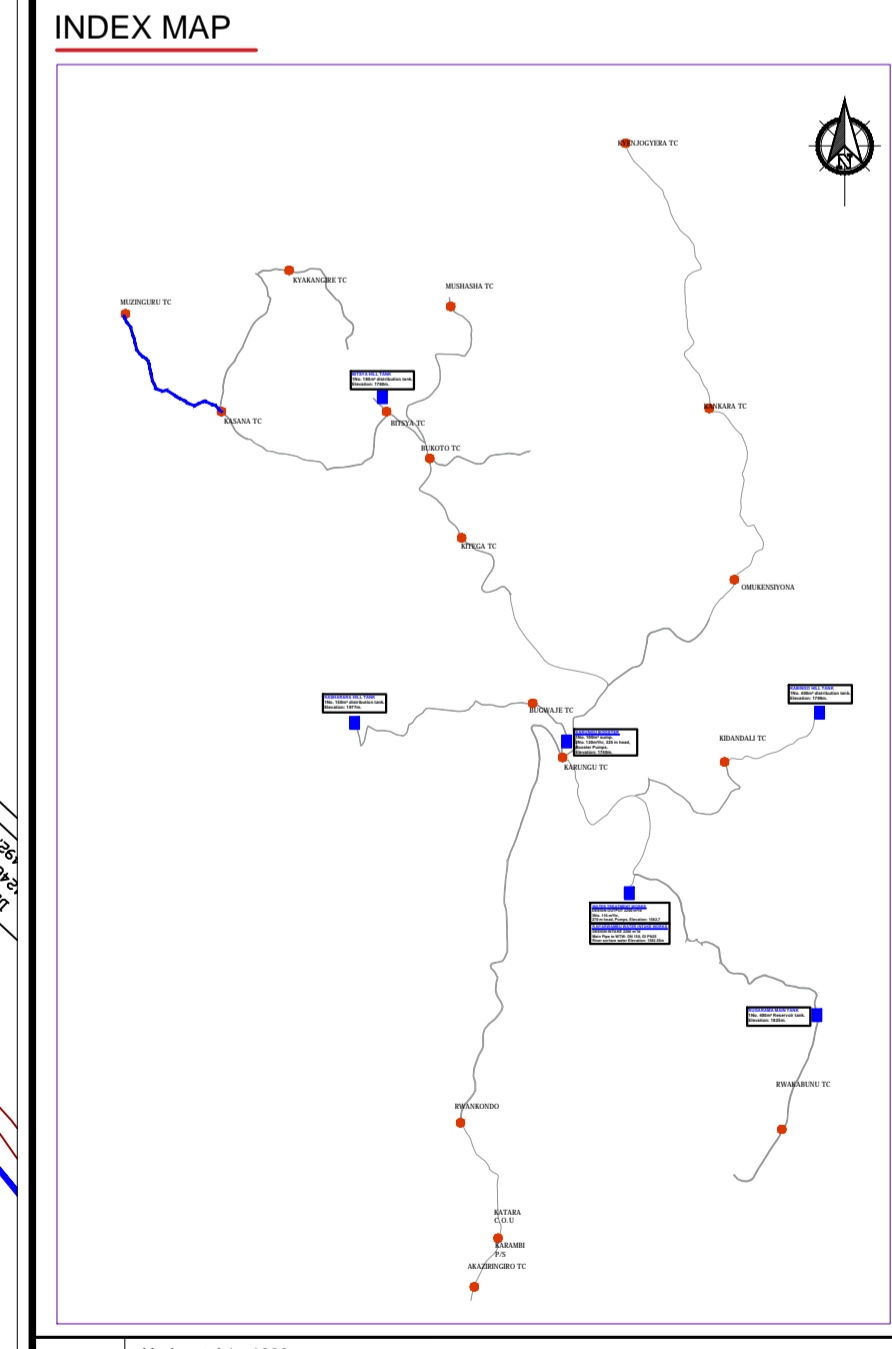
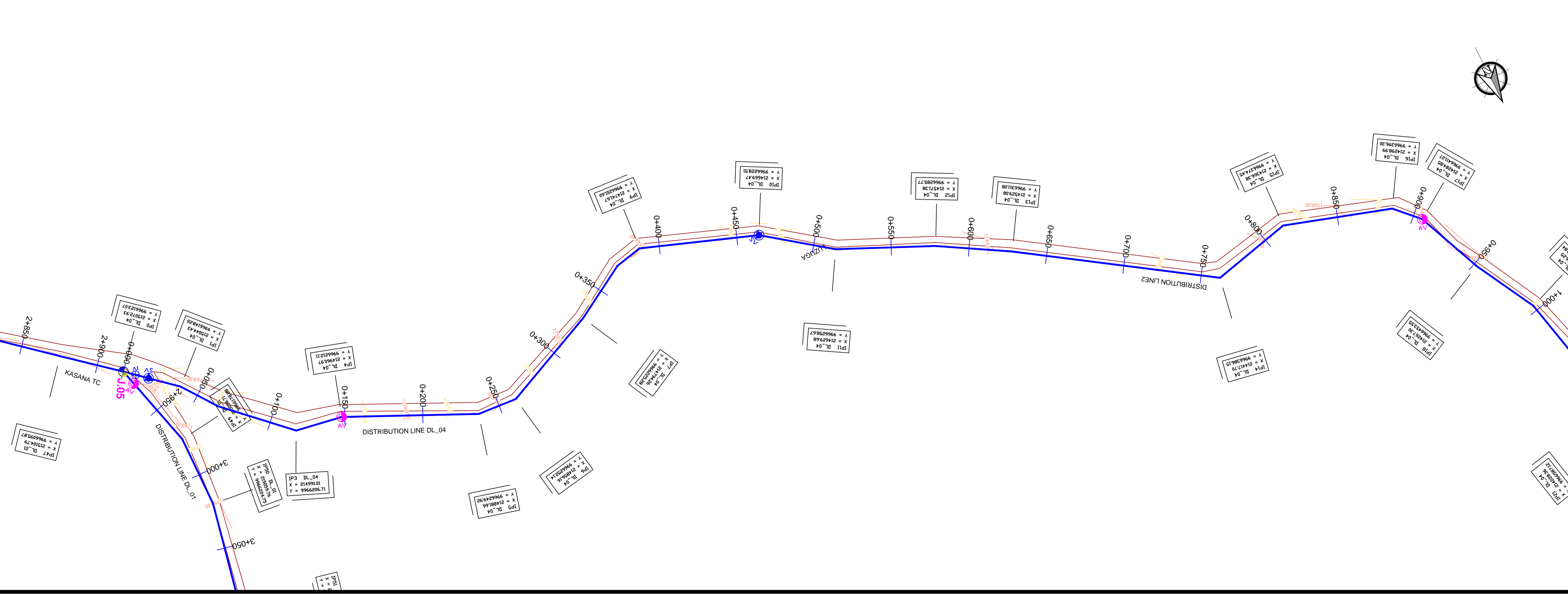
DISTRIBUTION LINE DL_04

1:200/1:1000 sheet 1

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
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Scale: Horizontal 1 : 1000
Vertical 1 : 100

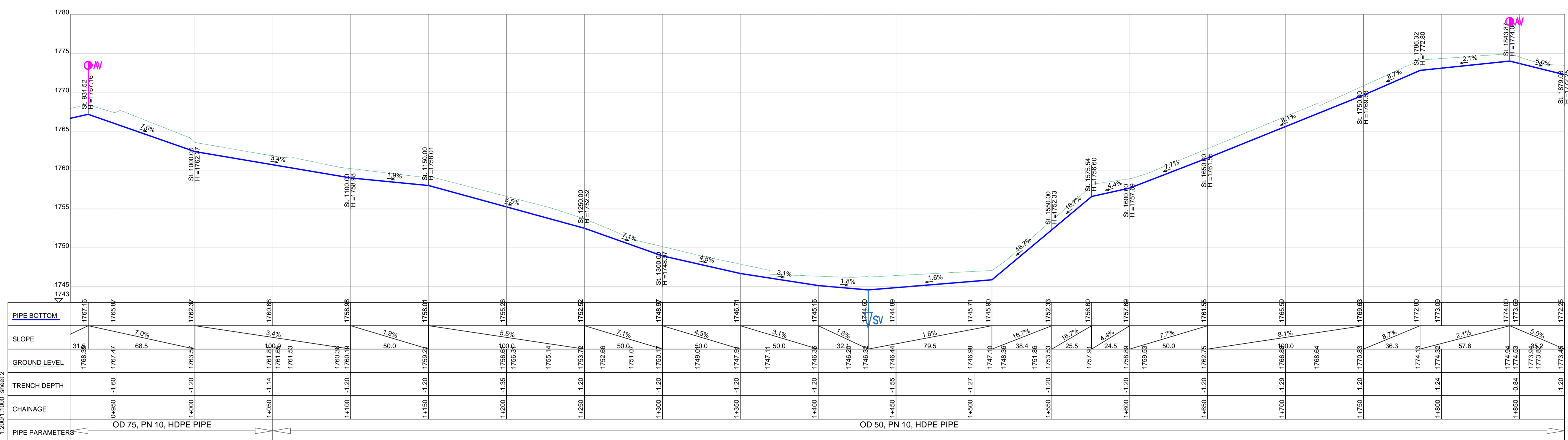
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

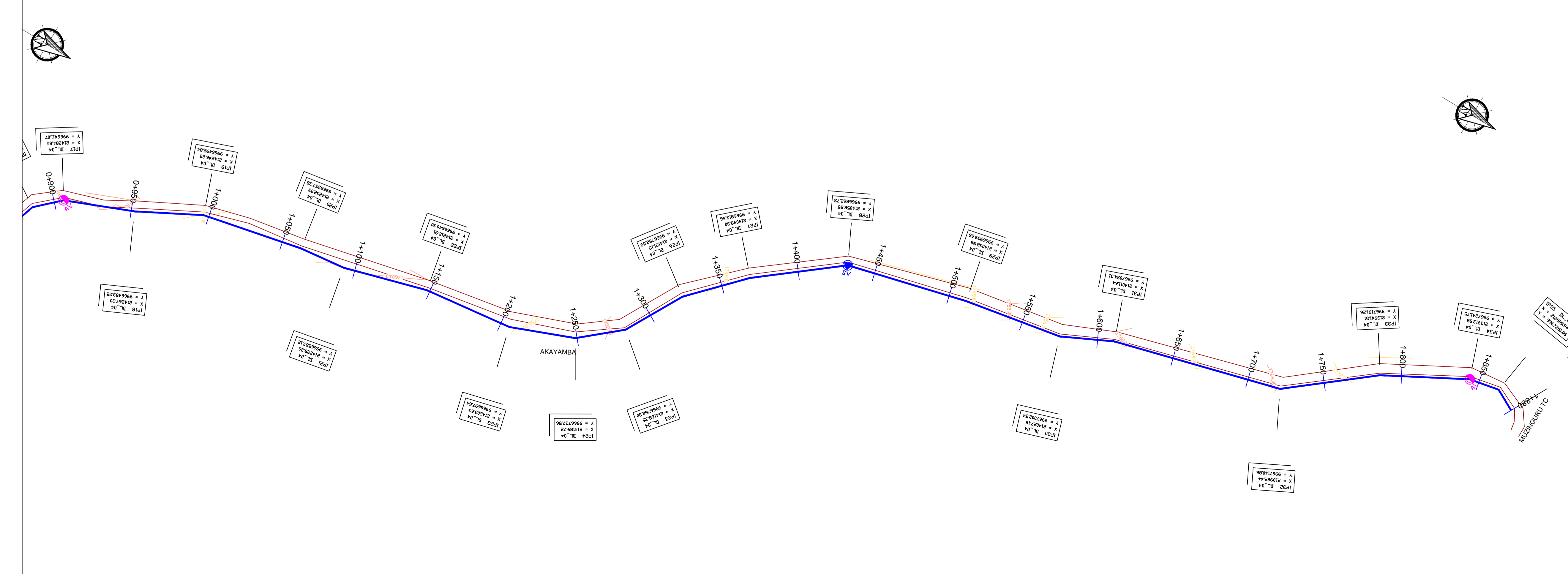
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_04

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65823,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL04-01 Date: SEPT 2021



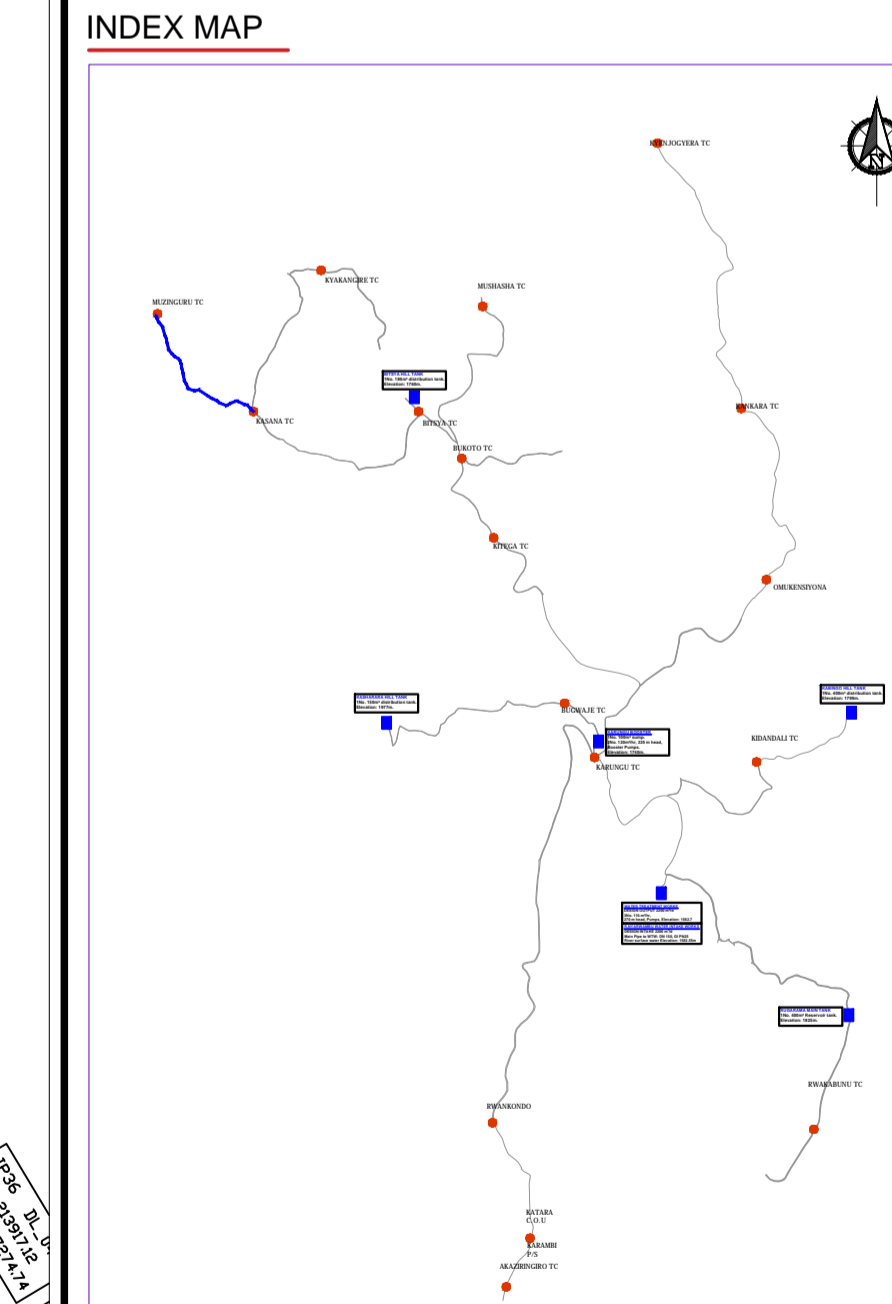
DISTRIBUTION LINE DL_04



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
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- ANTI-SURGE VALVE On Plan View
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Scale: Horizontal 1 : 100
Vertical 1 : 100

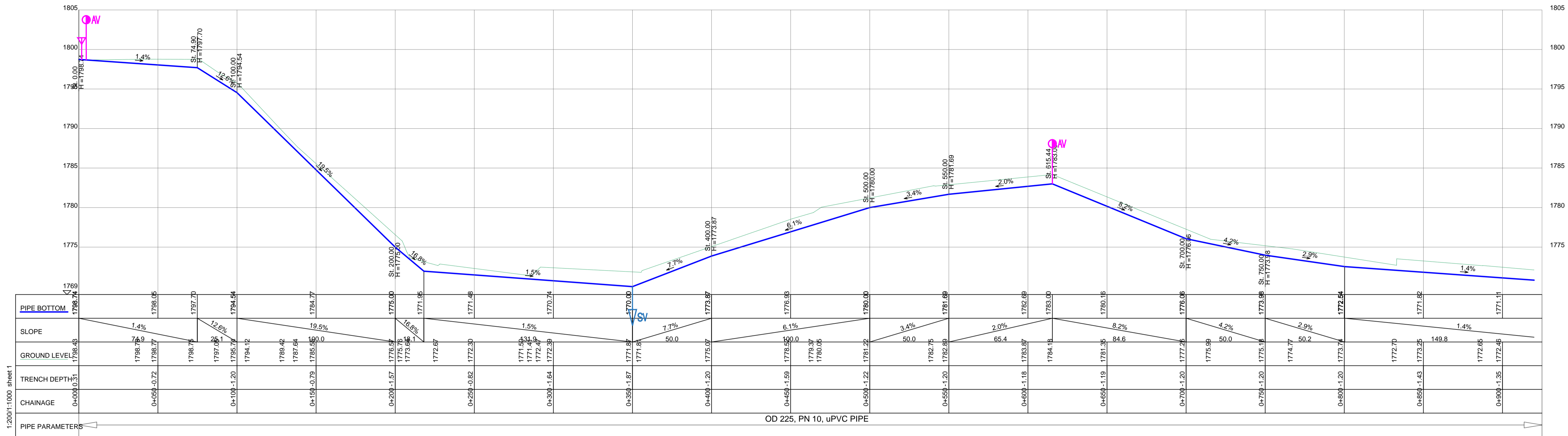
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_04

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL04-02 Date: SEPT 2021



DISTRIBUTION LINE DL_05

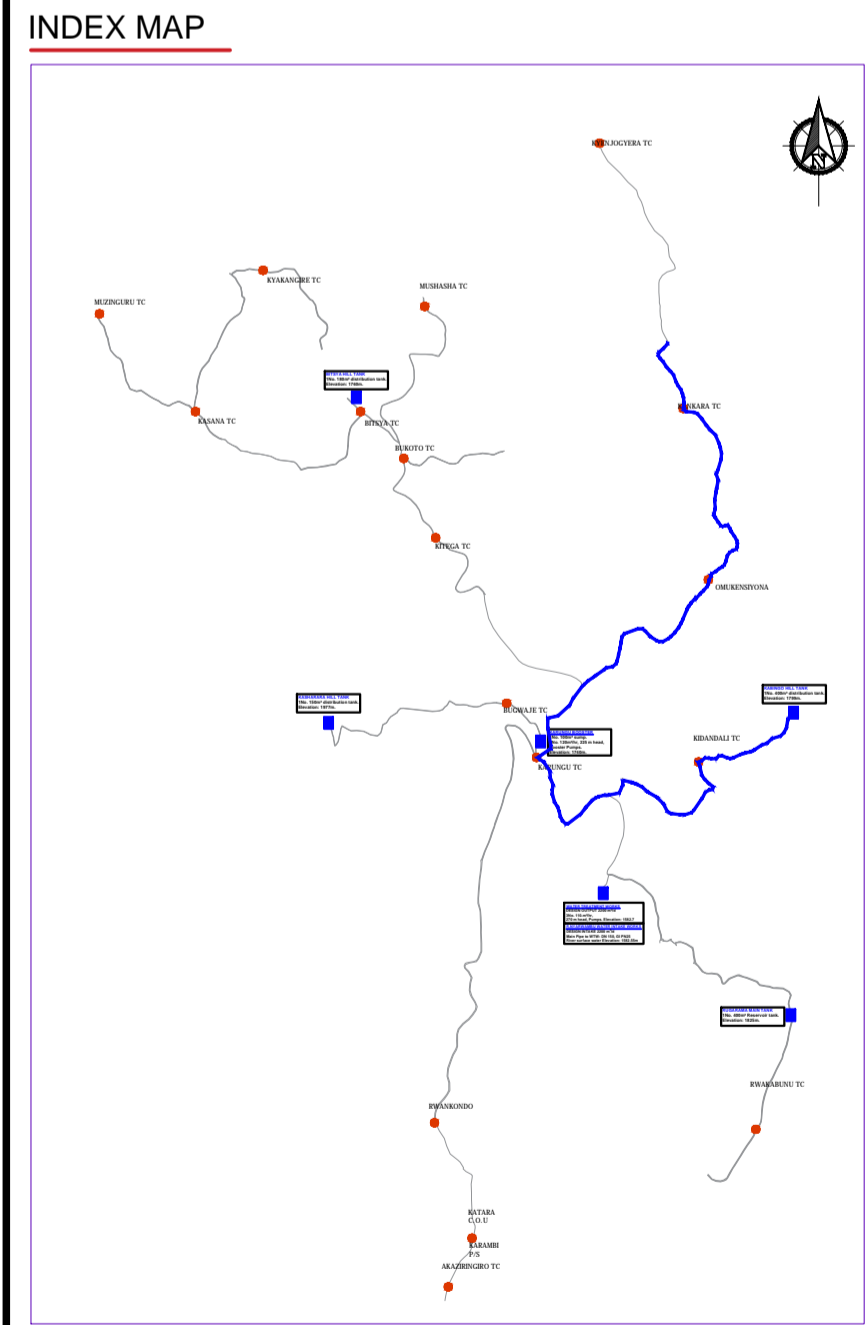
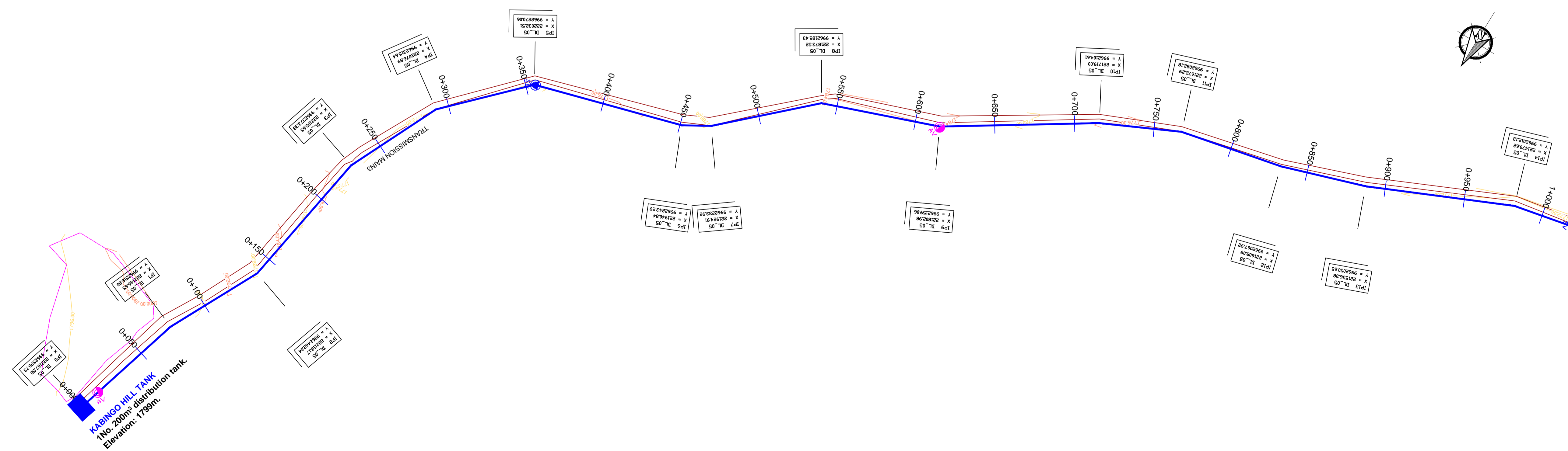
LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
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- ISOLATION VALVE On Plan View
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1:200/1:1000 sheet 1

OD 225, PN 10, uPVC PIPE



Scale: Horizontal 1 : 1000
Vertical 1 : 100

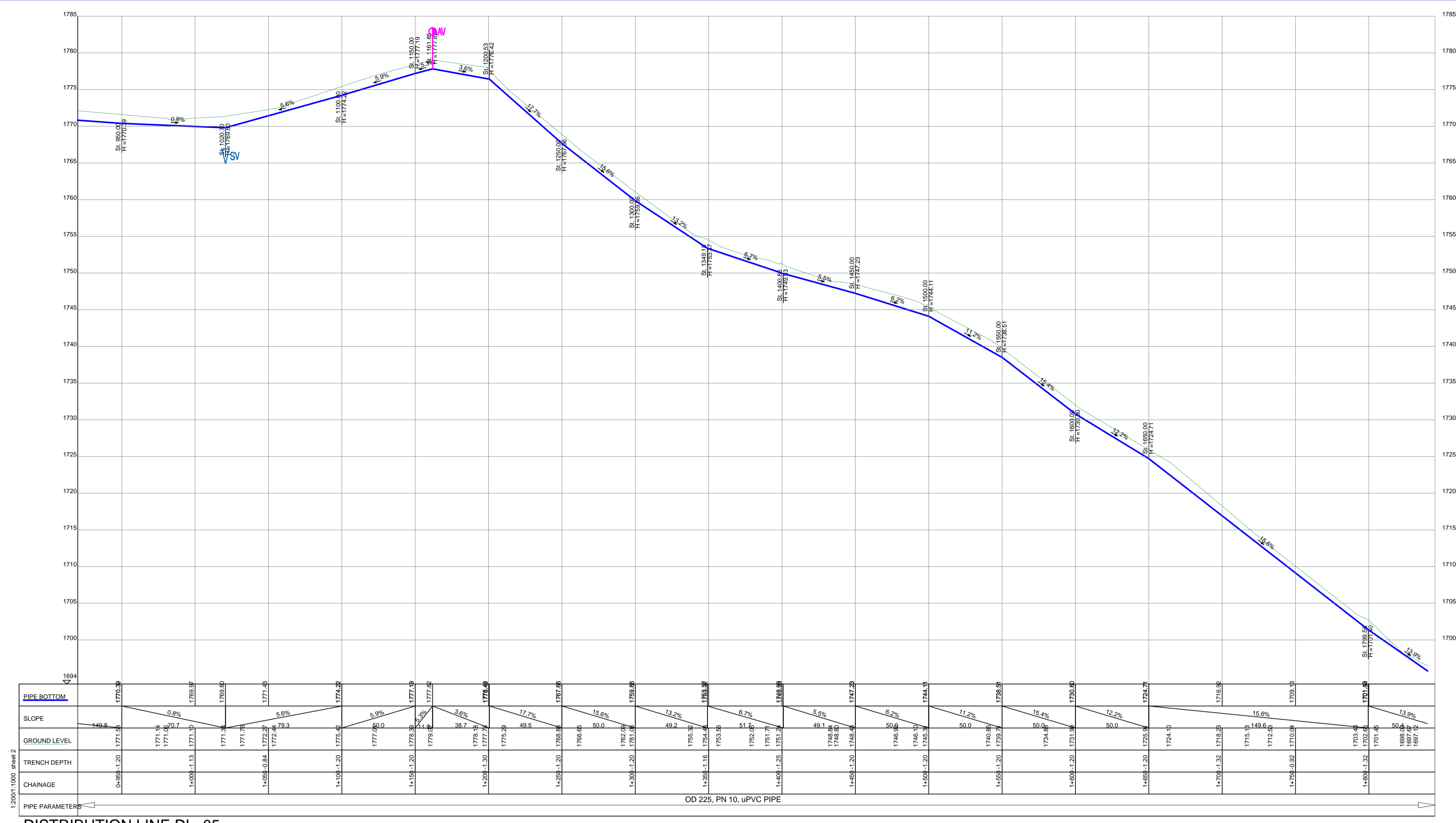
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

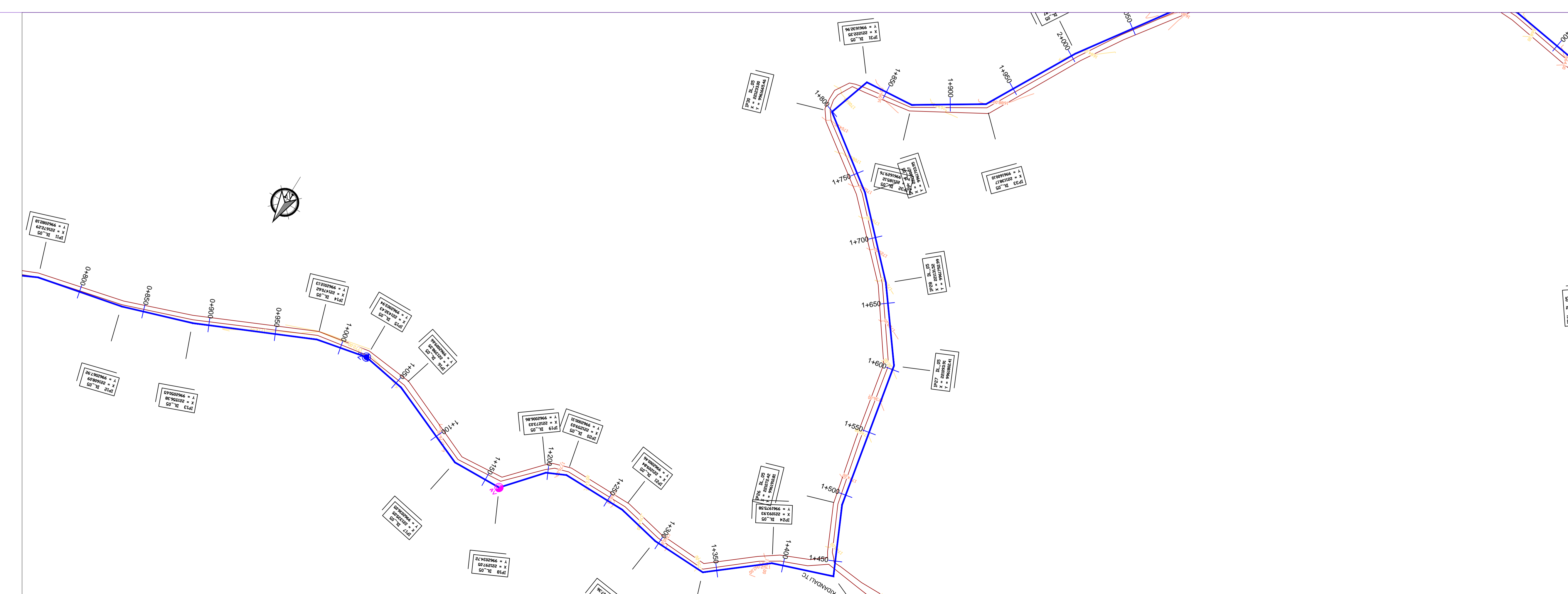
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-01 Date: /SEPT 2021



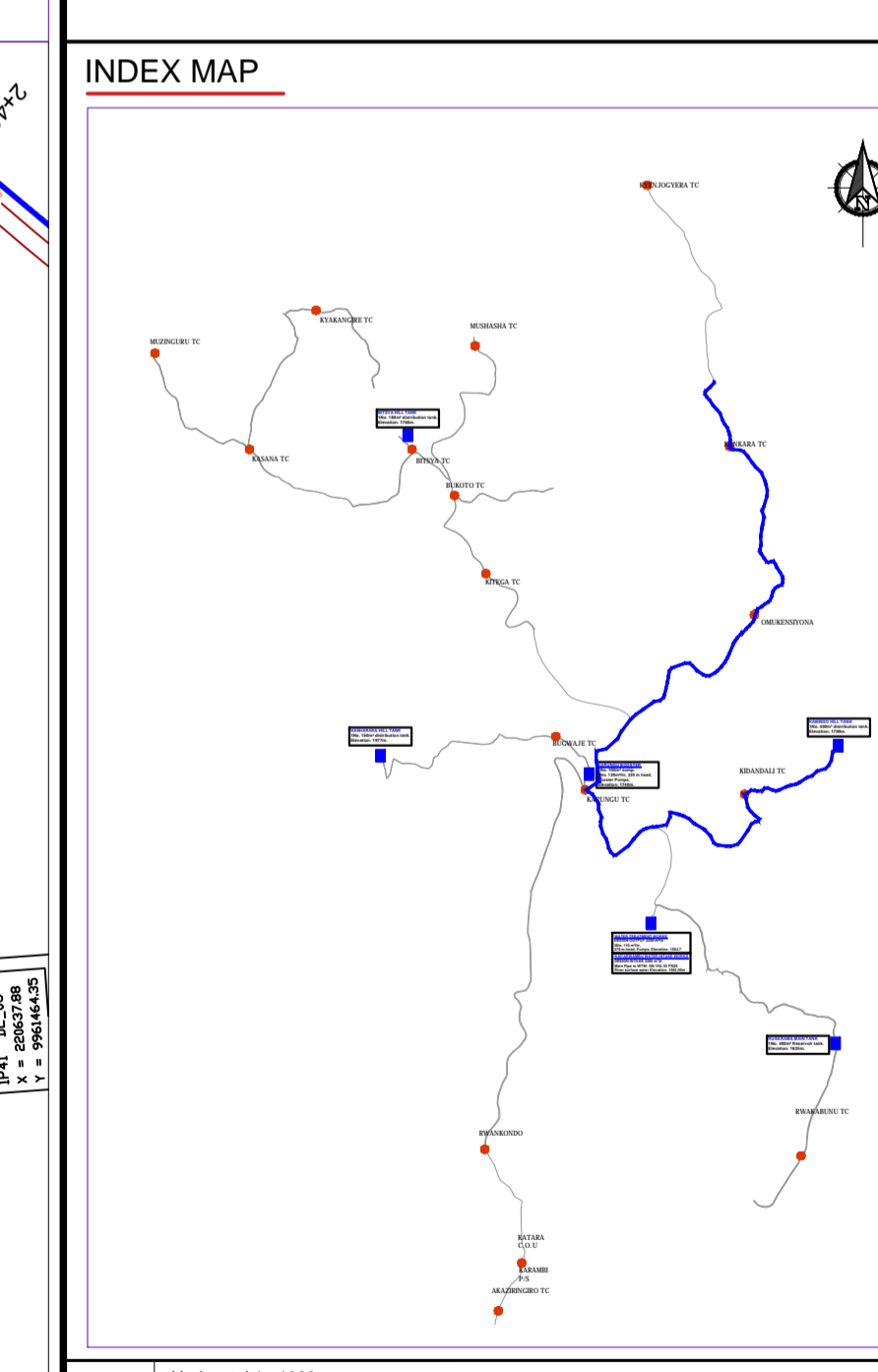
DISTRIBUTION LINE DL_05



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
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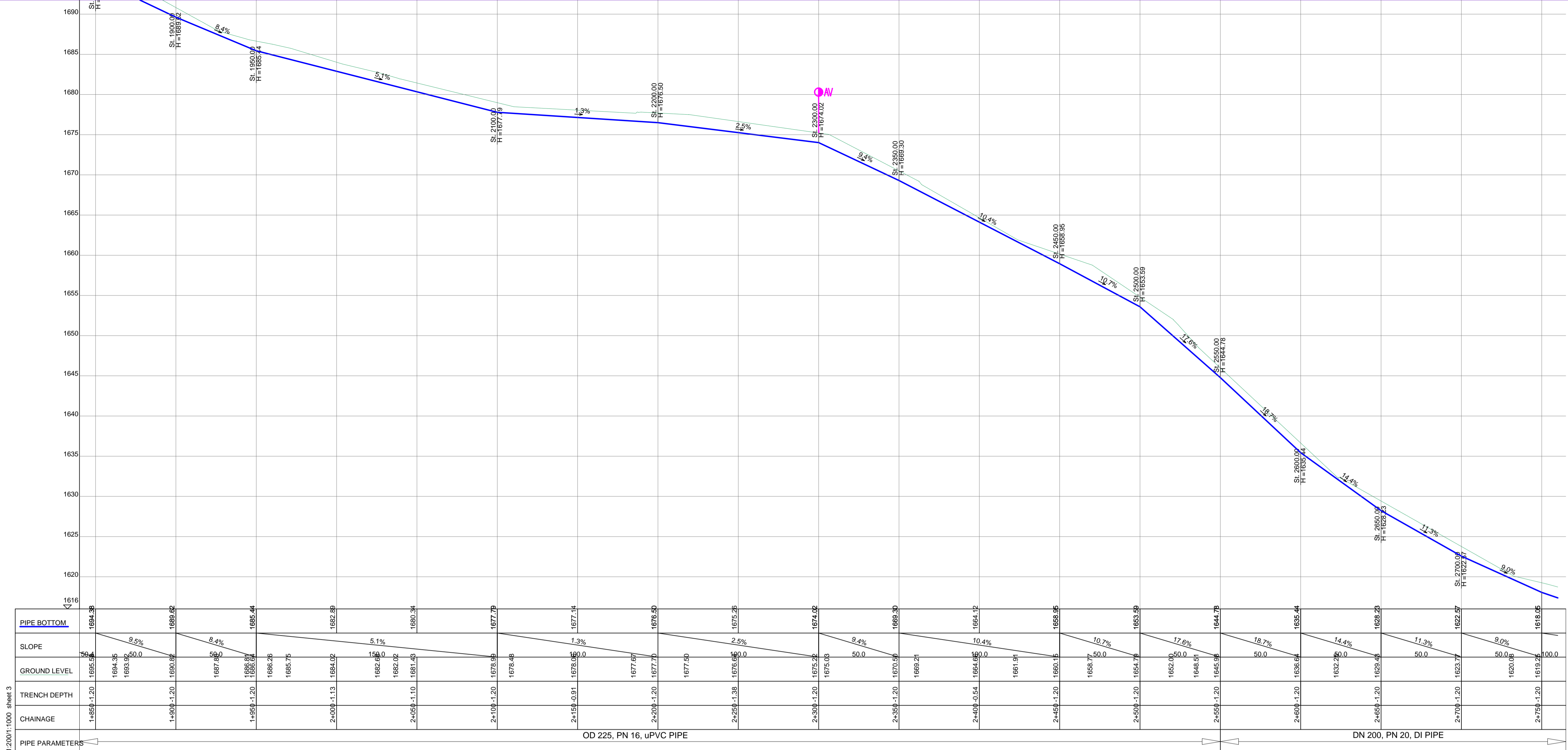
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

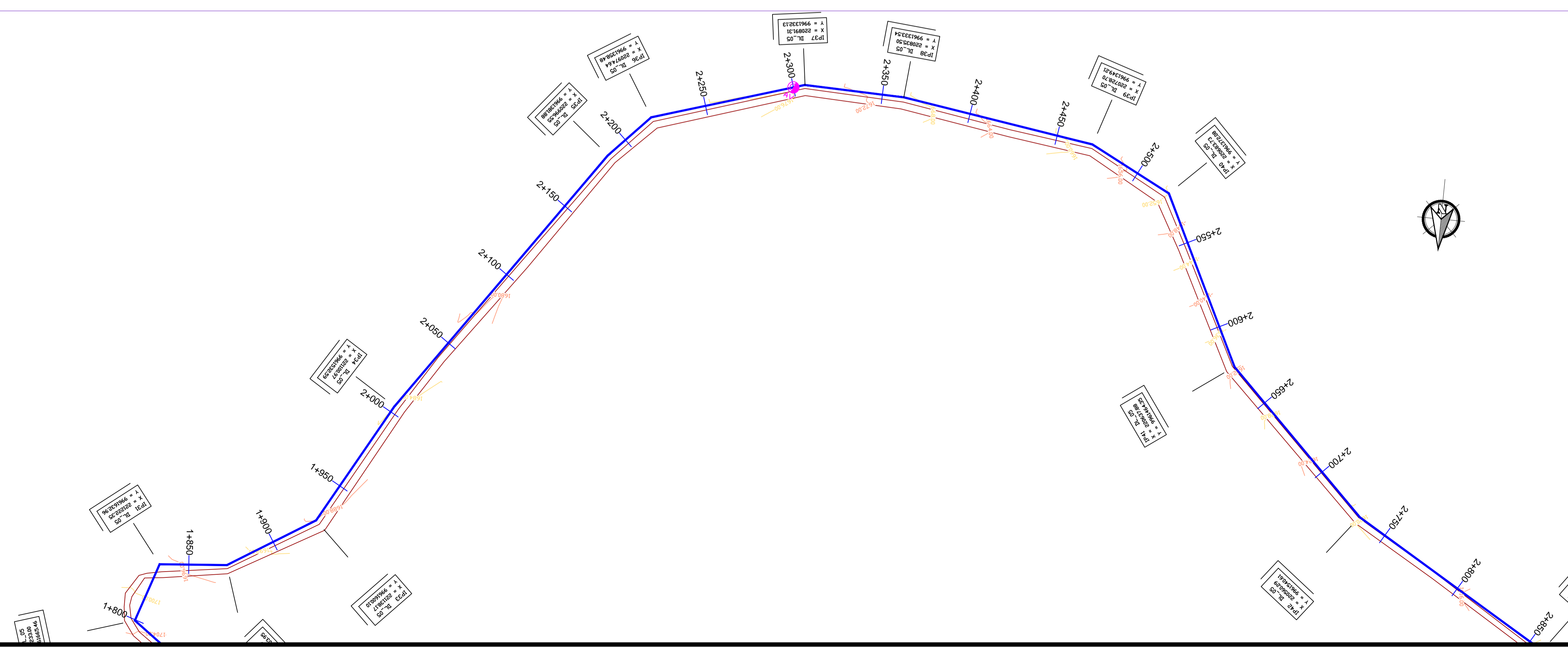
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_05

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-02 Date: SEPT 2021



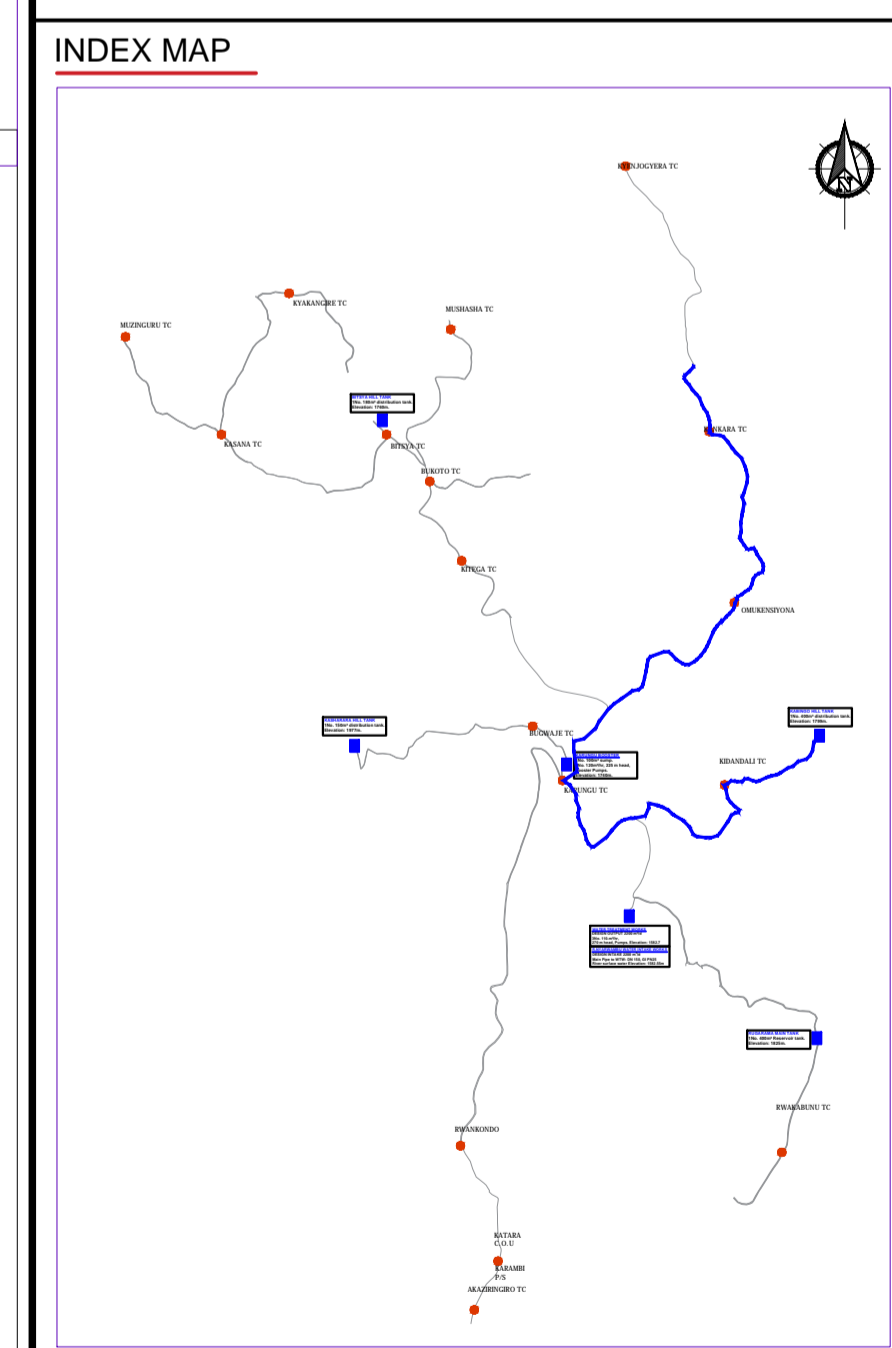
DISTRIBUTION LINE DL_05



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
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Scale: Horizontal 1 : 1000
Vertical 1 : 100

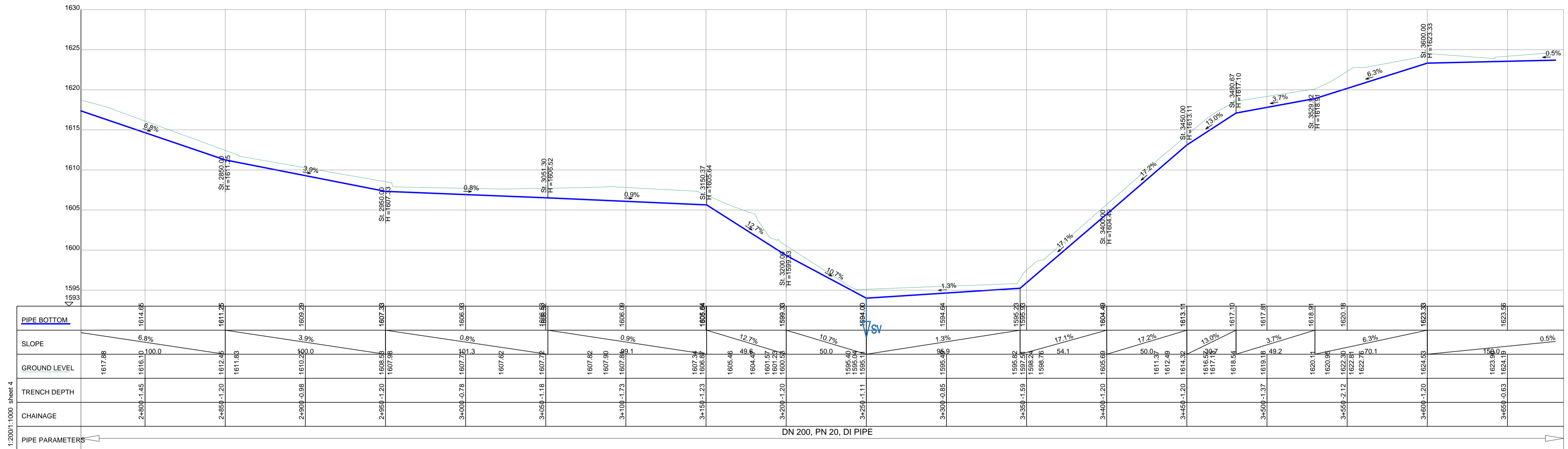
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

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PLOT 2, BANDALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-03 Date: SEPT 2021

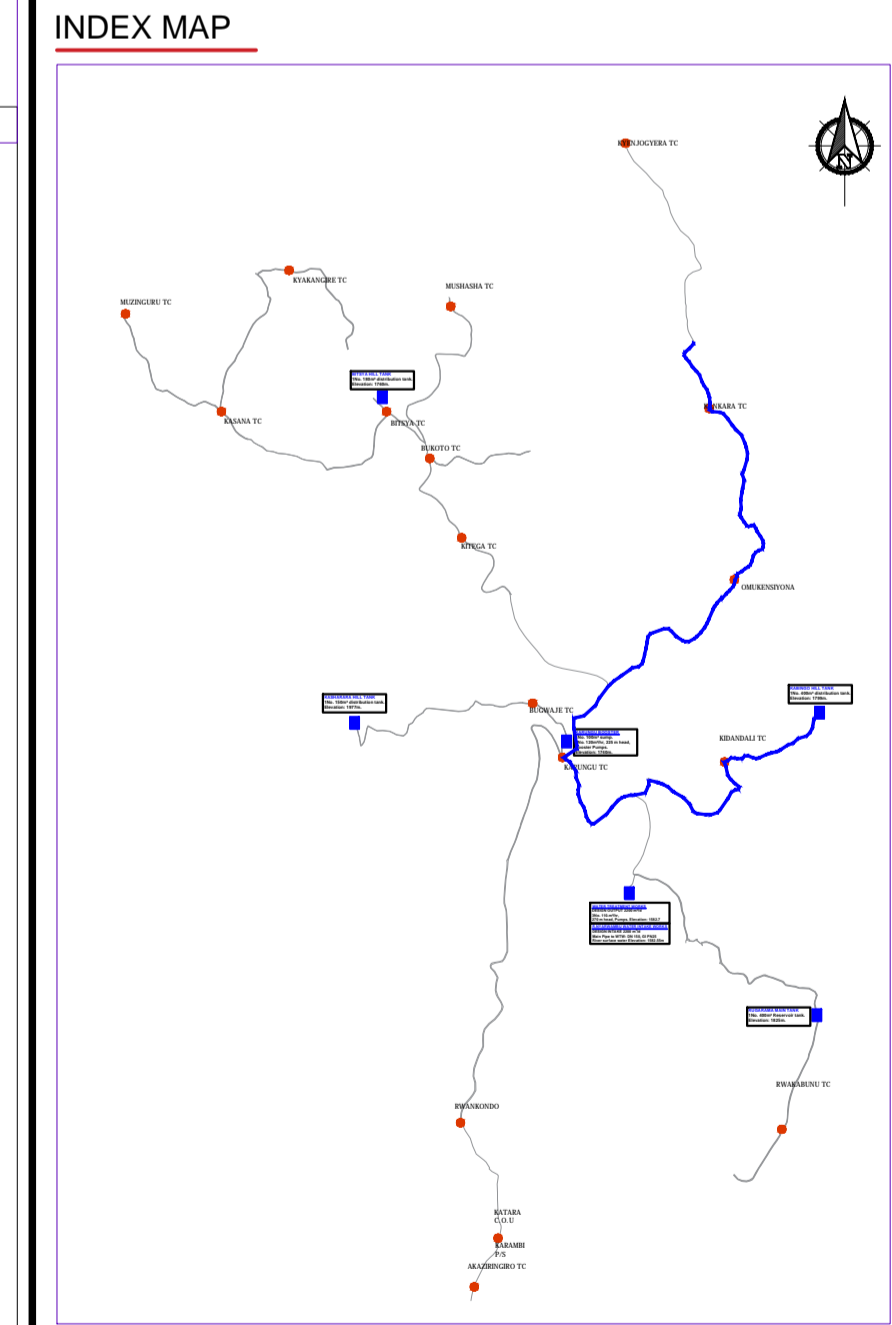


DISTRIBUTION LINE DL_05

LEGEND

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- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
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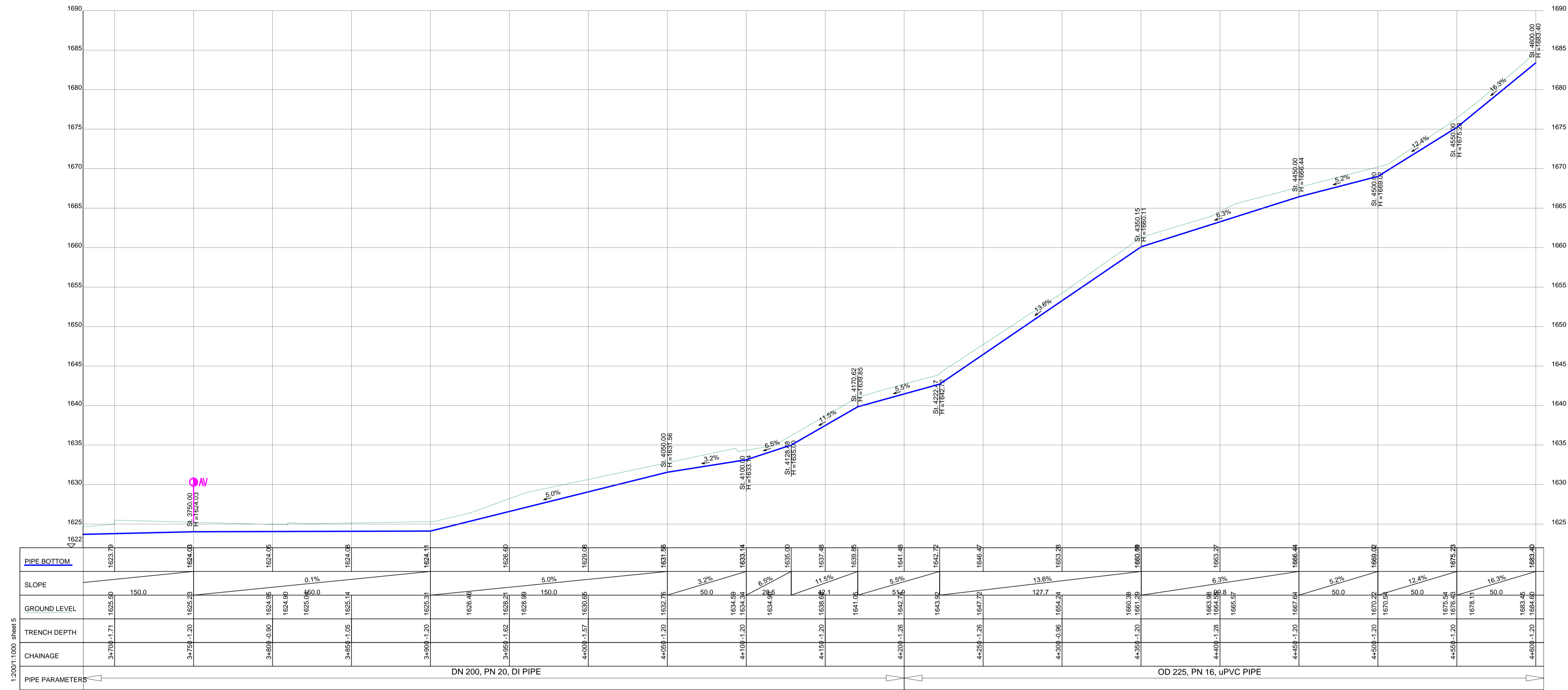
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

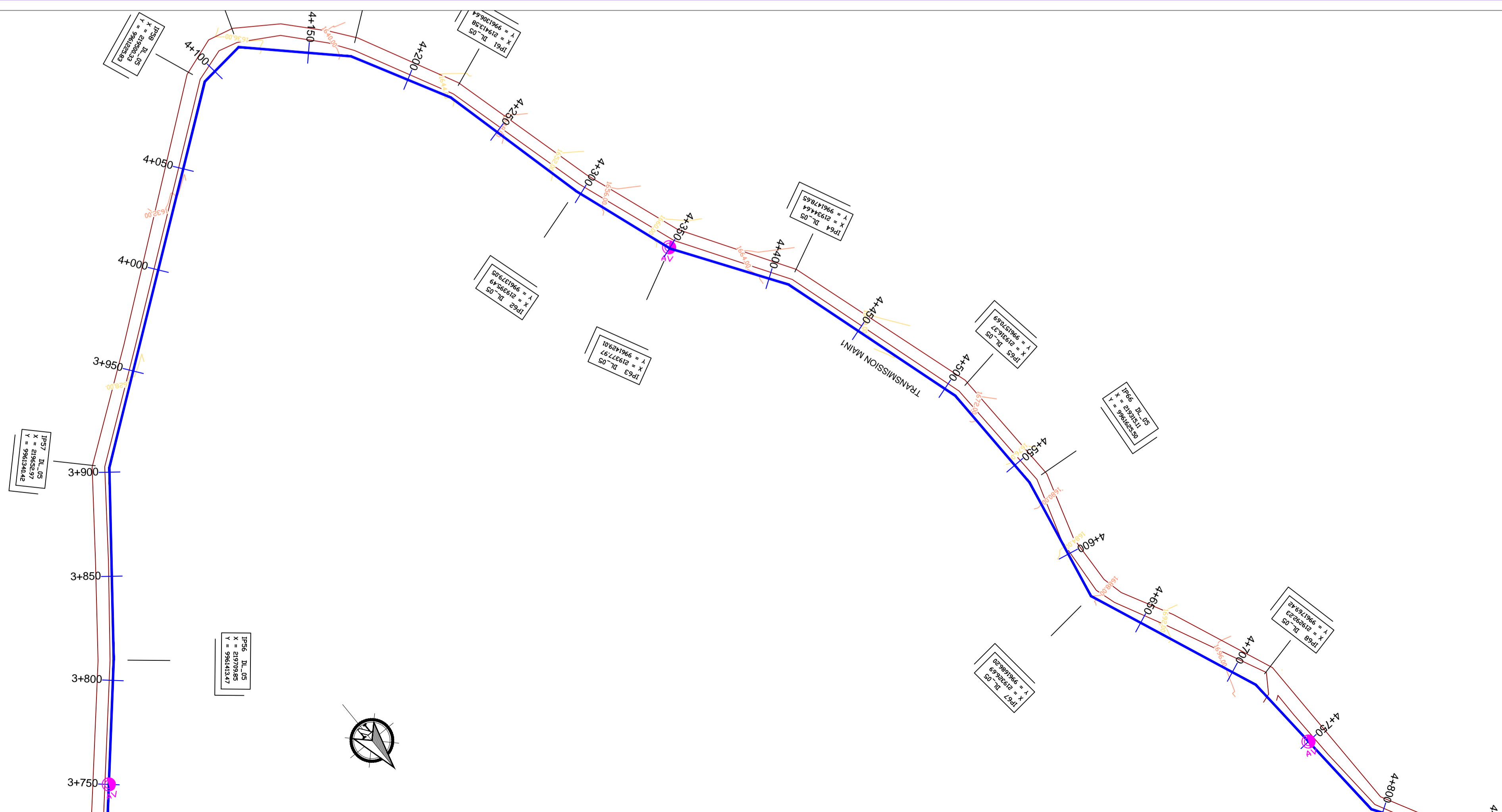
Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-04 Date: SEPT 2021



DISTRIBUTION LINE DL_05

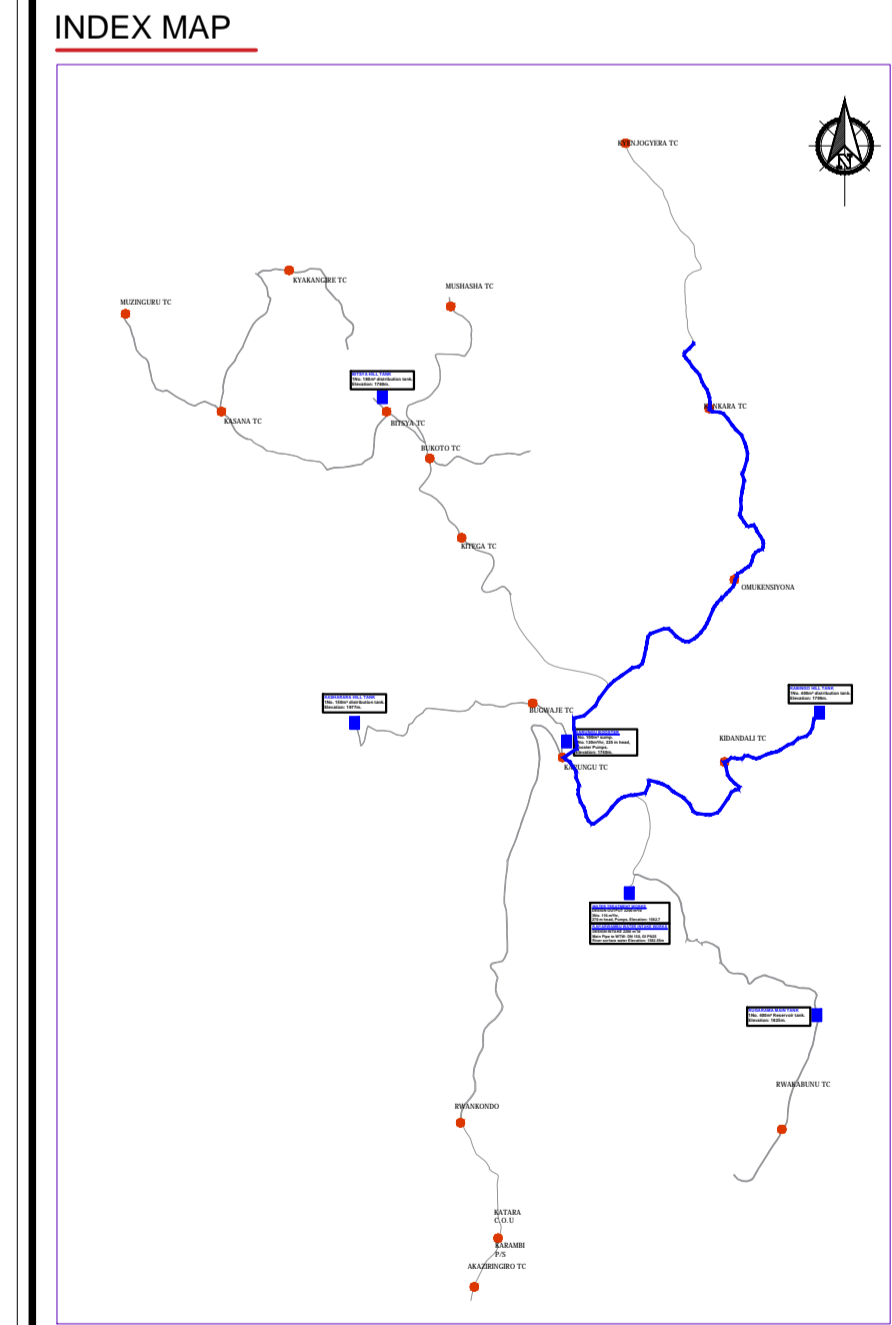
1:200(1:1000 sheet 5



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
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Scale: Horizontal 1 : 1000
Vertical 1 : 100

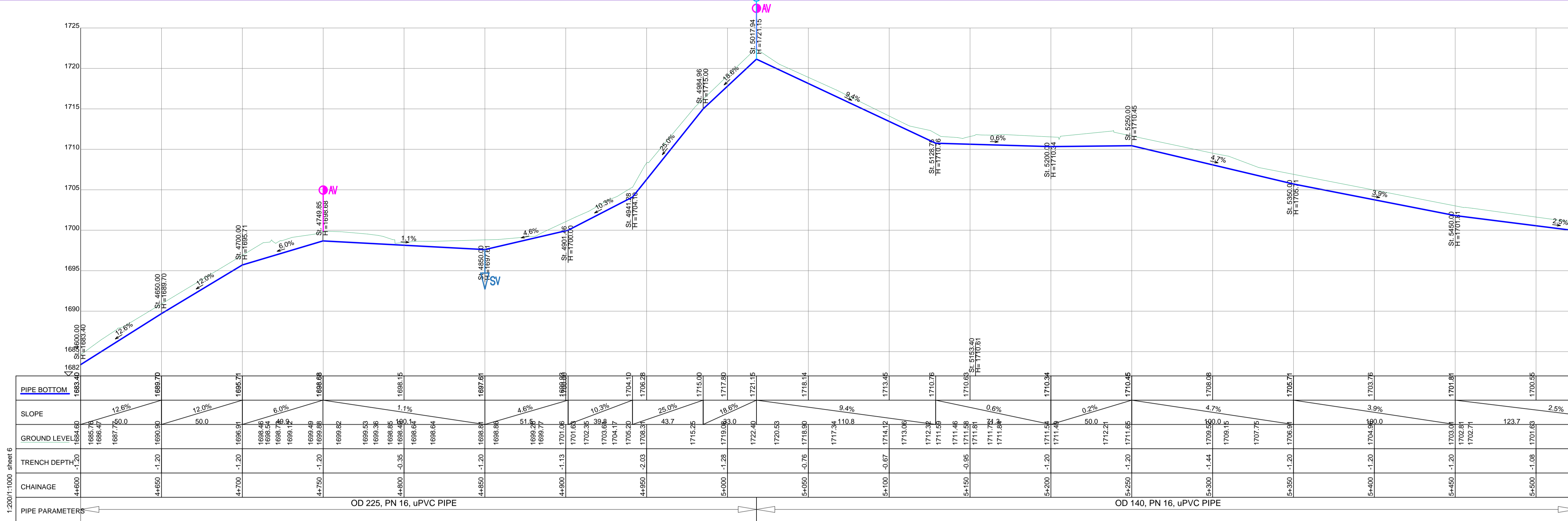
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_05

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL05-05 Date: SEPT 2021

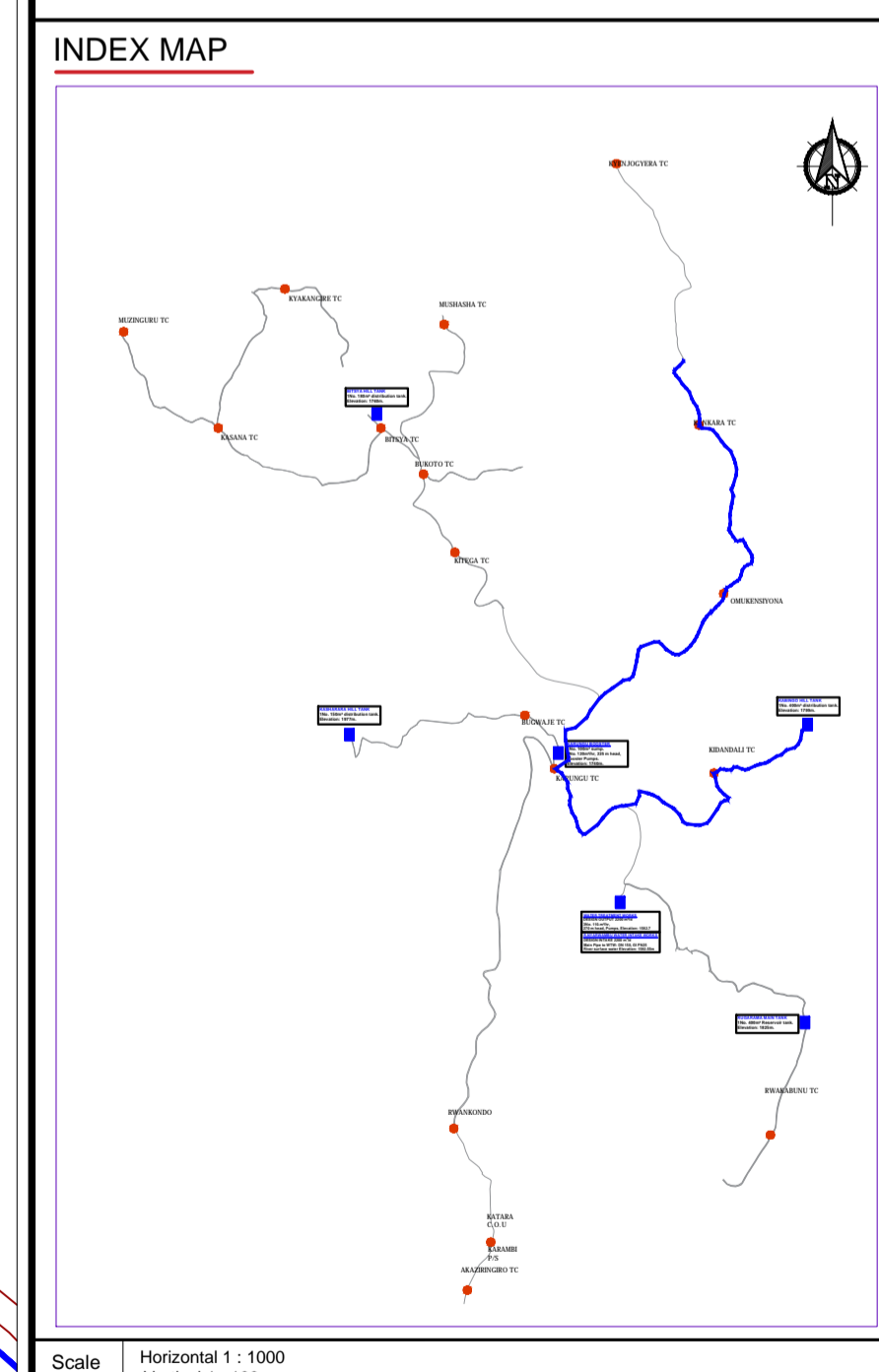
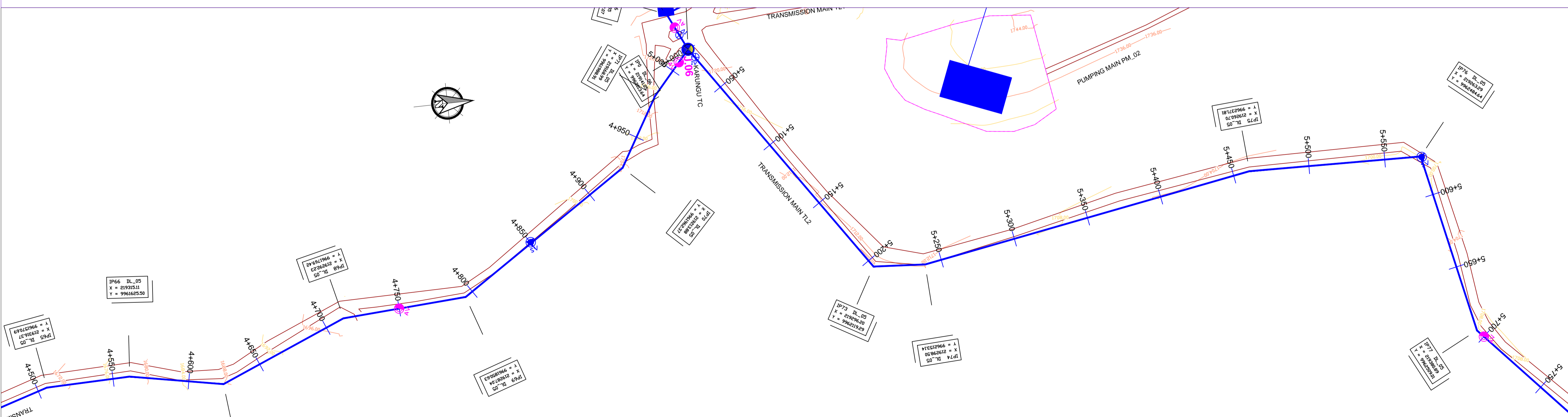


DISTRIBUTION LINE DL_05

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



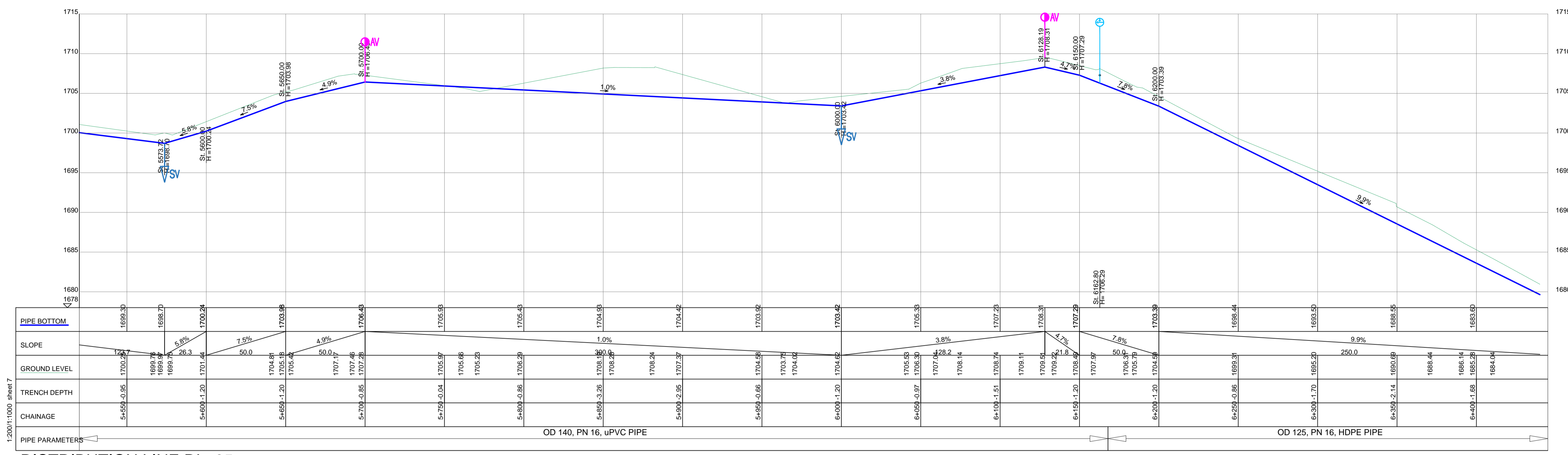
Client : **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project : CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title : **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

Consultants : **KAGGA & PARTNERS**
PLOT 2, BANDAII CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL05-06 Date /SEPT 2021

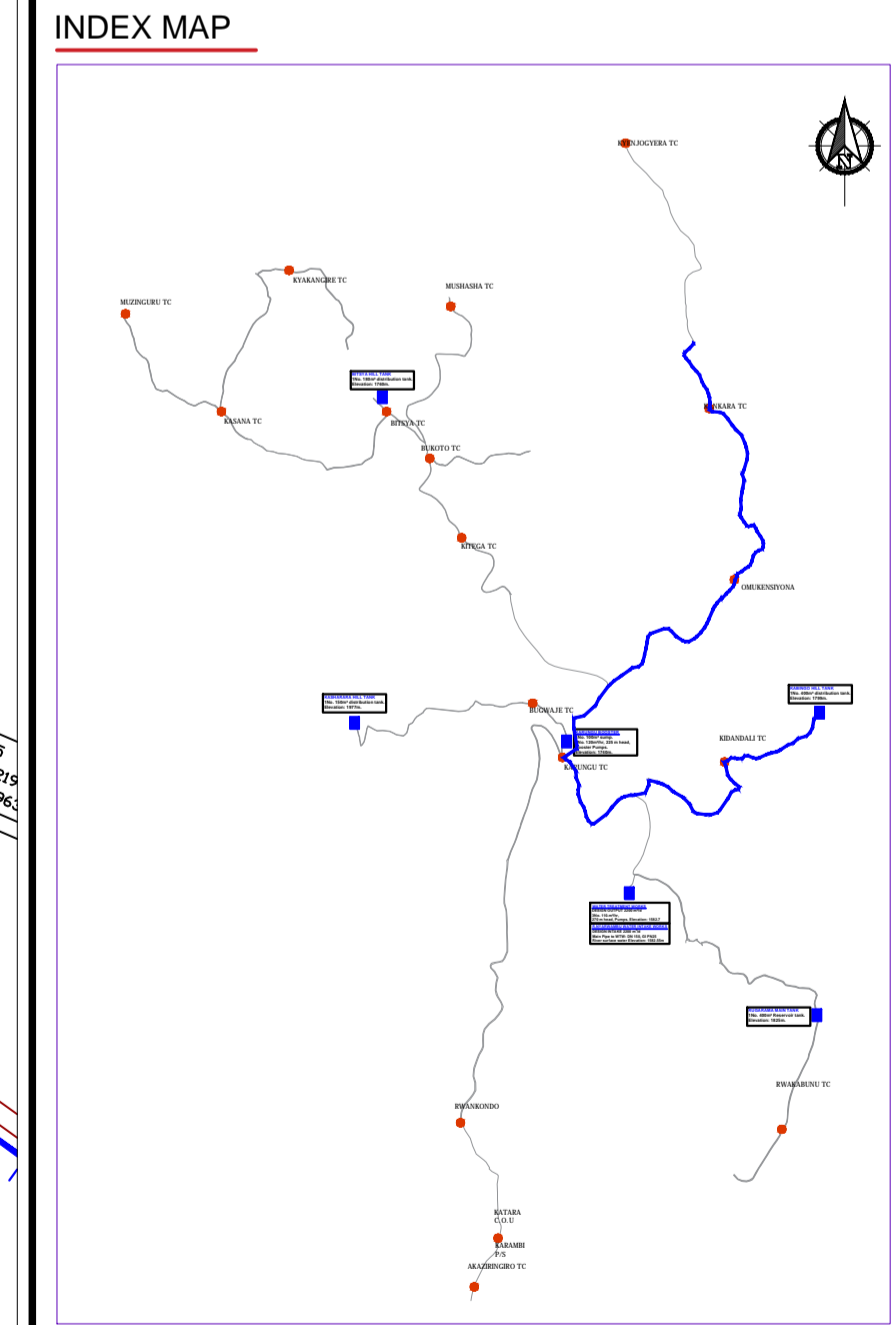
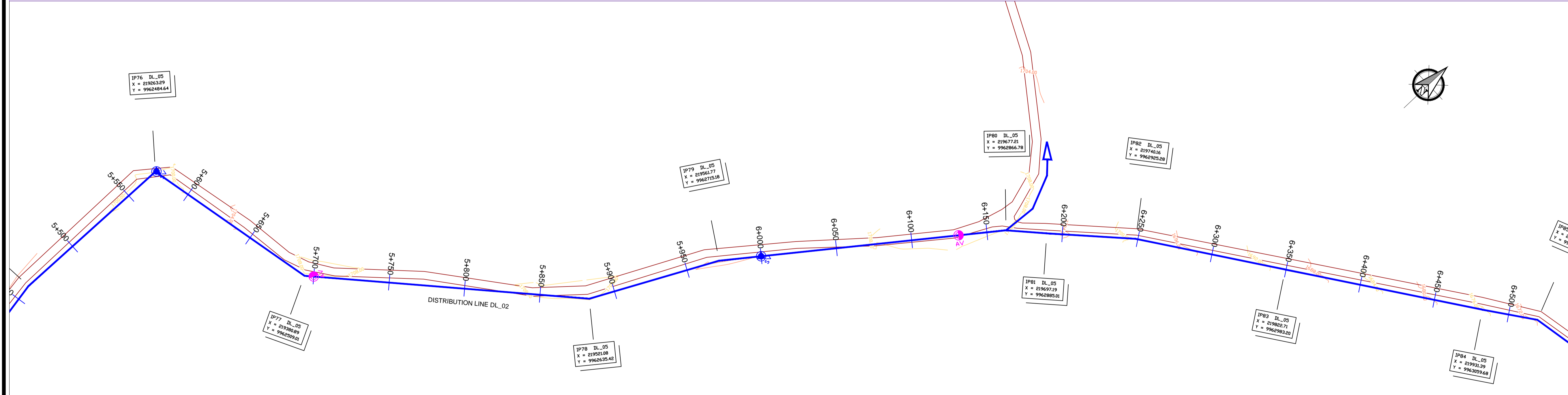


DISTRIBUTION LINE DL_05

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE (AV) On Profile View / On Plan View
- SCOUR VALVE (SV) On Profile View / On Plan View
- ISOLATION VALVE (IV) On Profile View / On Plan View
- ANTI-SURGE VALVE (ASV) On Profile View / On Plan View
- PIPE T-JUNCTION
- PIPE CROSS-JUNCTION

- NOTES**
- NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
 - REFER TO AUXILIARY WORKS DRAWINGS FOR ANCHORAGE TO PIPELINES, AIR VALVES DETAILS, PIPE PEDESTALS, PULLEY SUPPORT, TRENCH DETAILS, VALVE CHAMBERS, WASHOUT CHAMBERS AND WATER METERS.
 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

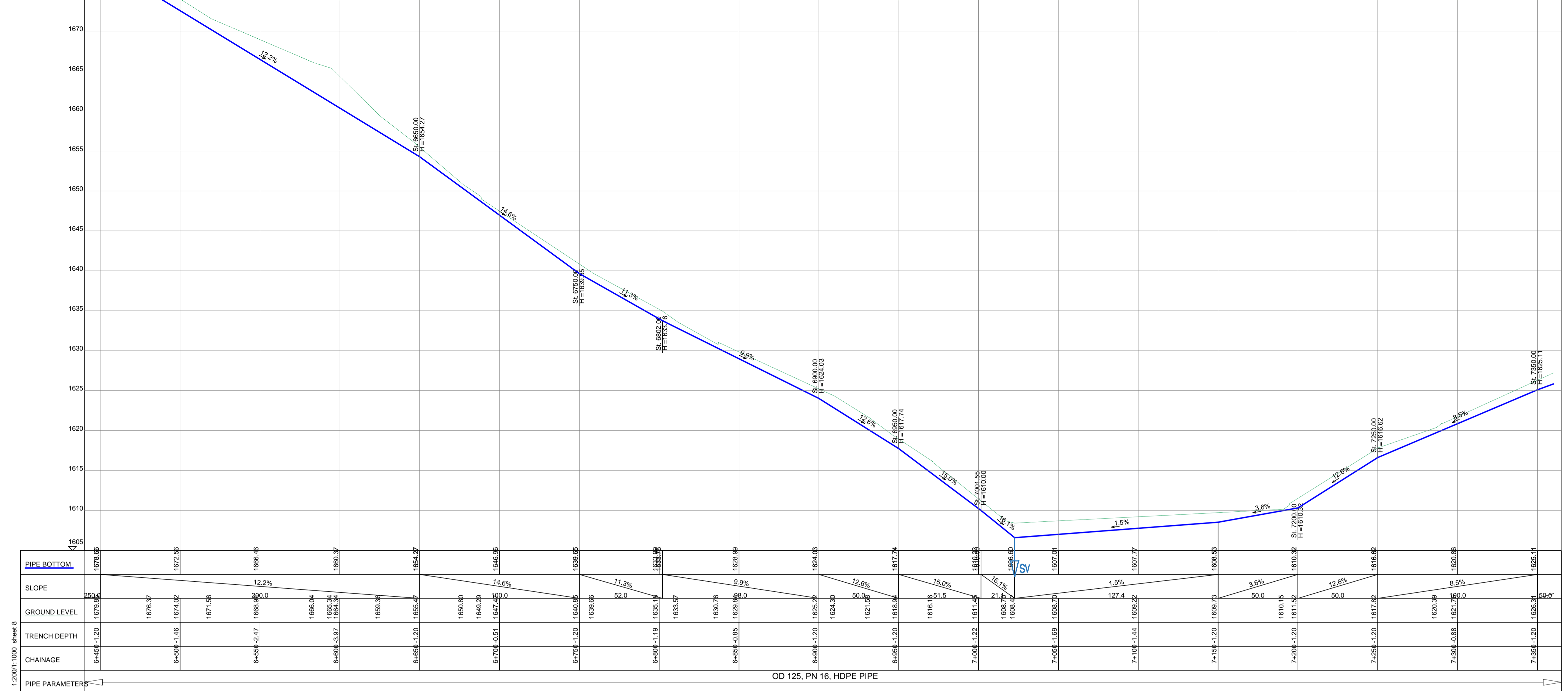
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65852,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL05-07 | Date | SEPT 2021

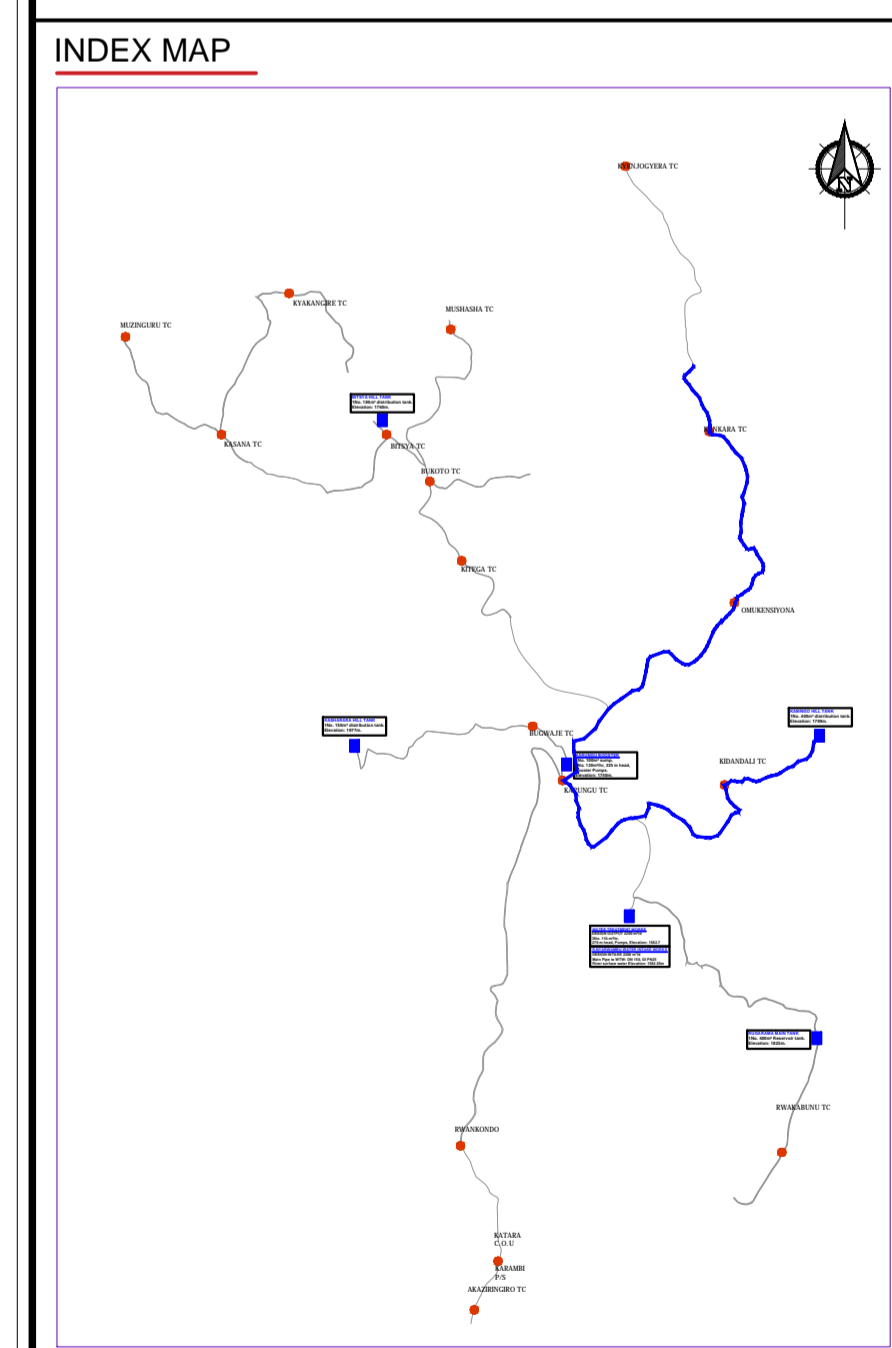
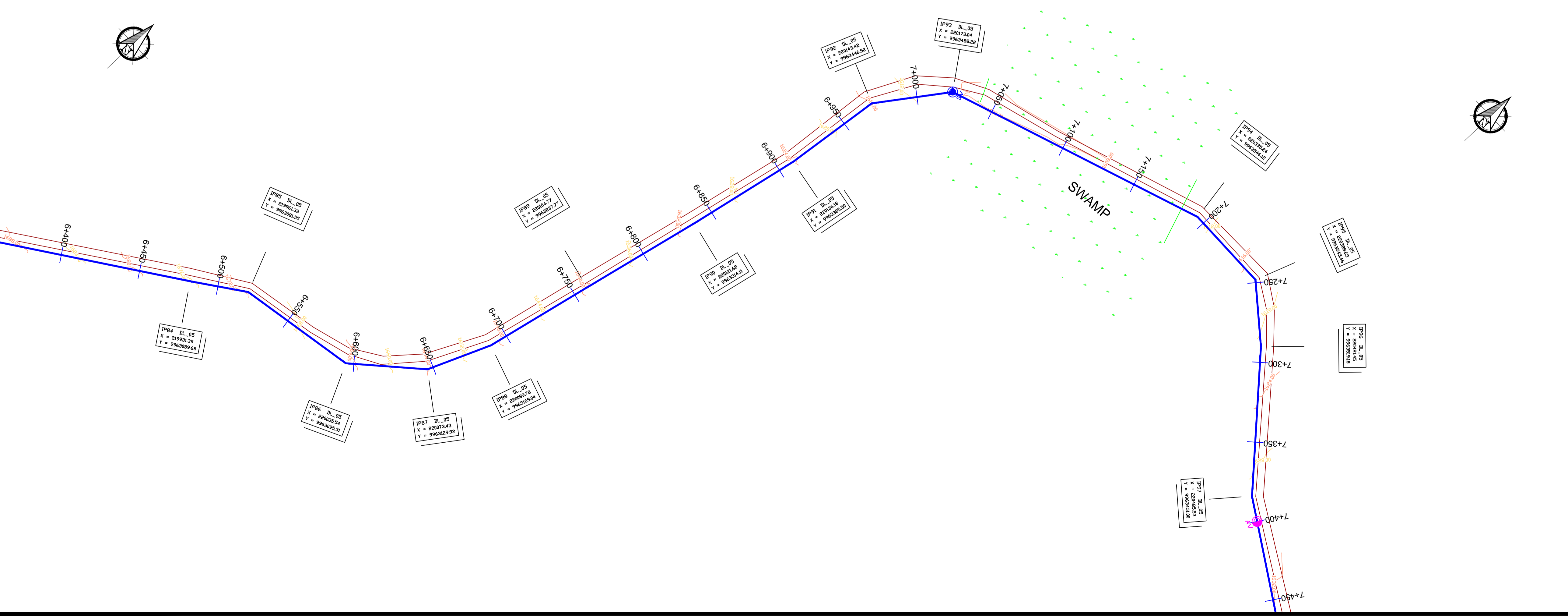


DISTRIBUTION LINE DL_05

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

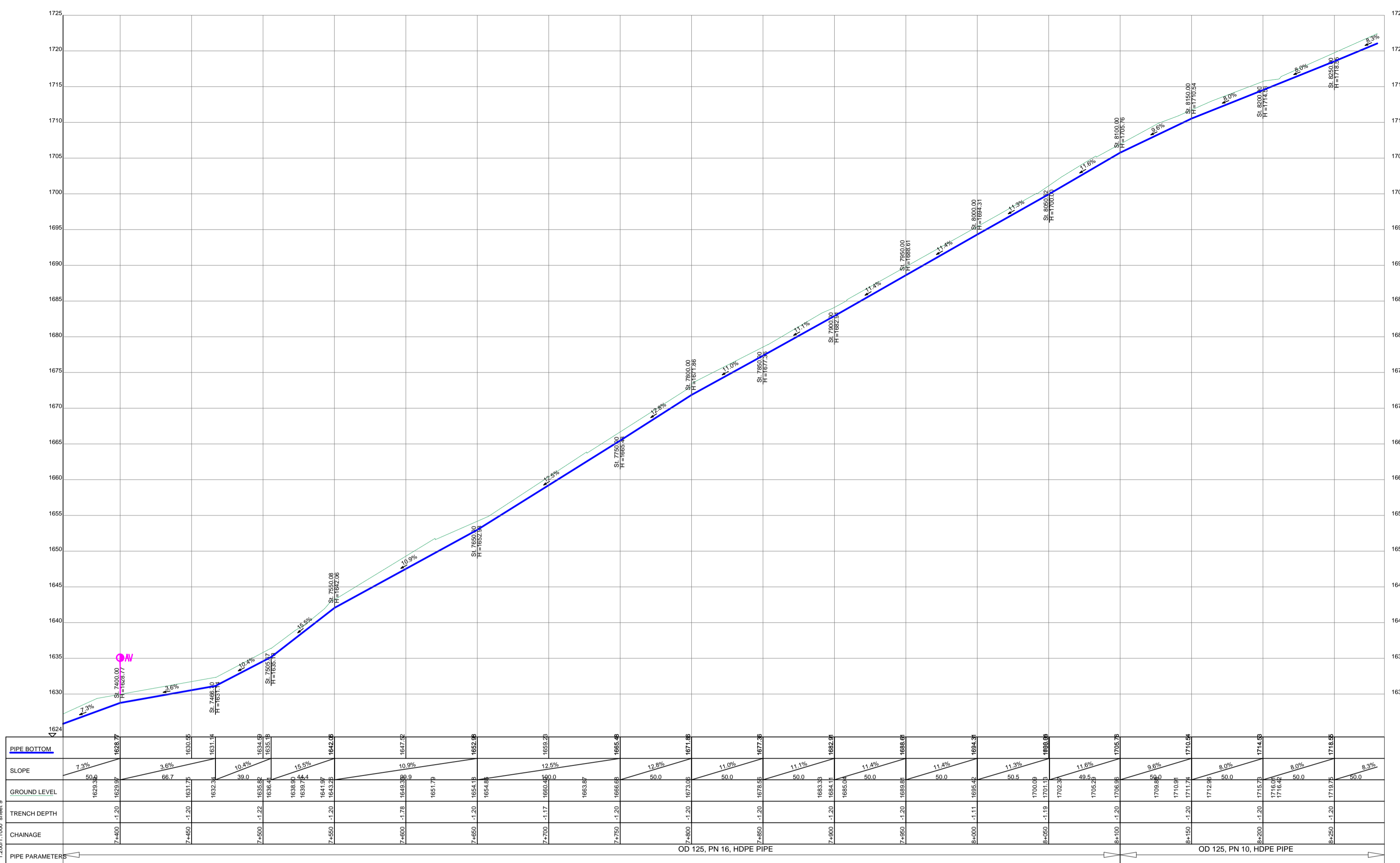
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

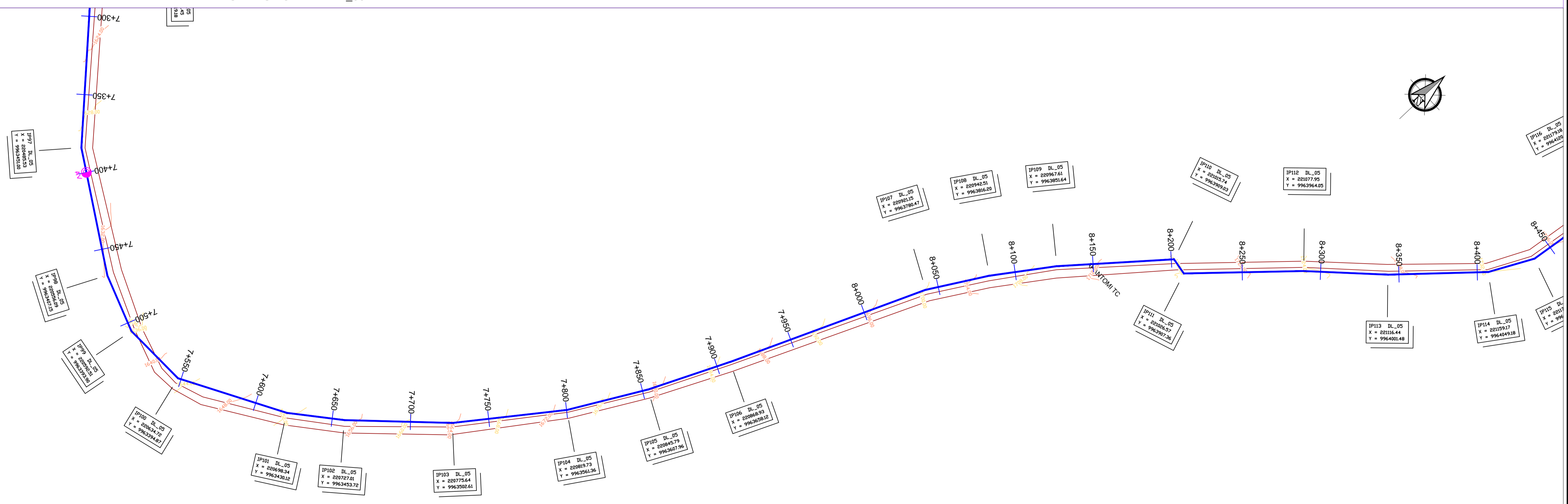
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-08 | Date: SEPT 2021



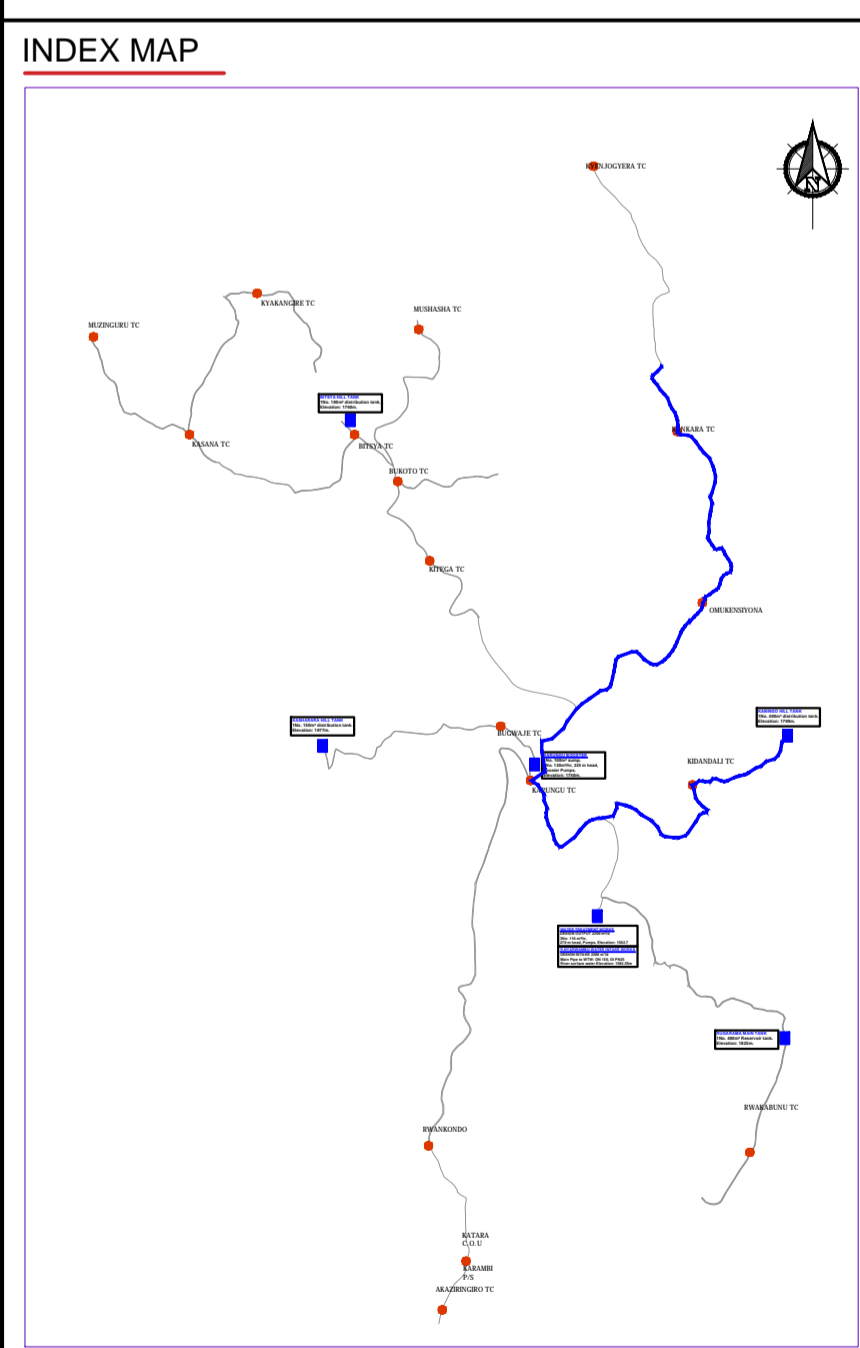
DISTRIBUTION LINE DL_05



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

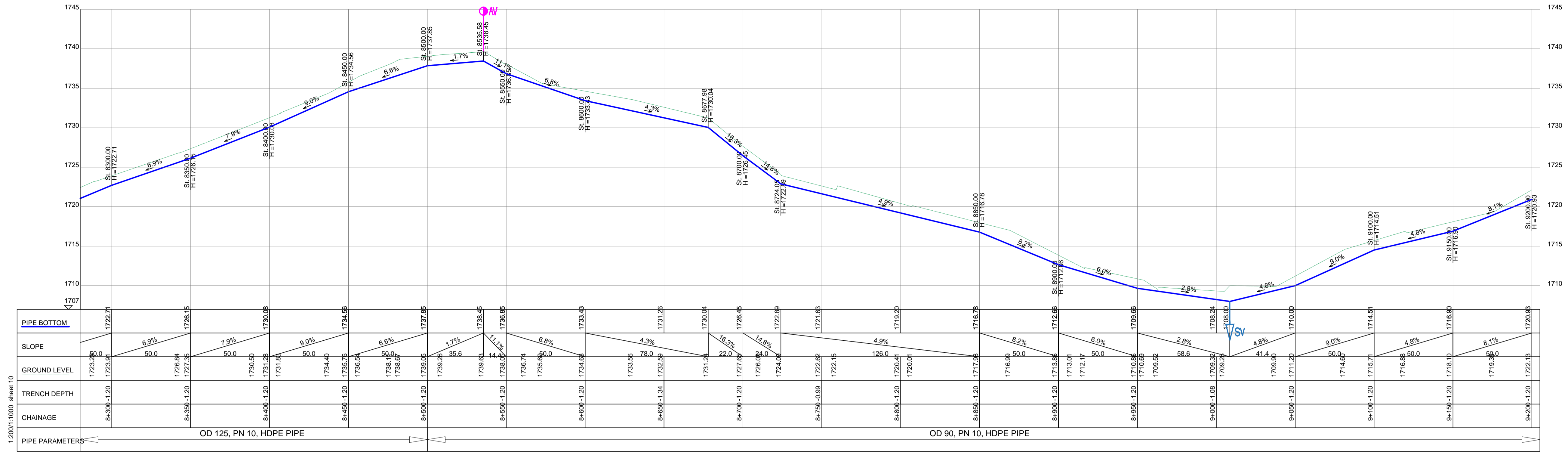
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_05

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-09 Date: SEPT 2021

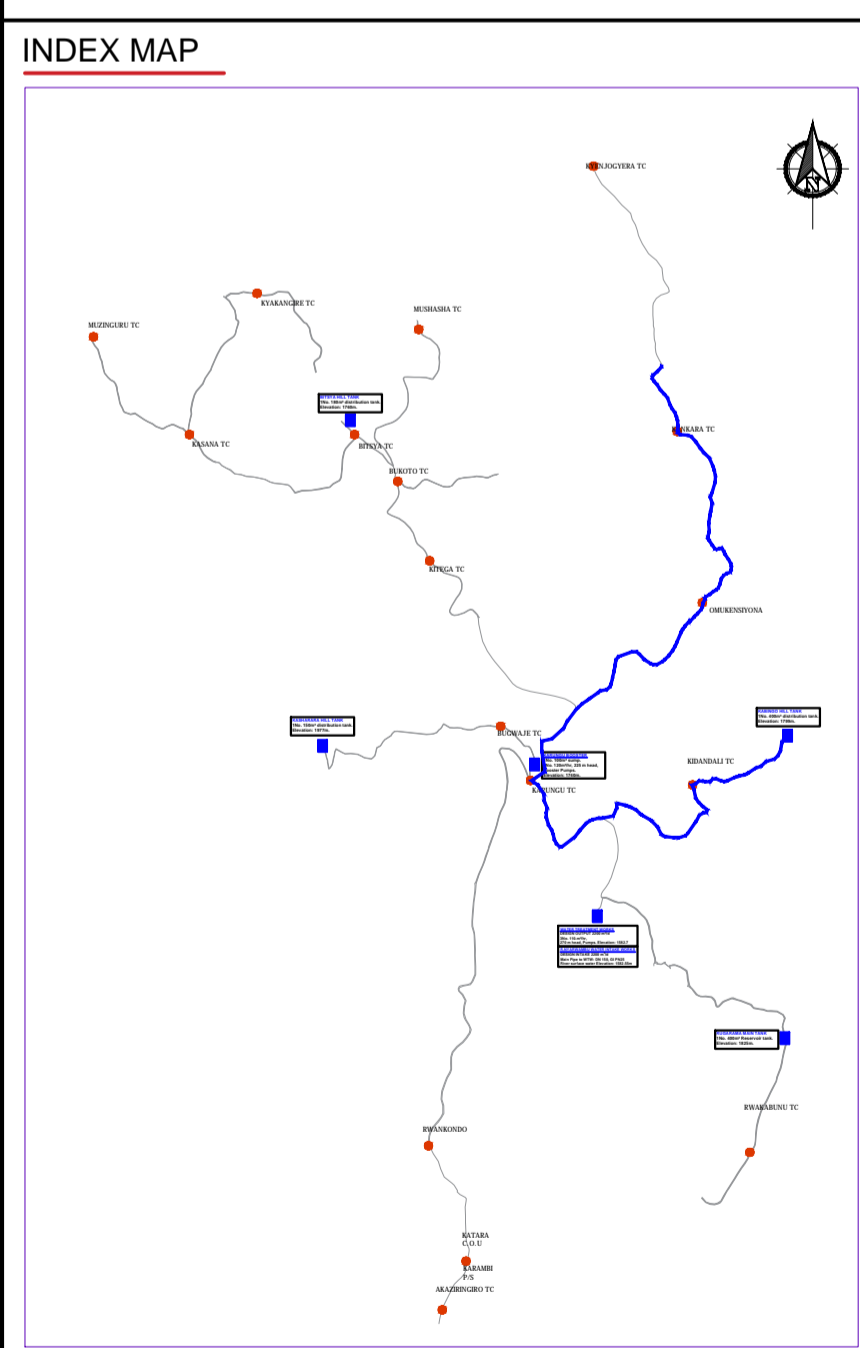
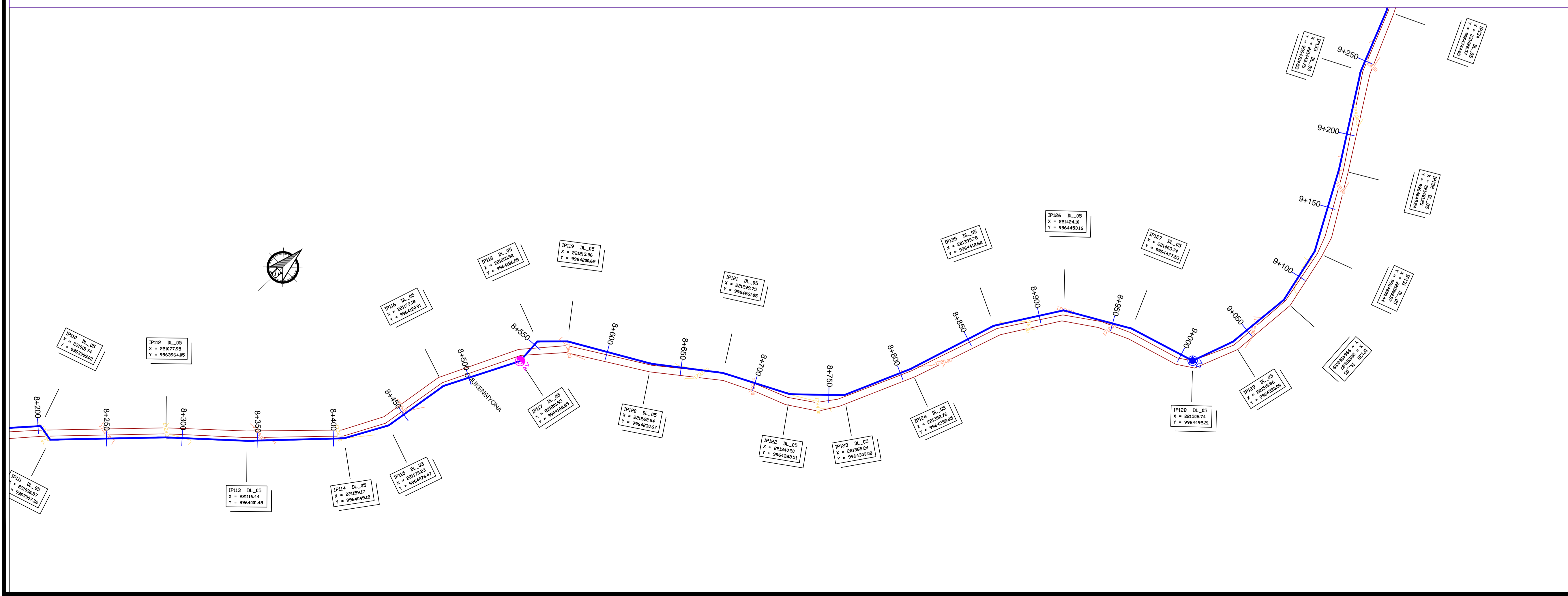


DISTRIBUTION LINE DL_05

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

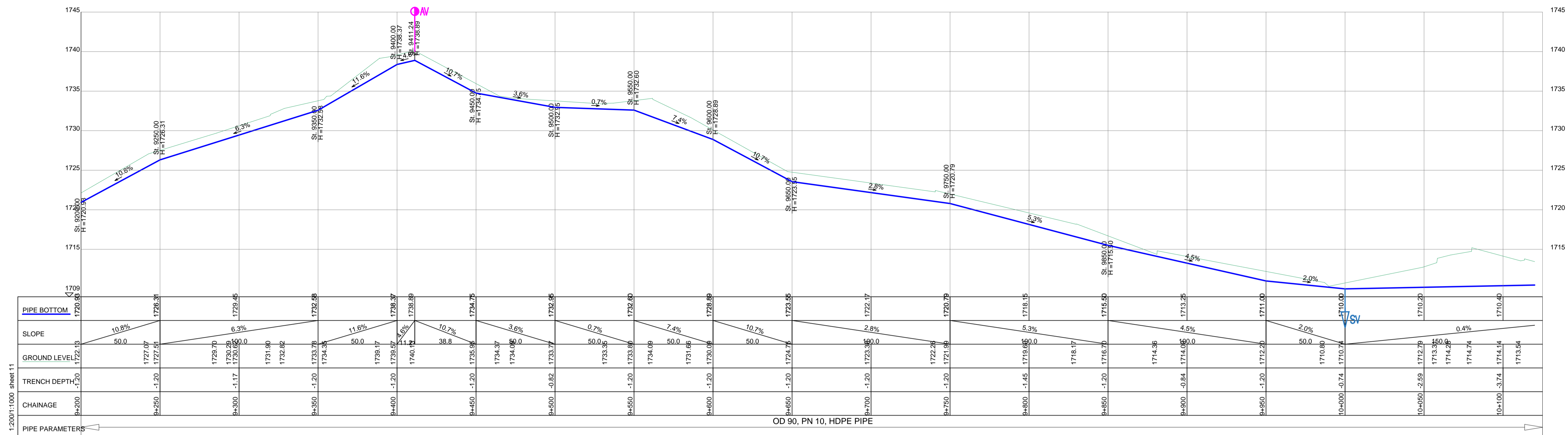
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL05-10 Date: SEPT 2021

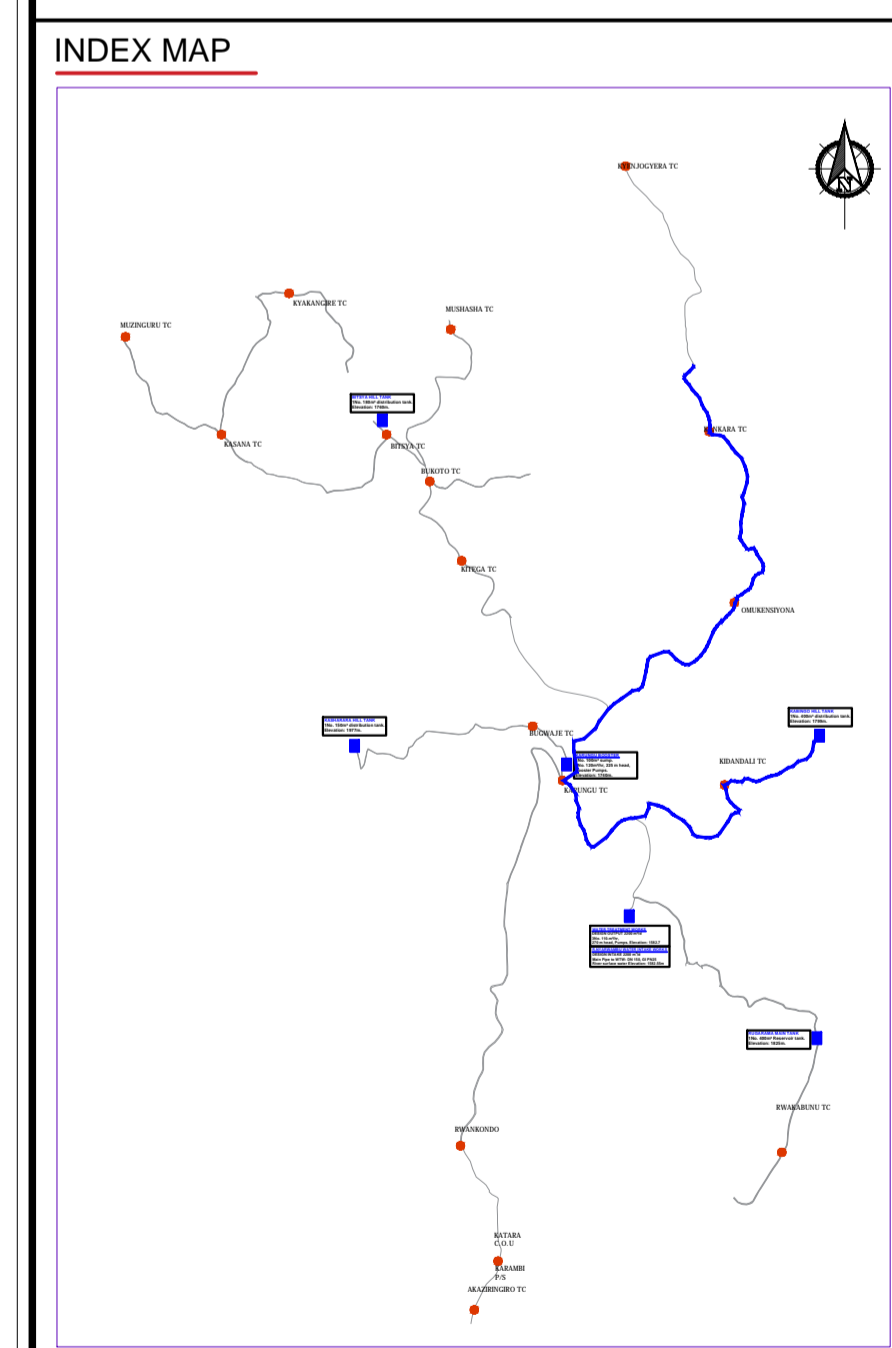
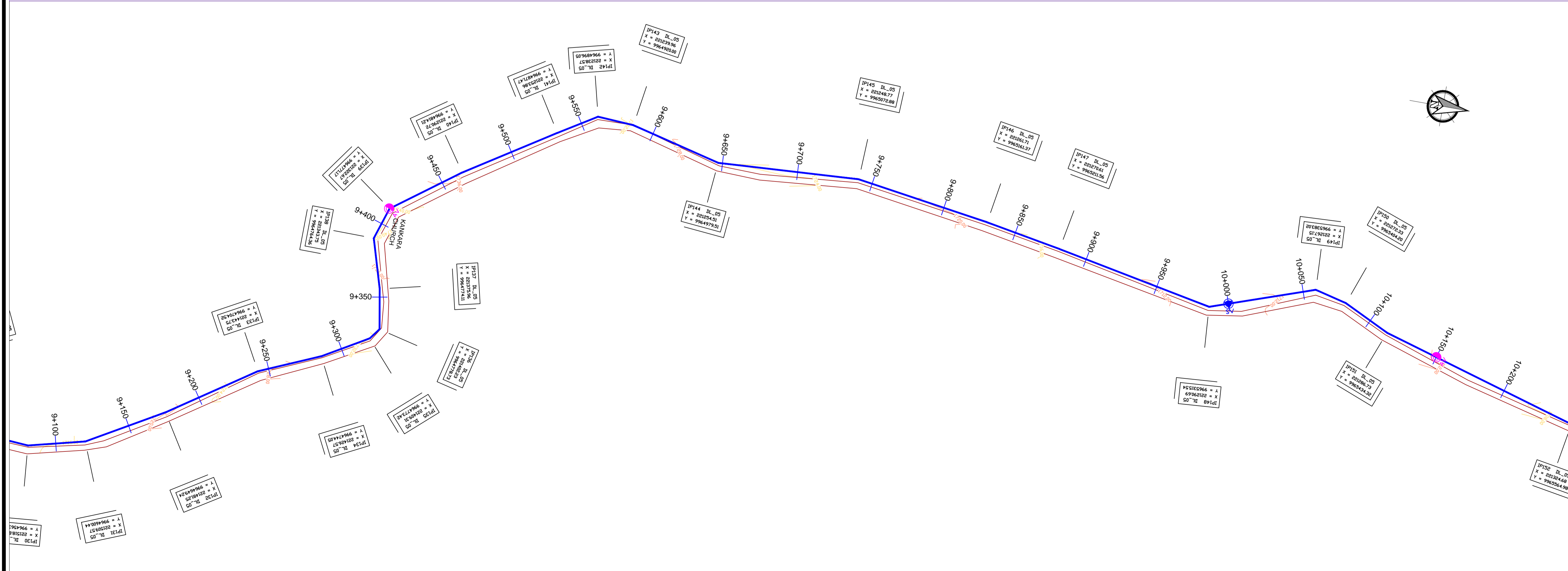


DISTRIBUTION LINE DL_05

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

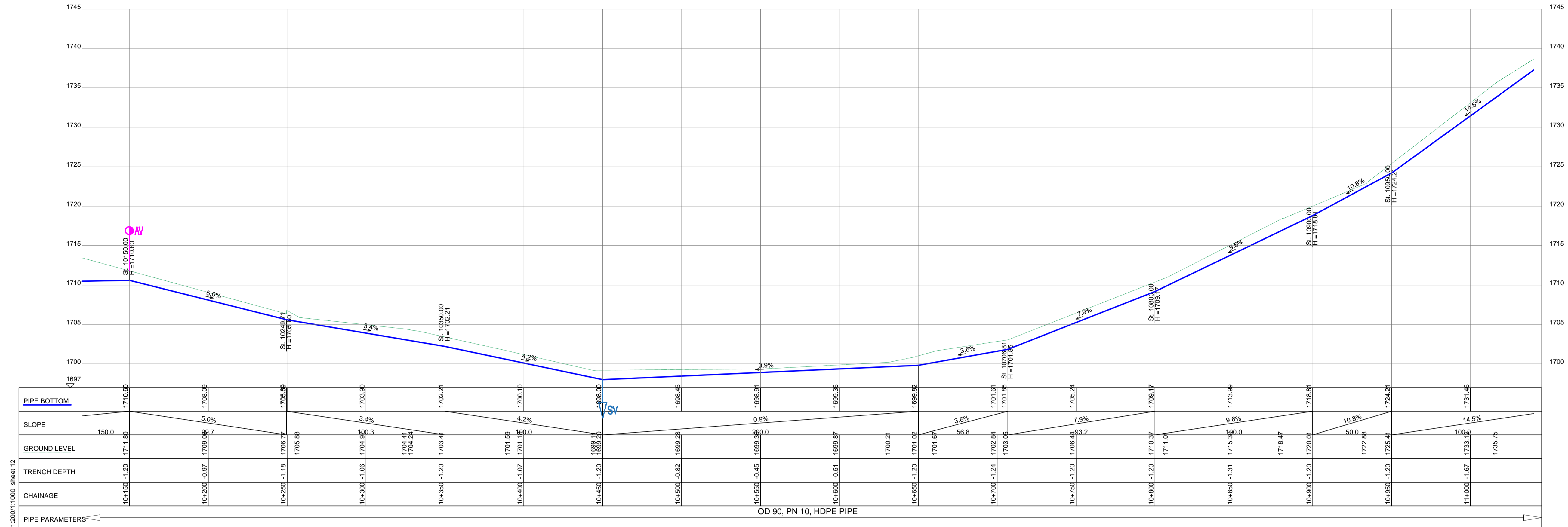
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_05

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-11 Date: SEPT 2021



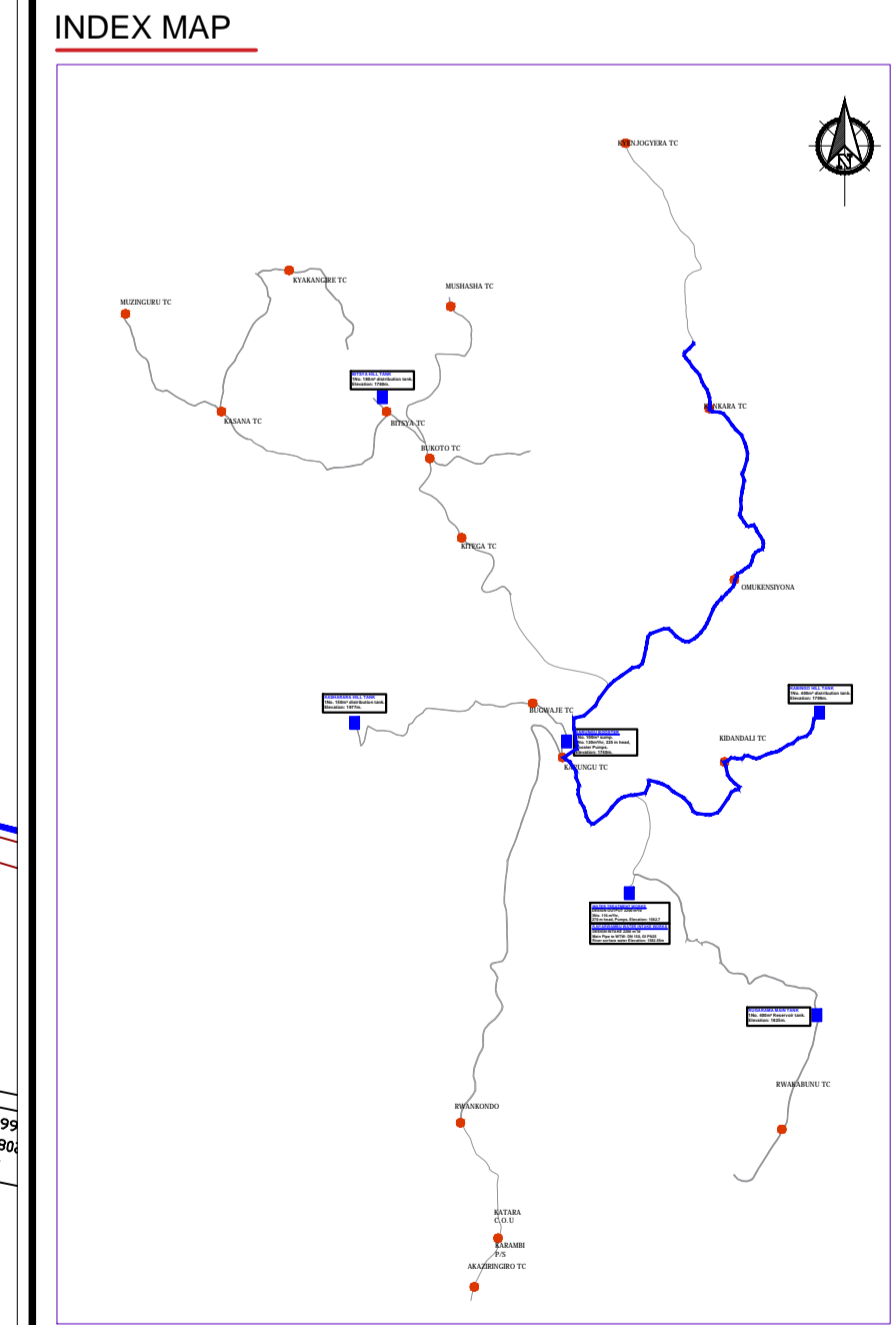
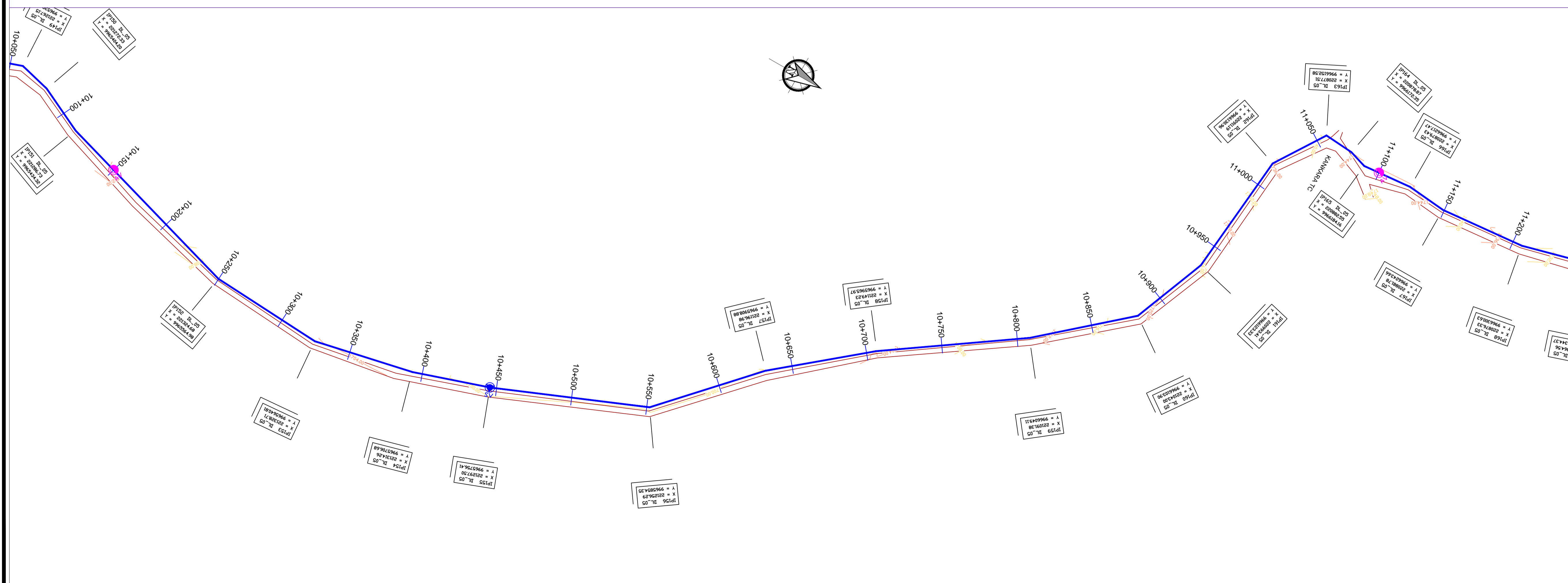
DISTRIBUTION LINE DL_05

1:2000/1:1000 sheet 12

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

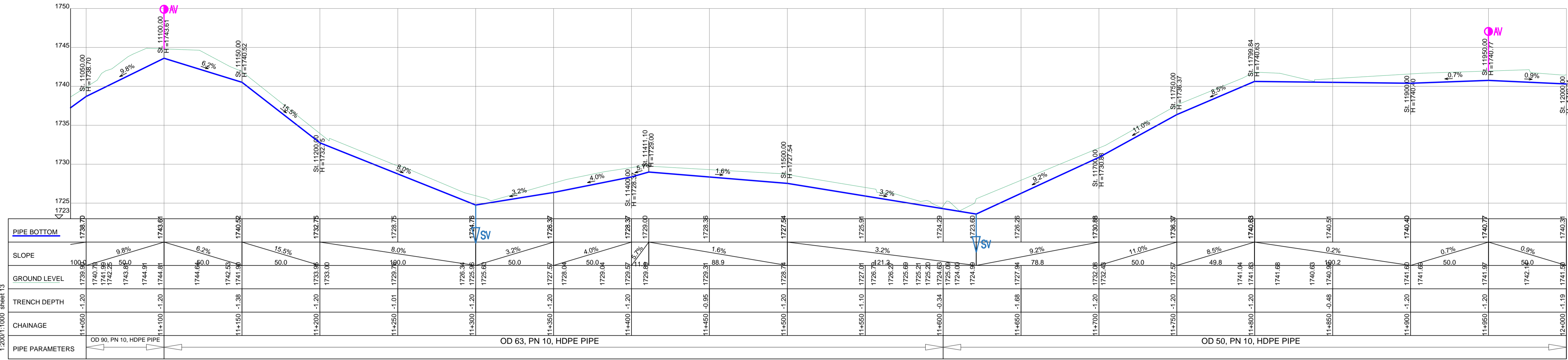
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 65851,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL05-12 Date: SEPT 2021

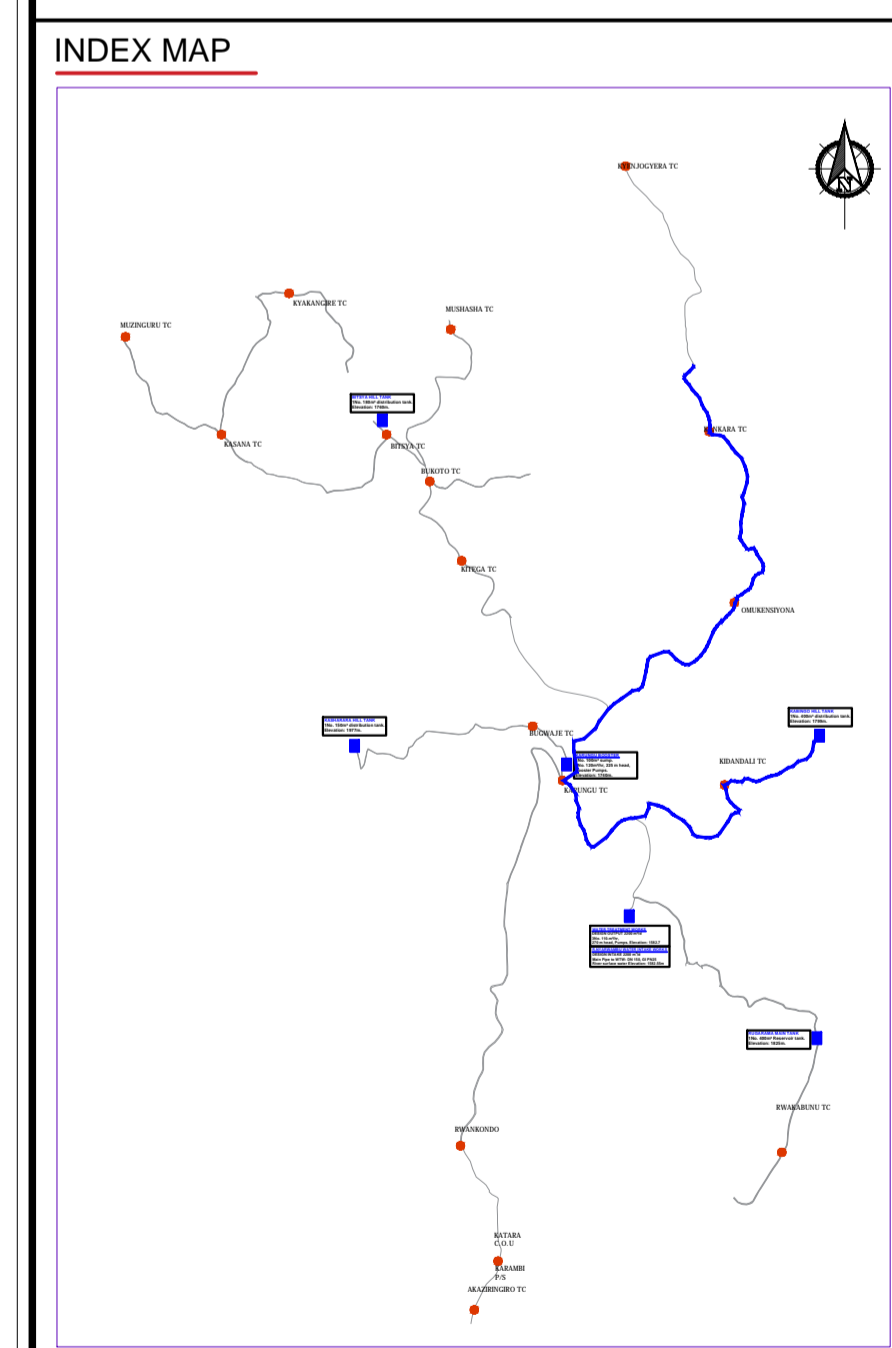
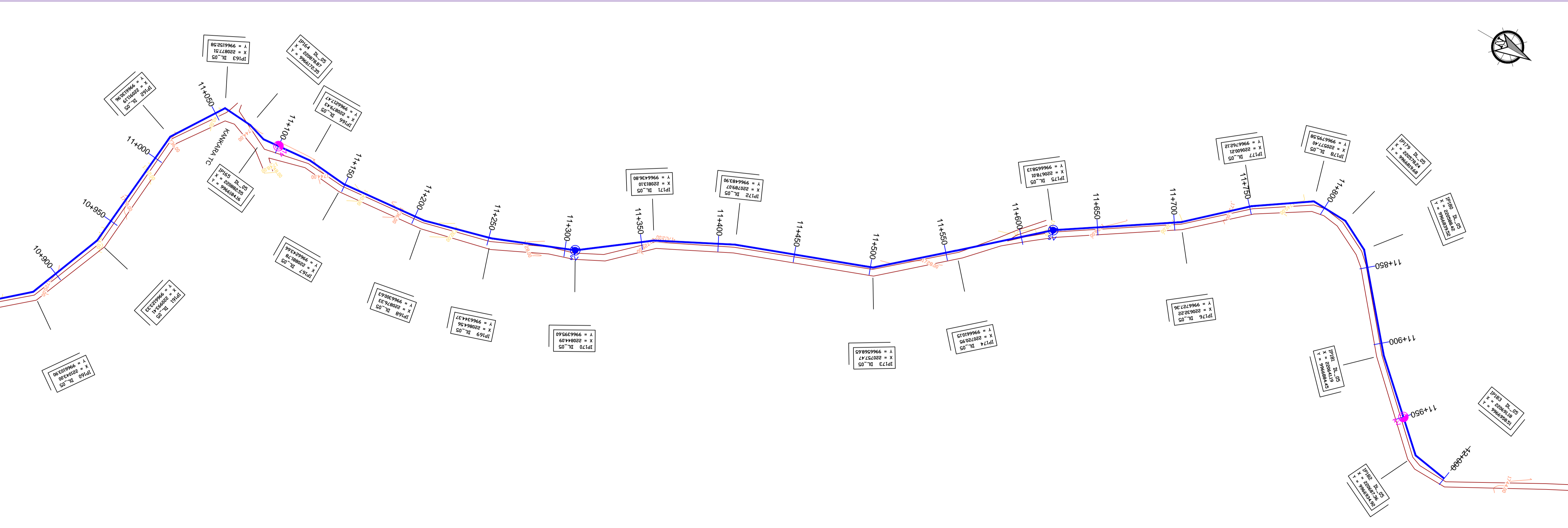


DISTRIBUTION LINE DL_05

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

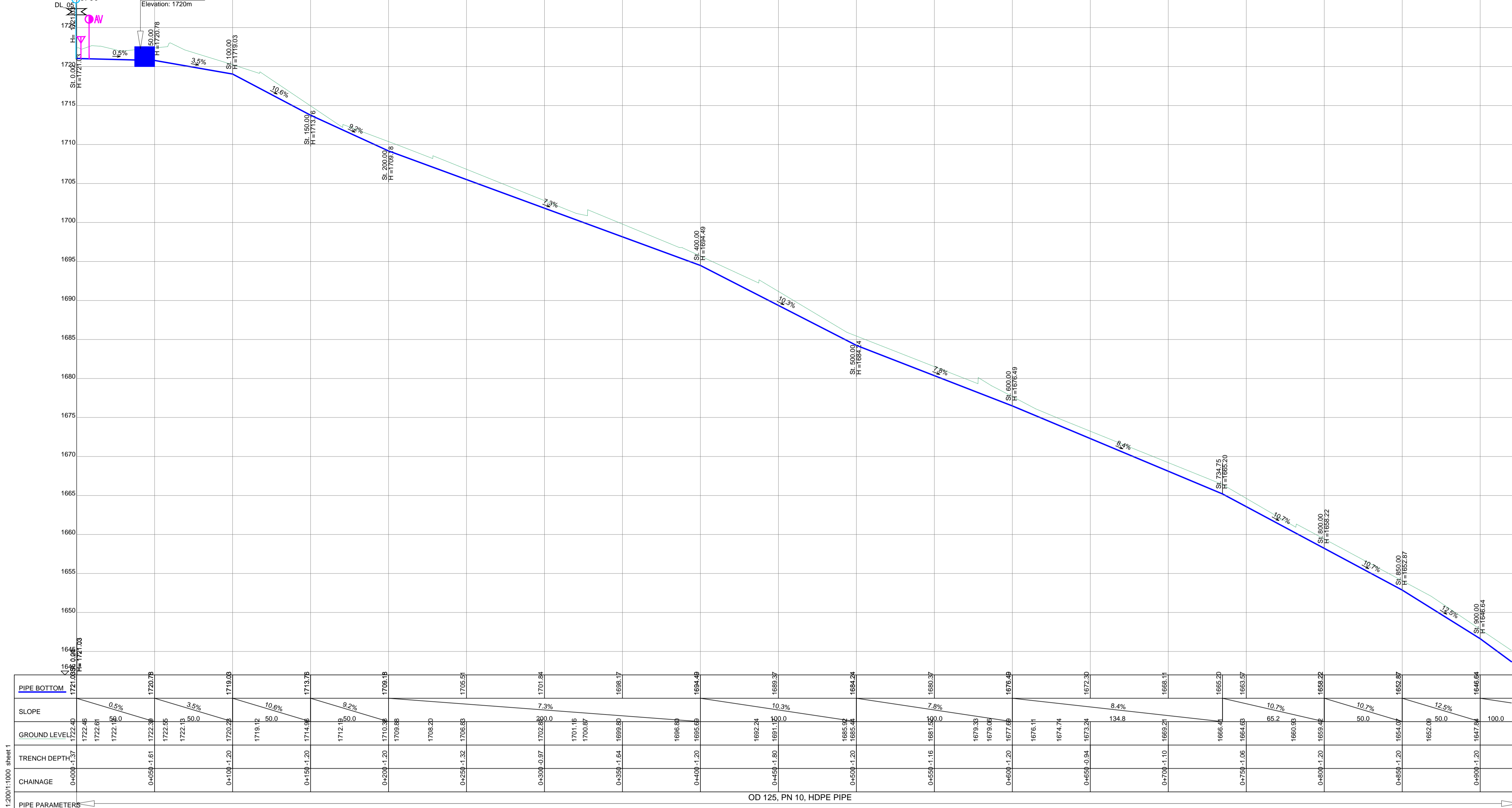
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

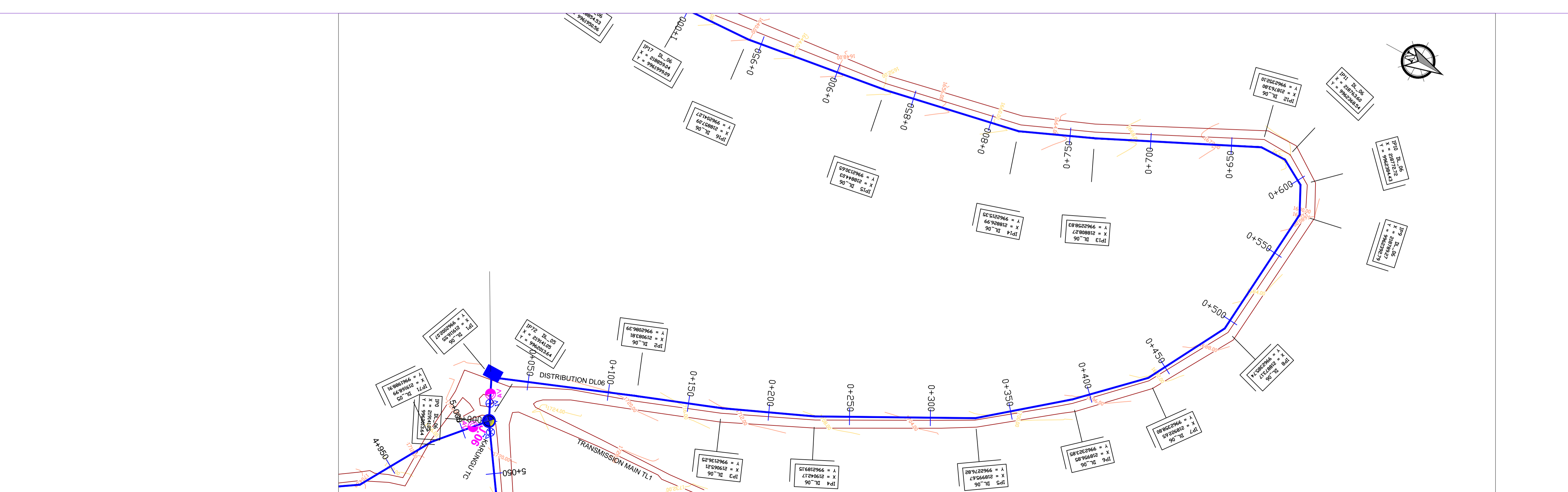
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_05**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL05-13 Date: SEPT 2021



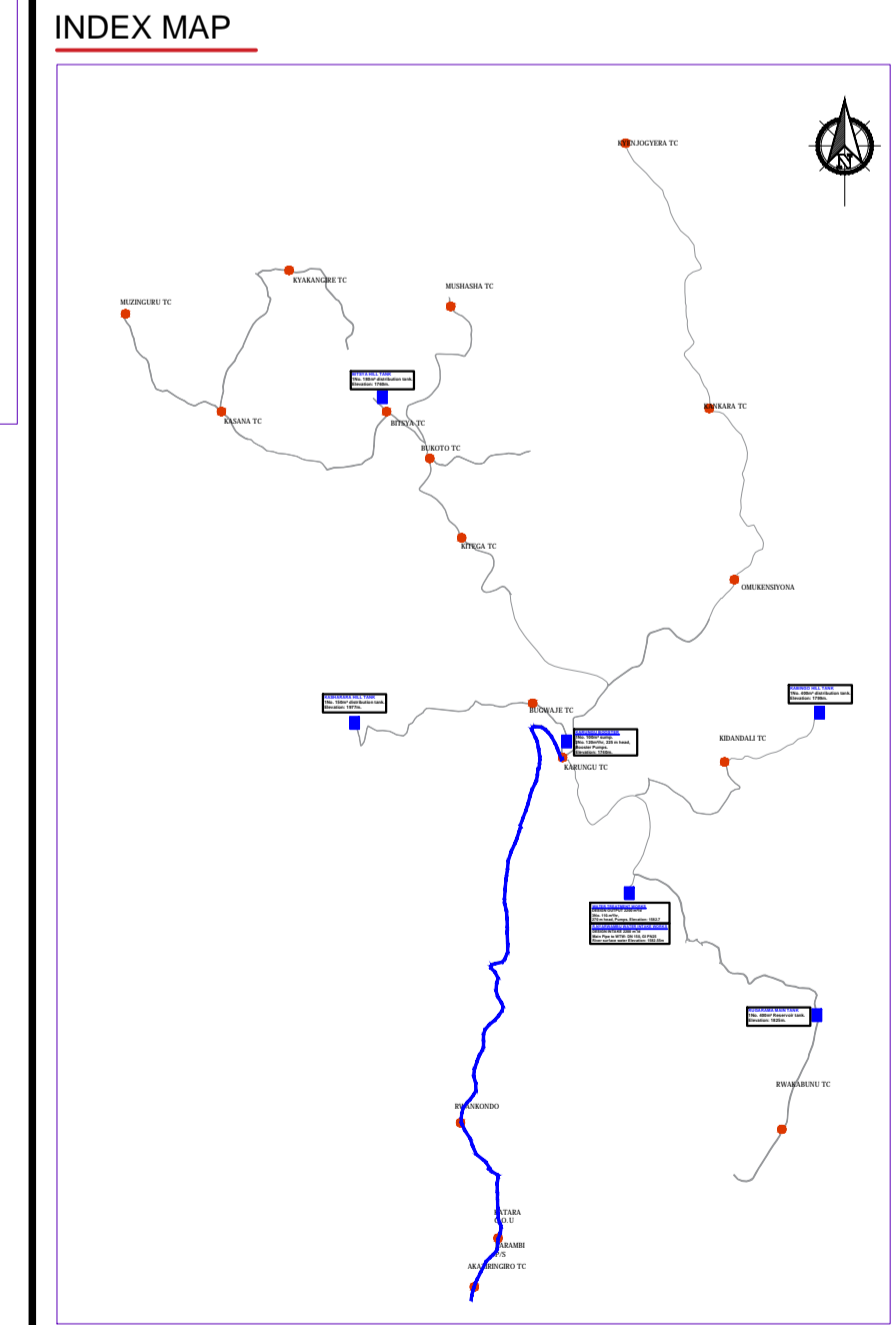
DISTRIBUTION LINE DL_06



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
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 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

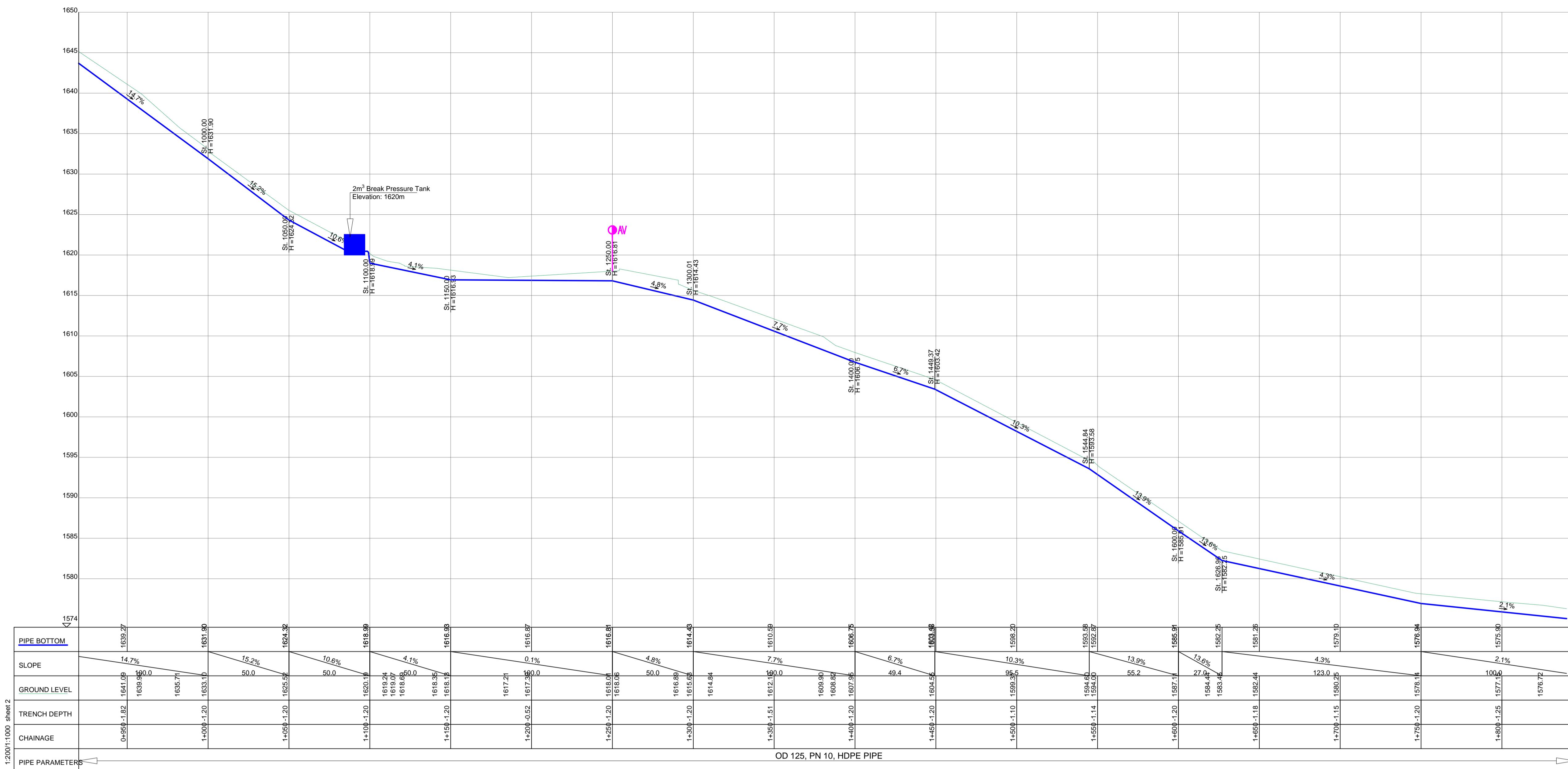
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

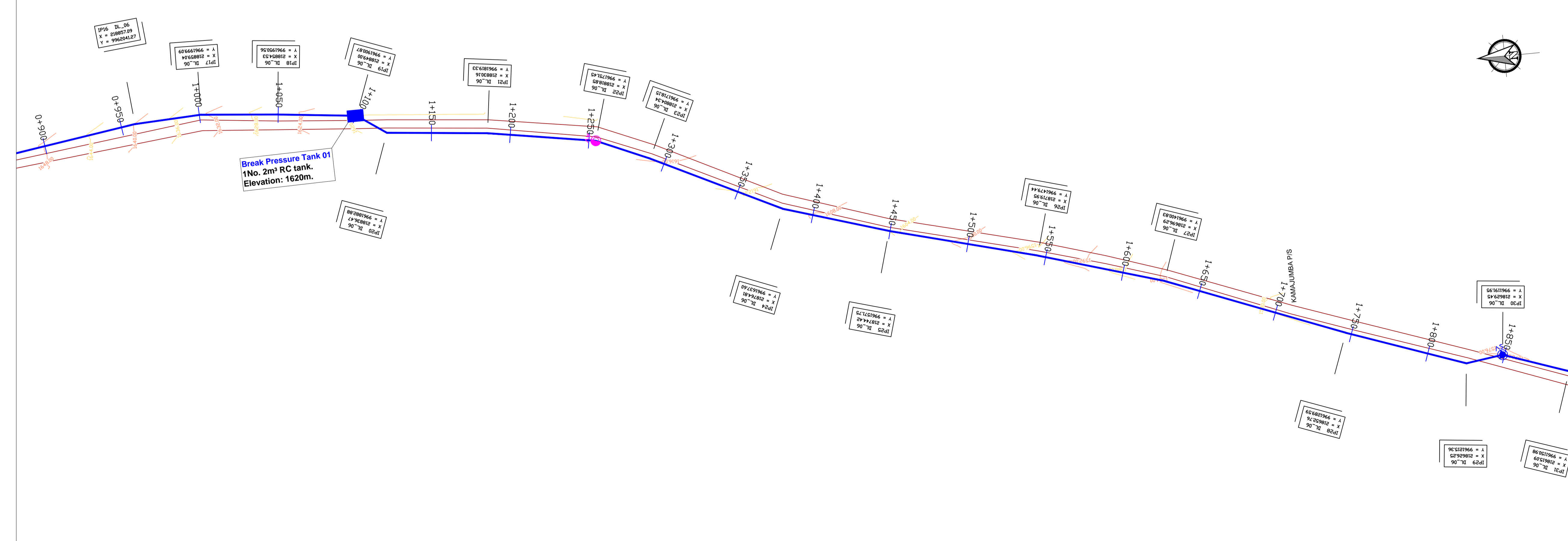
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_06

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAAL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL06-01 Date: SEPT 2021



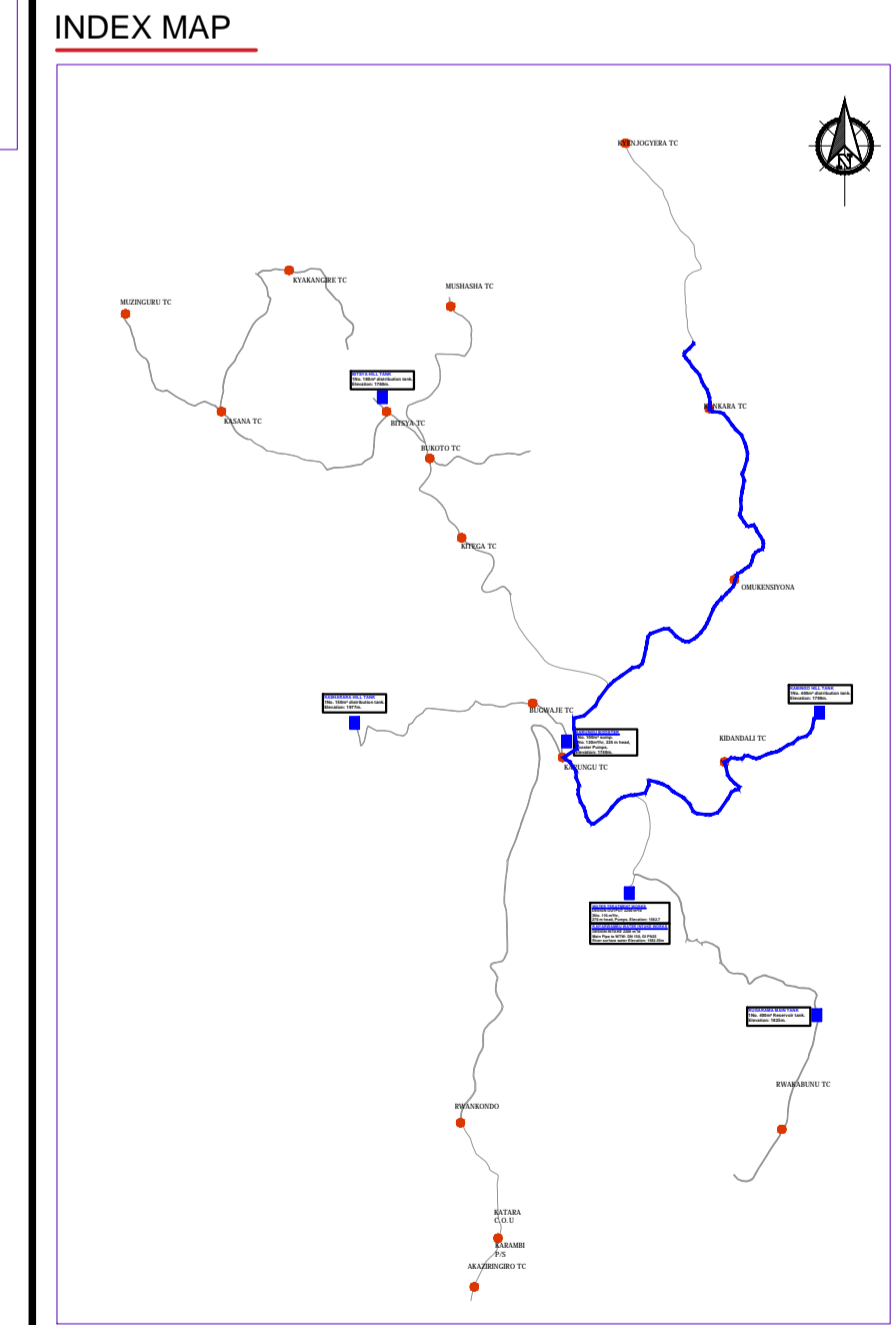
DISTRIBUTION LINE DL_06



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE (AV) On Profile View / On Plan View
- SCOUR VALVE (SV) On Profile View / On Plan View
- ISOLATION VALVE (IV) On Profile View / On Plan View
- ANTI-SURGE VALVE (ASV) On Profile View / On Plan View
- PIPE T-JUNCTION
- PIPE CROSS-JUNCTION

- NOTES**
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 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
 - REFER TO AUXILIARY WORKS DRAWINGS FOR ANCHORAGE TO PIPELINES, AIR VALVES DETAILS, PIPE PEDESTALS, PULLEY SUPPORT, TRENCH DETAILS, VALVE CHAMBERS, WASHOUT CHAMBERS AND WATER METERS.
 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000, Vertical 1 : 100

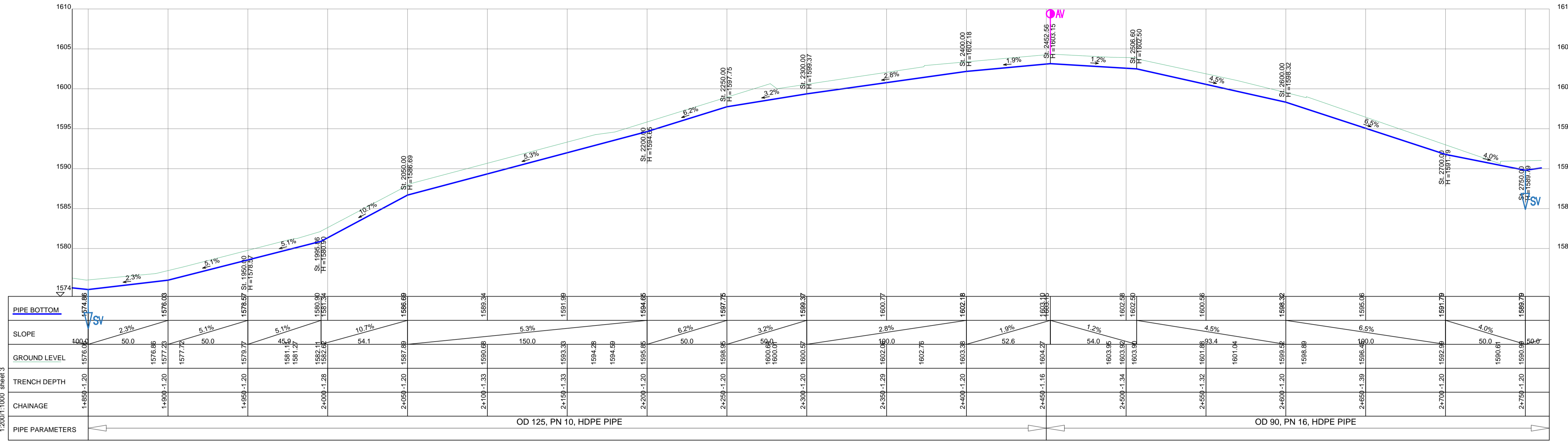
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

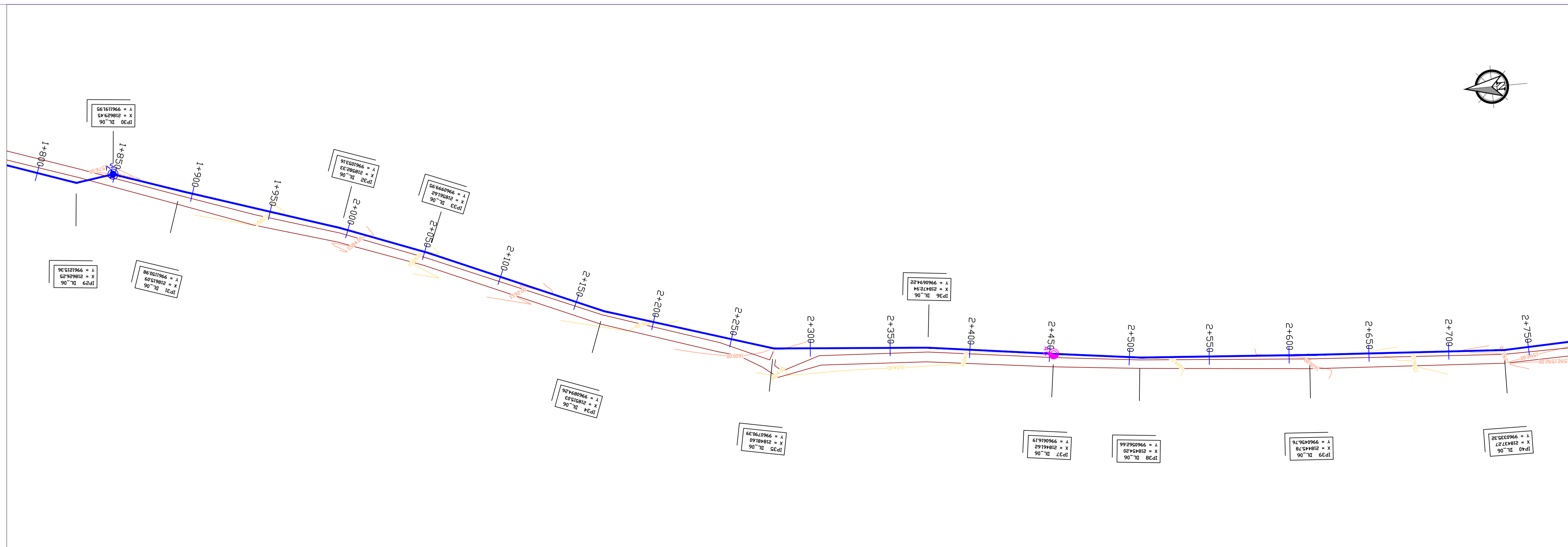
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_06**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAAL CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279, FAX: 256 41 220208,
P.O. BOX 65851, KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL06-02 Date: SEPT 2021



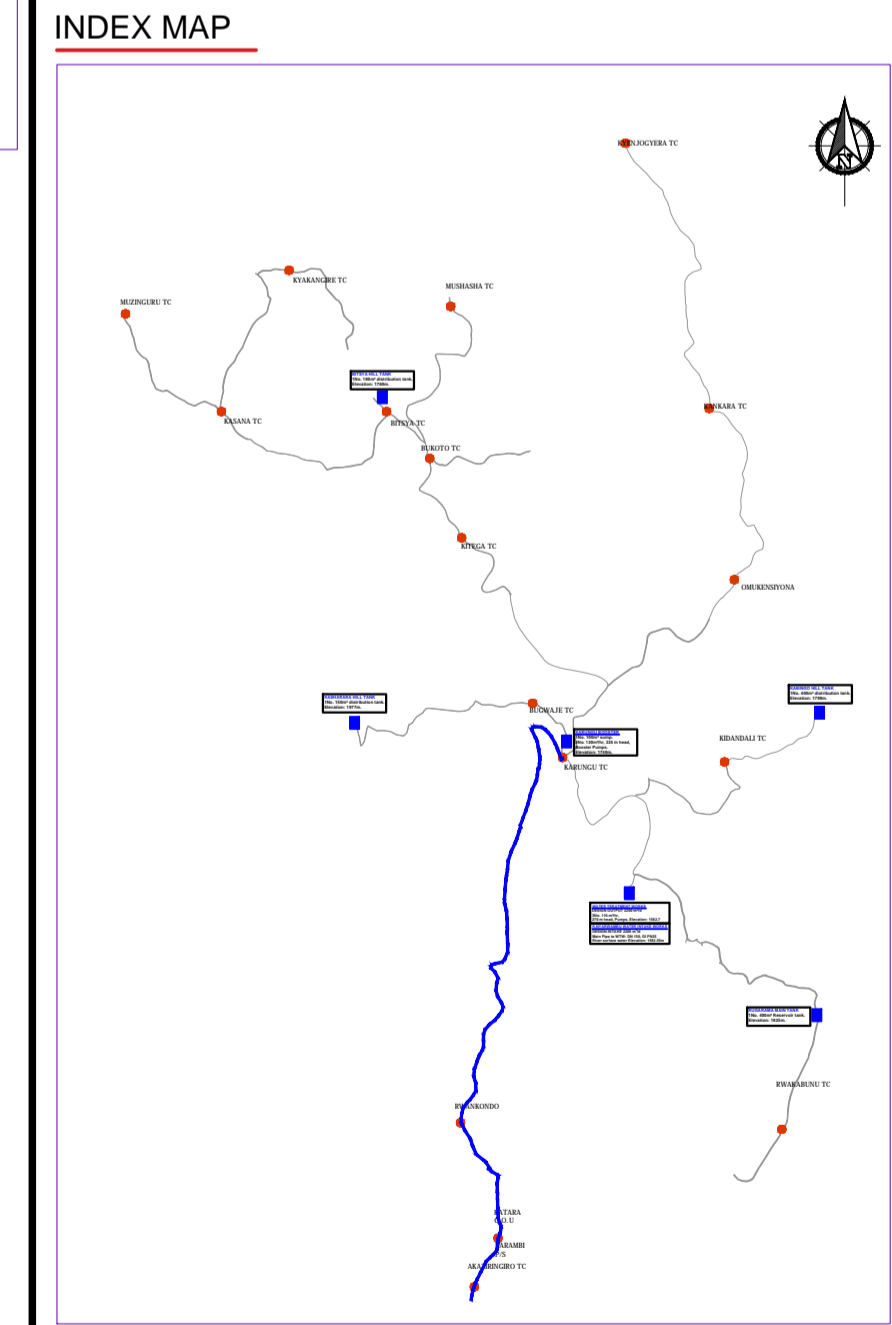
DISTRIBUTION LINE DL_06



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

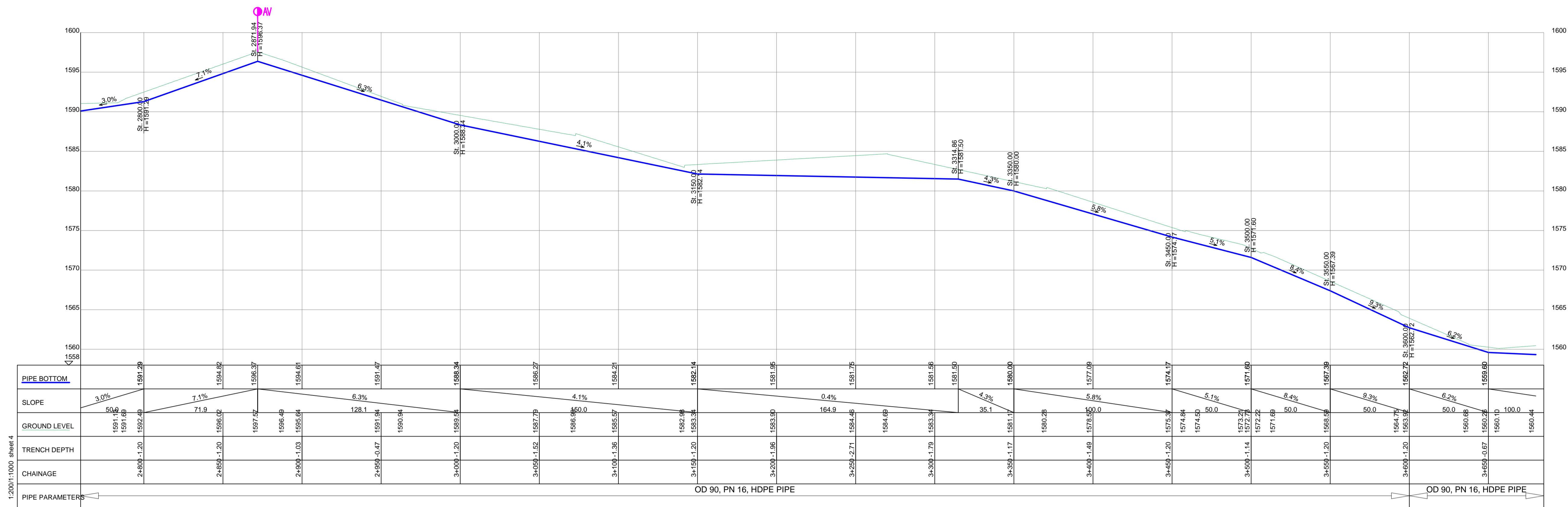
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

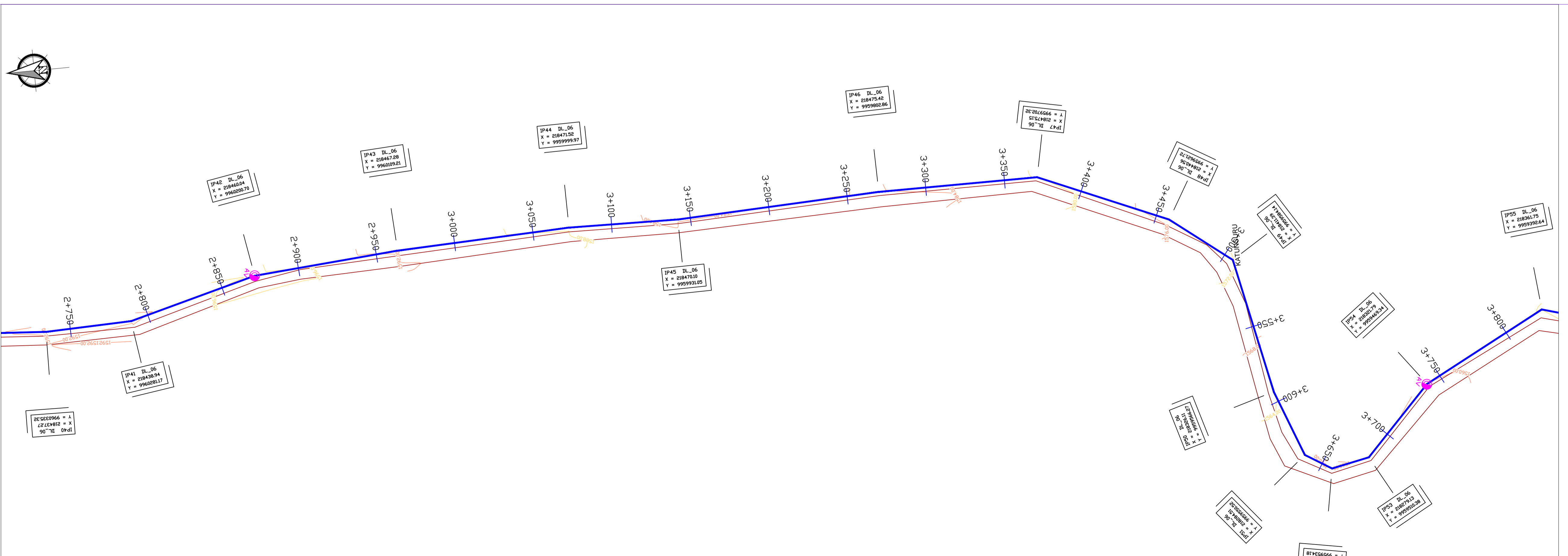
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_06

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL06-03 Date: SEPT 2021



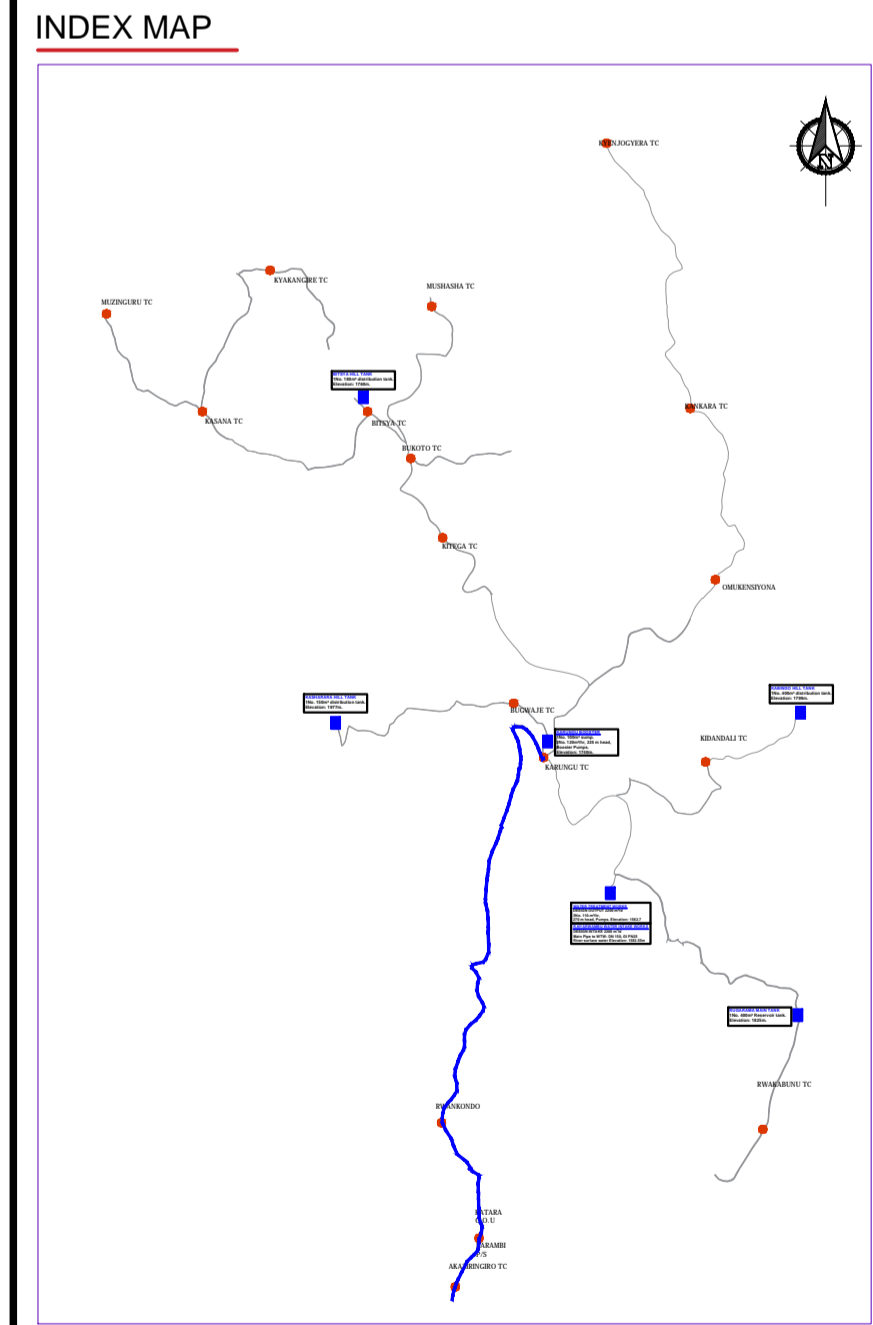
DISTRIBUTION LINE DL_06



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



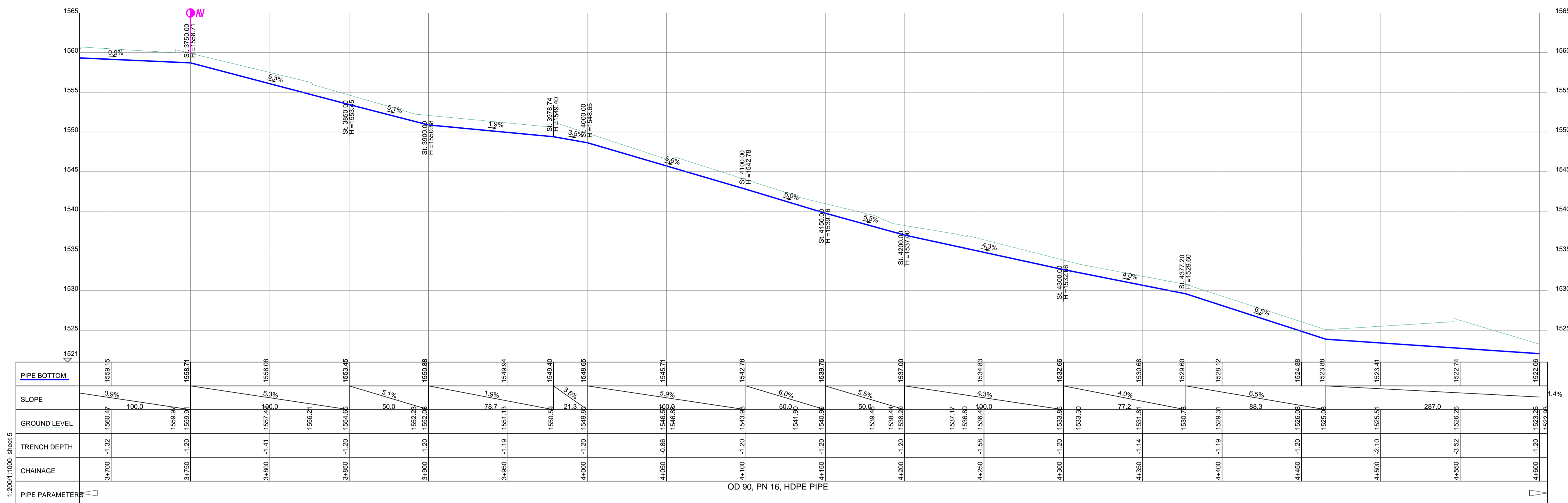
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

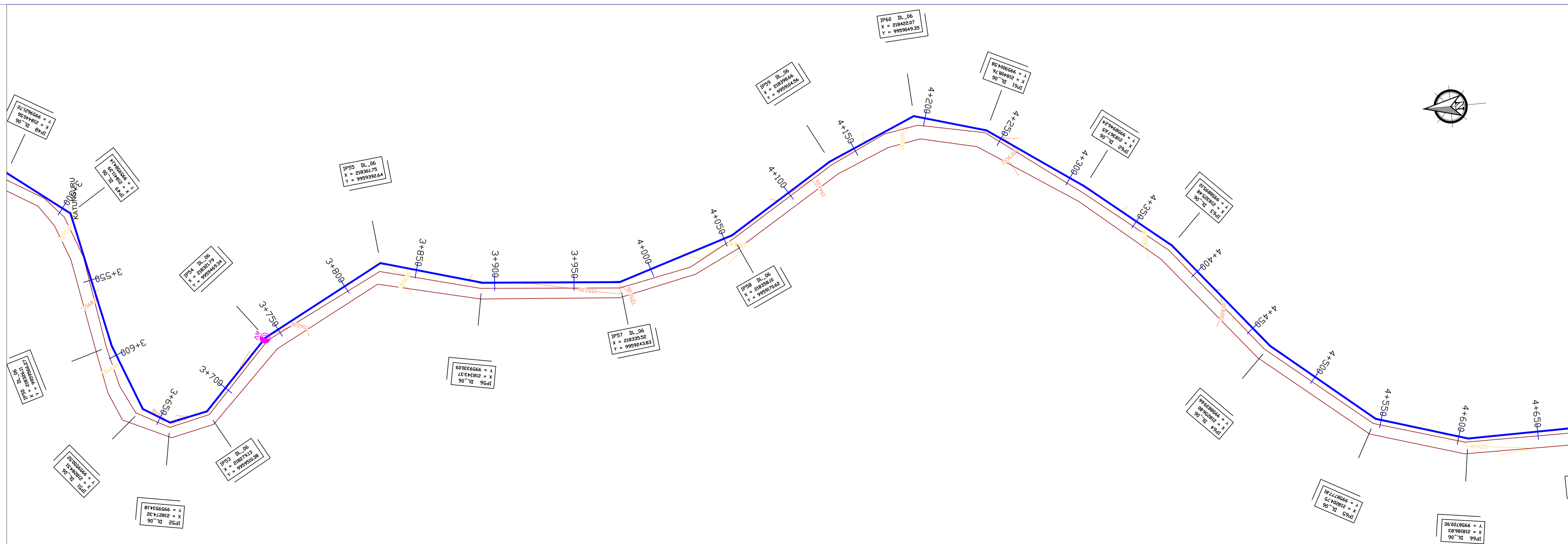
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_06

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL06-04 Date: SEPT 2021



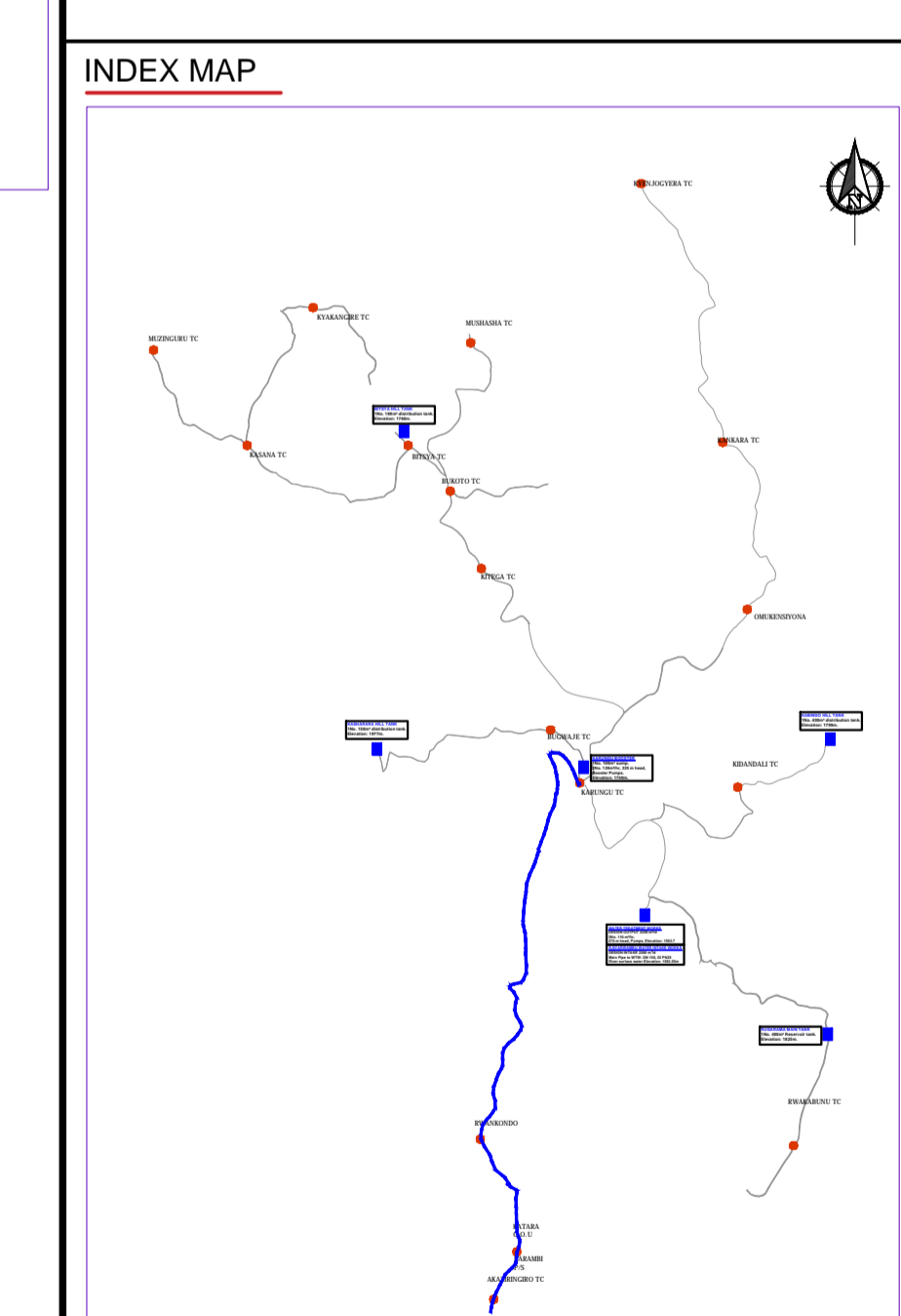
DISTRIBUTION LINE DL_06



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
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- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

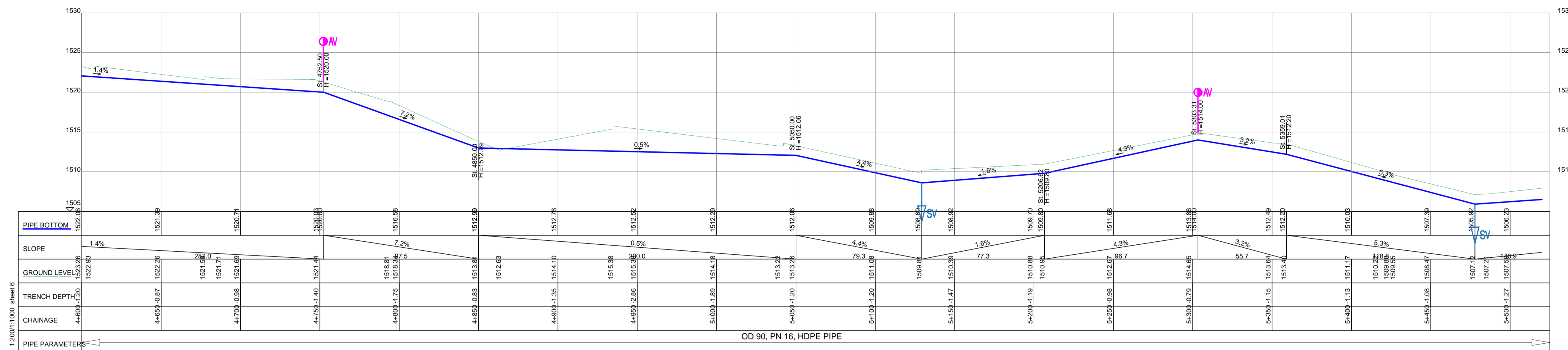
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

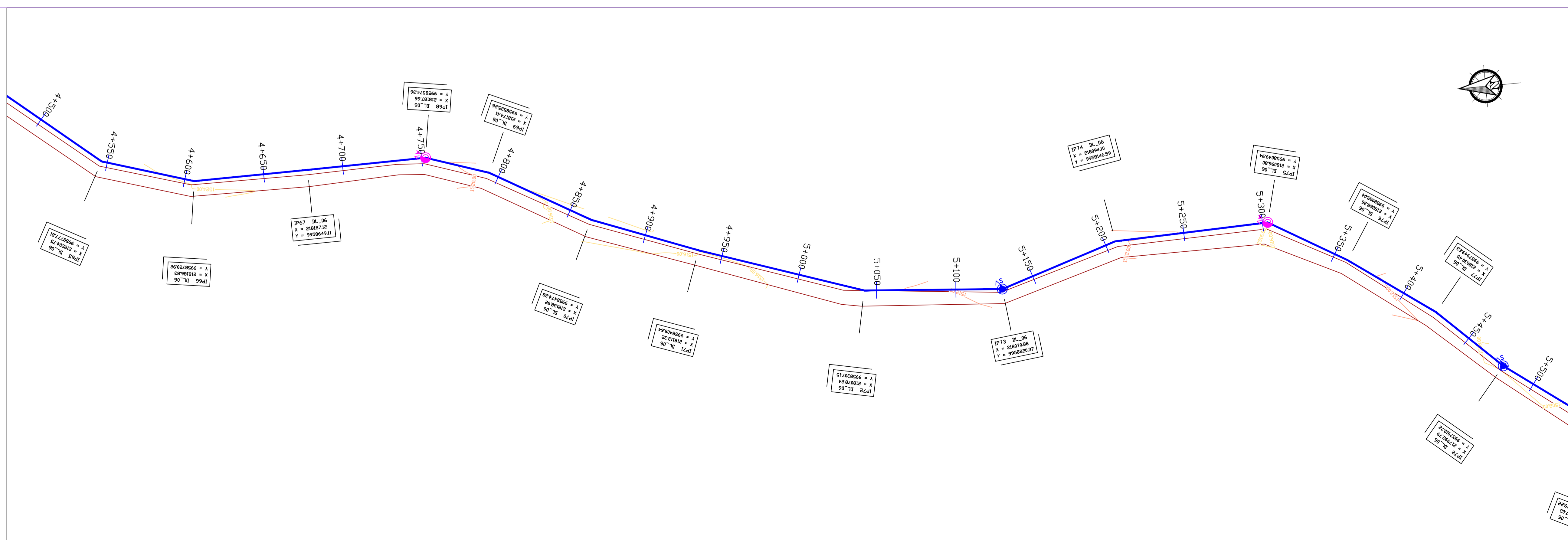
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_06

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
TEL: 256 41 220208,
FAX: 256 41 220208,
P.O. BOX 6582,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL06-05 Date: SEPT 2021



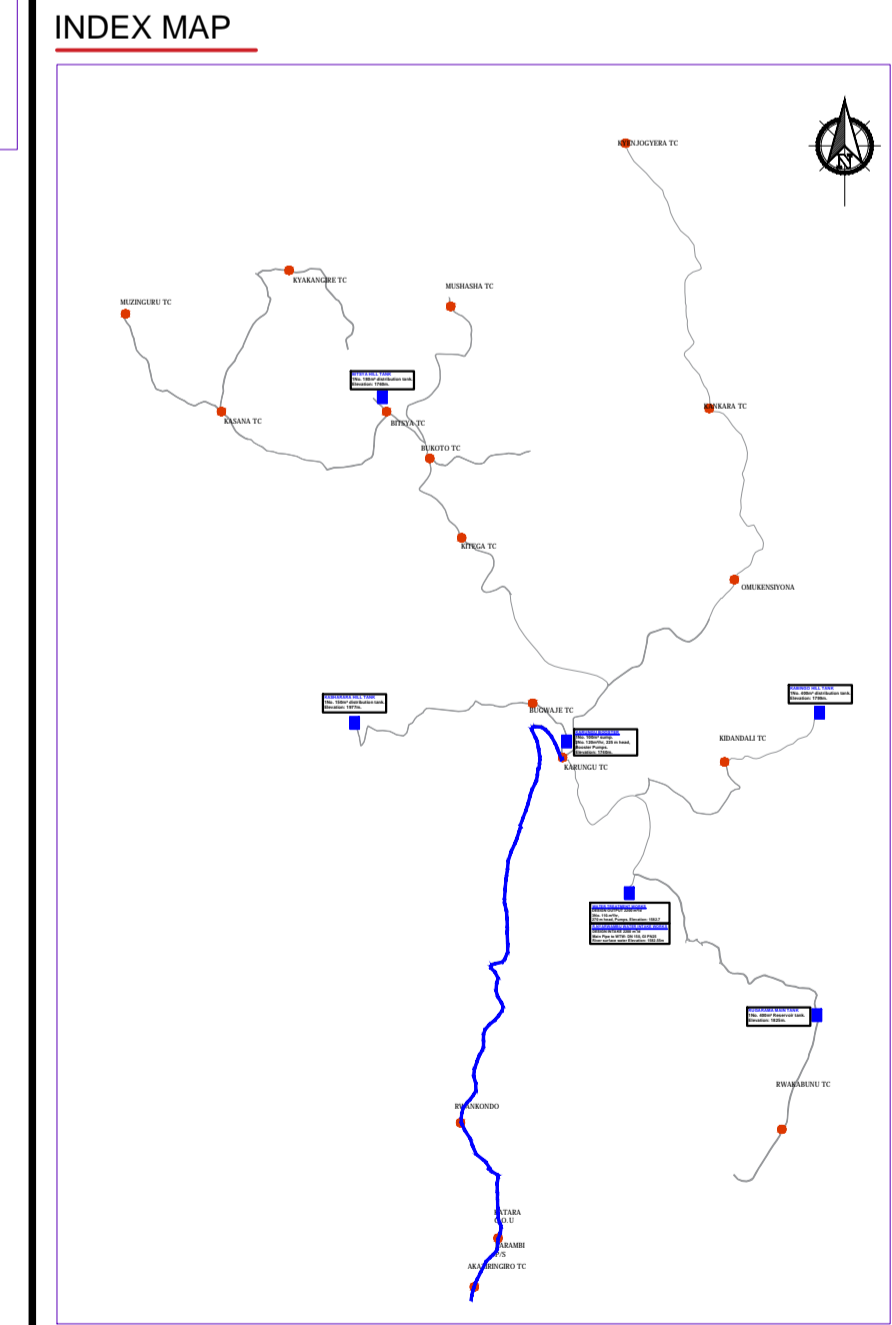
DISTRIBUTION LINE DL_06



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

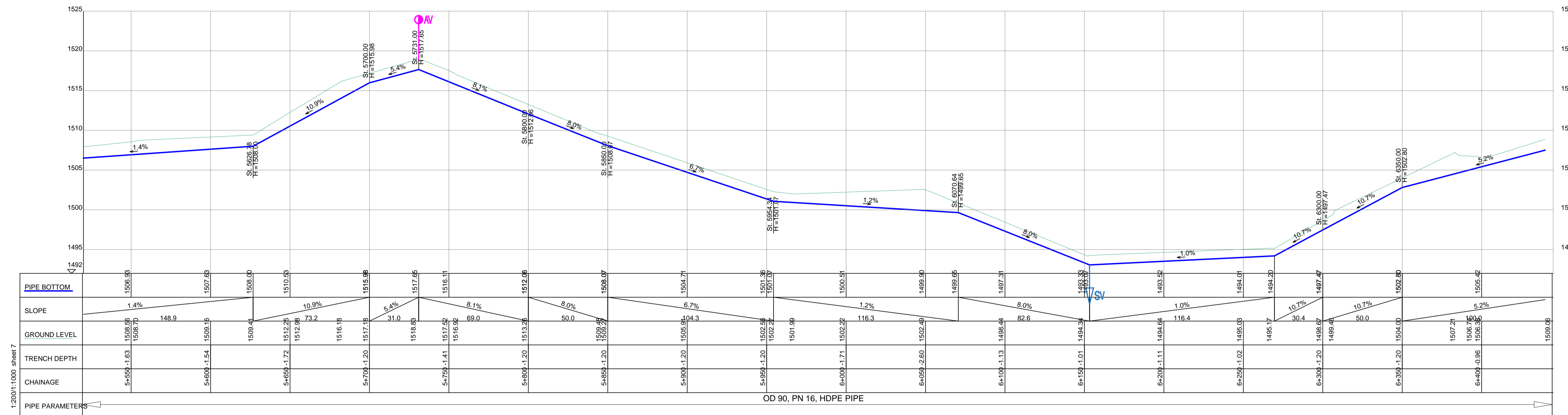
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_06**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL06-06 Date: SEPT 2021



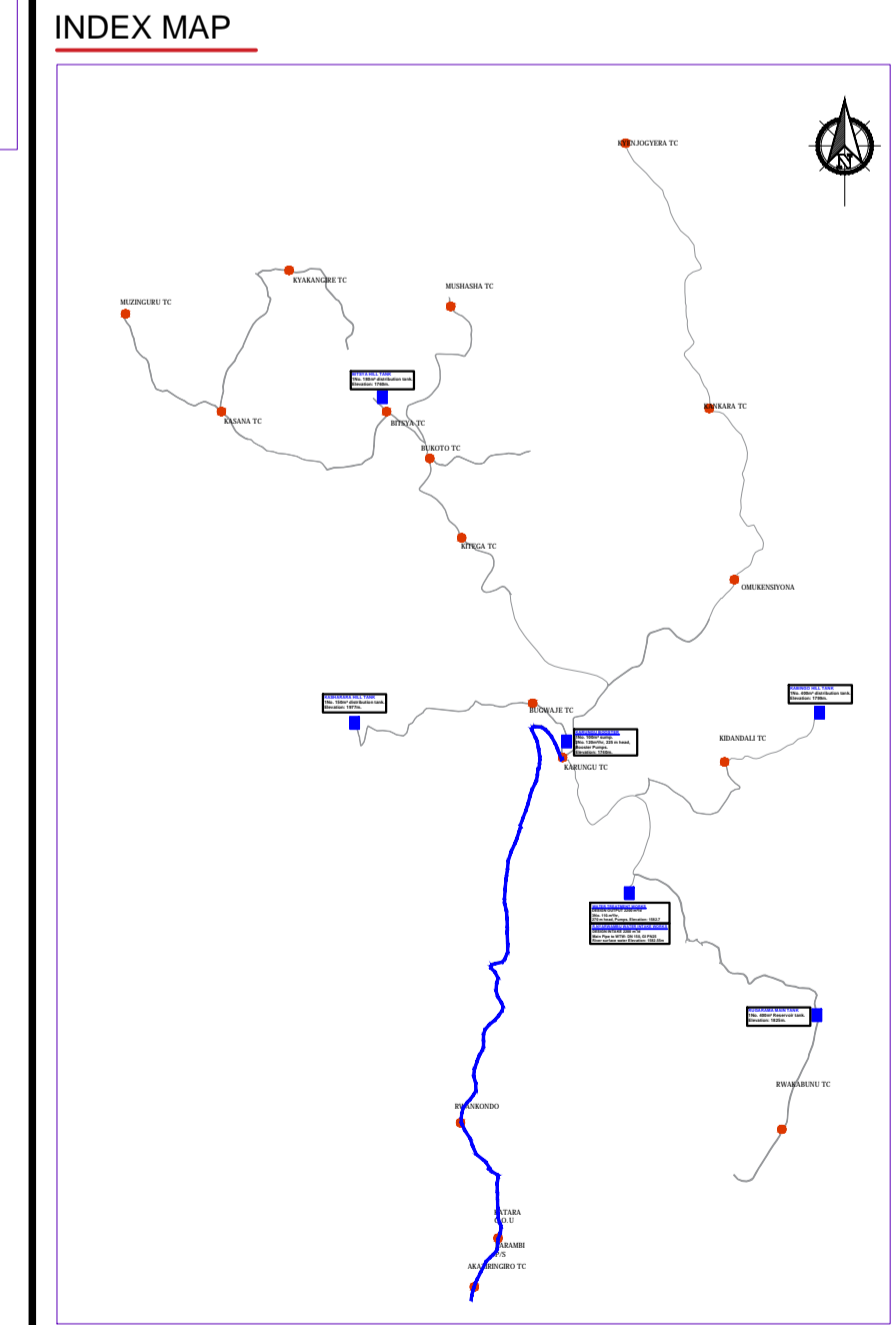
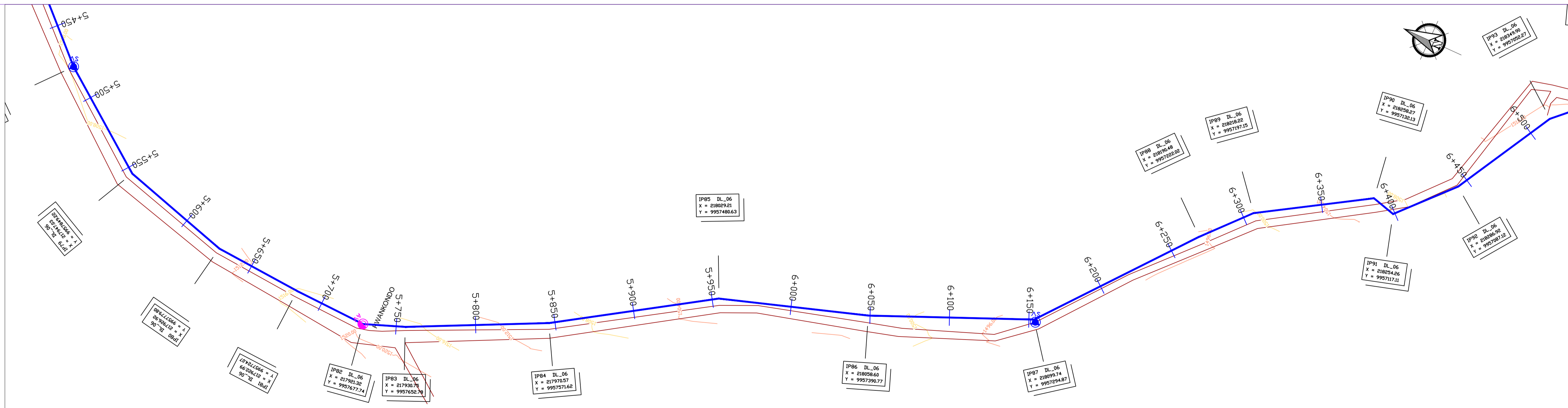
DISTRIBUTION LINE DL_06

1:200/1:1000 sheet 7

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
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- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

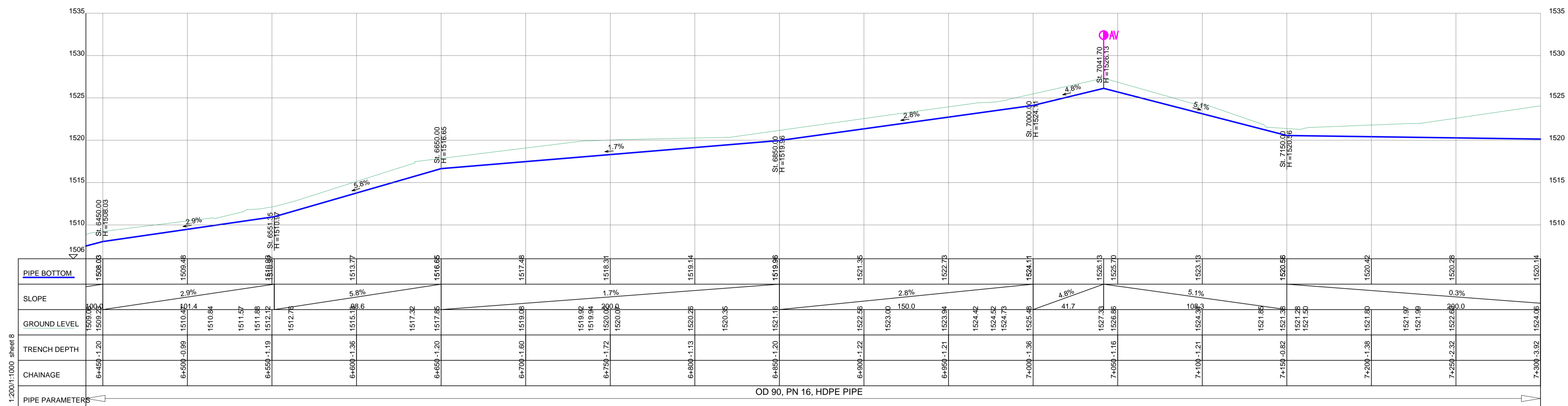
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_06**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL06-07 Date: SEPT 2021

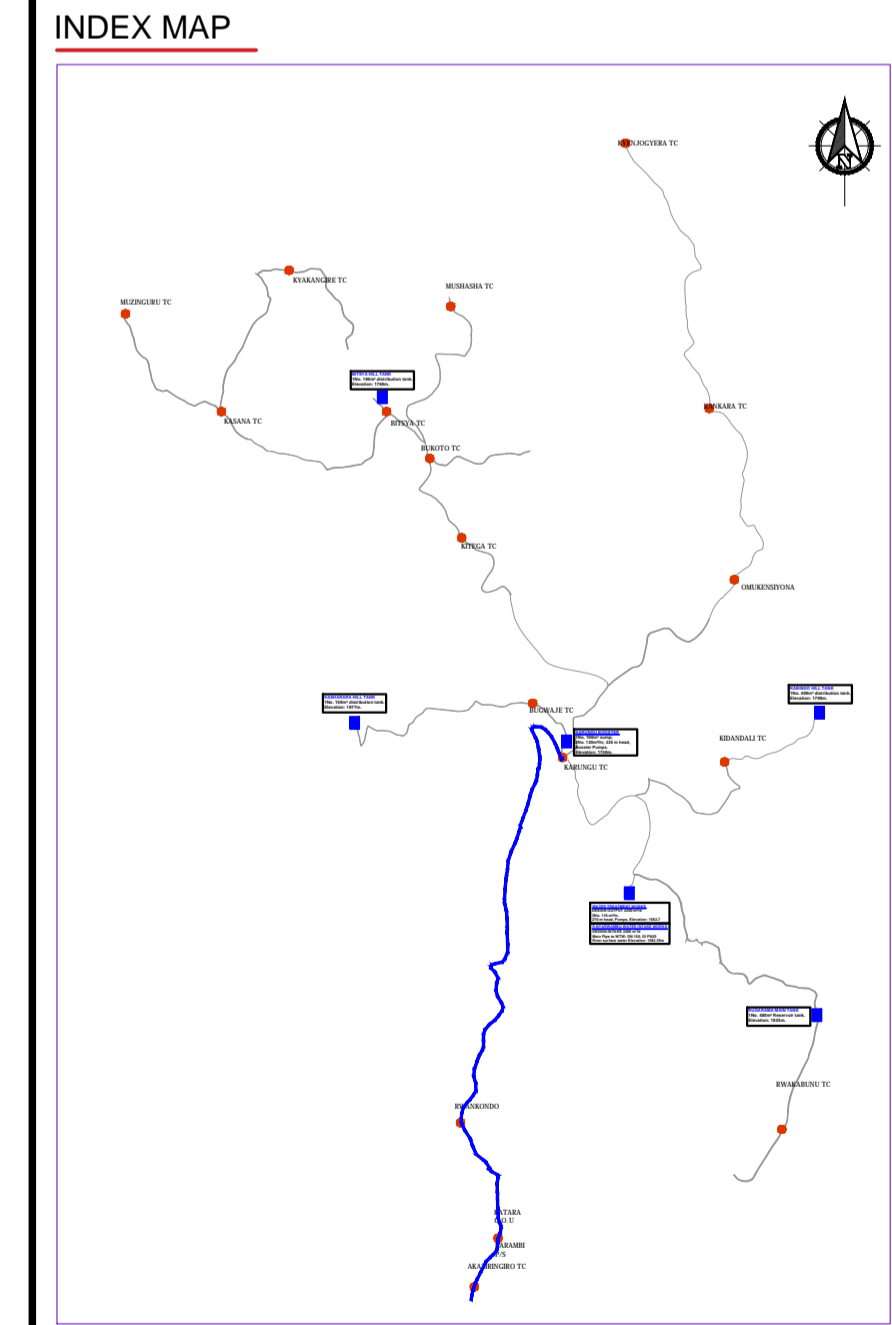
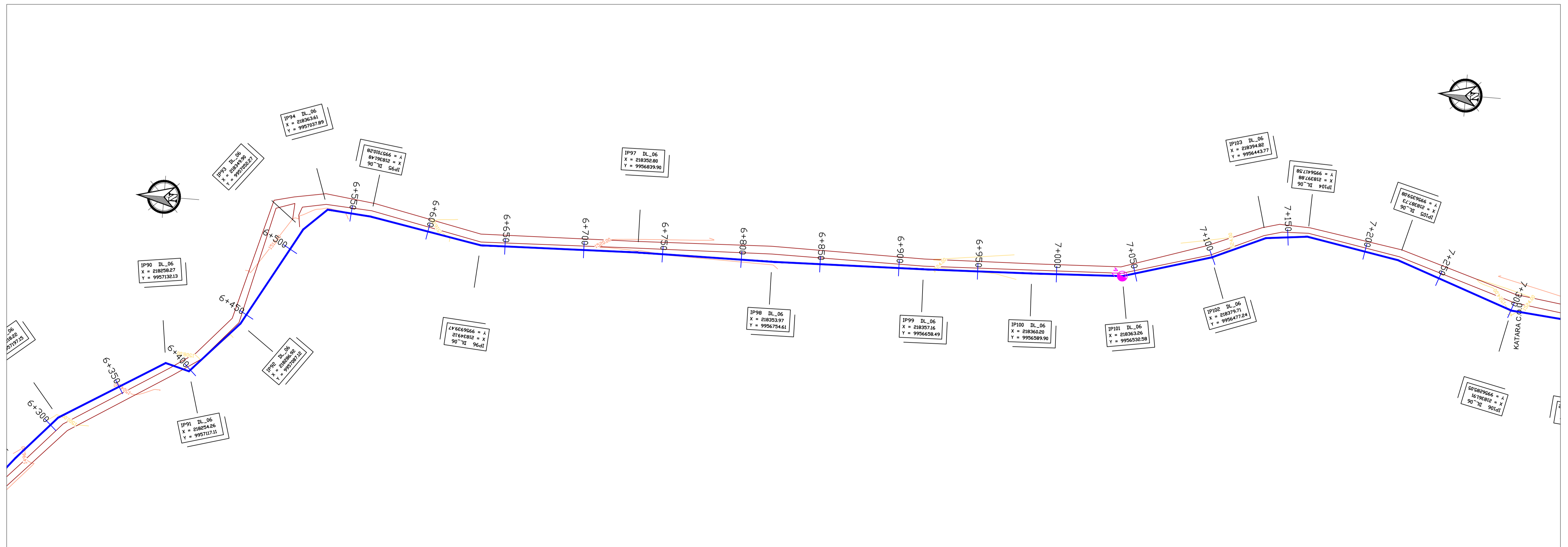


DISTRIBUTION LINE DL_06

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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Scale: Horizontal 1 : 1000
Vertical 1 : 100

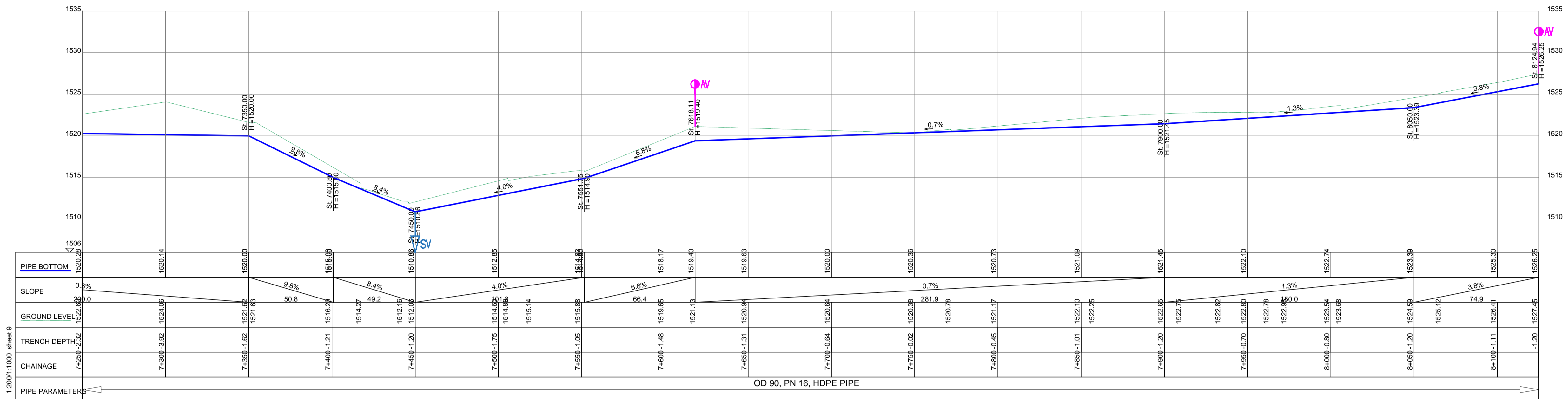
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

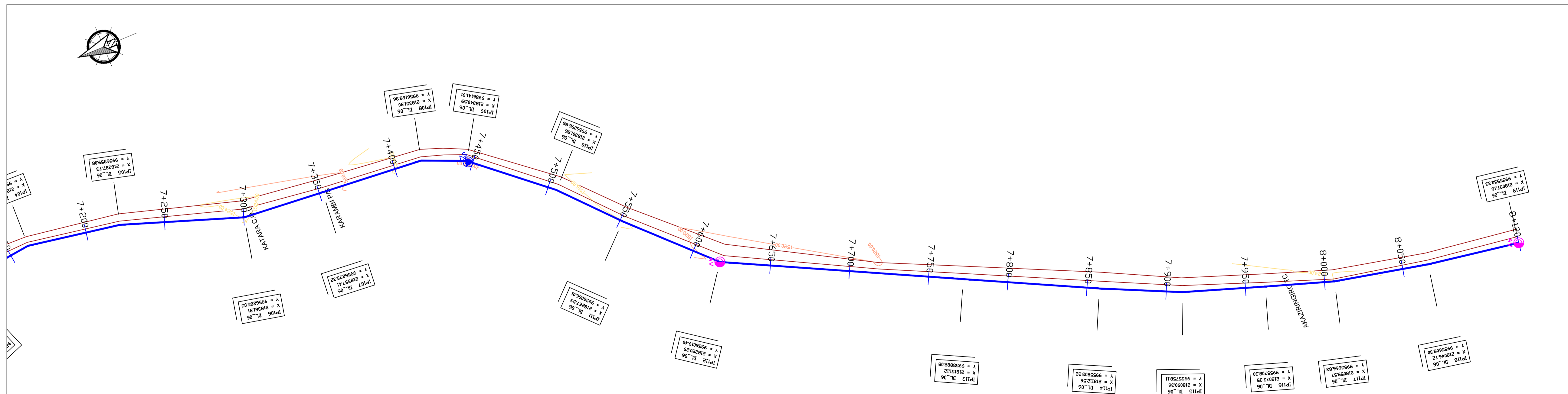
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_06

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAII CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL06-08 Date: SEPT 2021



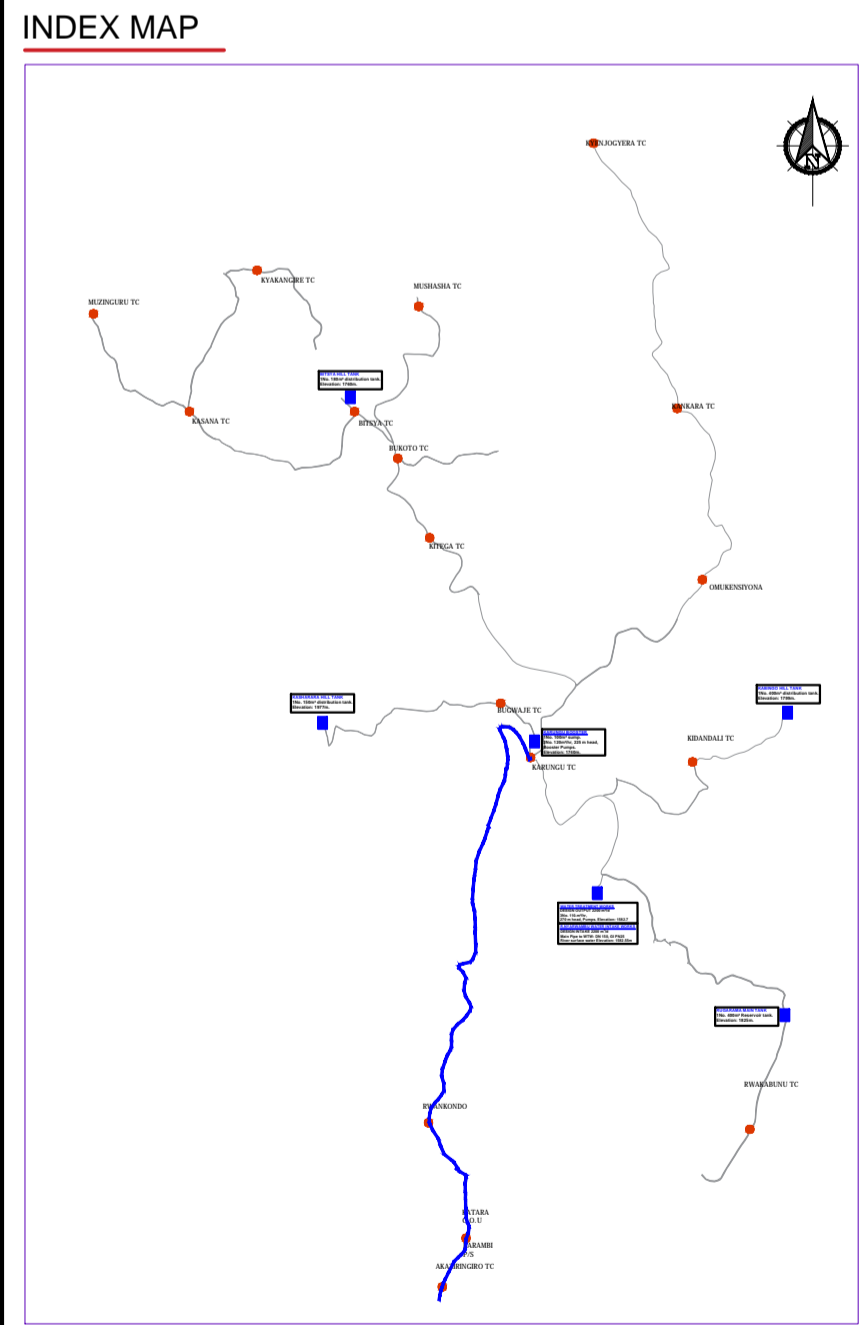
DISTRIBUTION LINE DL_06



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
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- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
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- PIPE CROSS-JUNCTION On Profile View

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

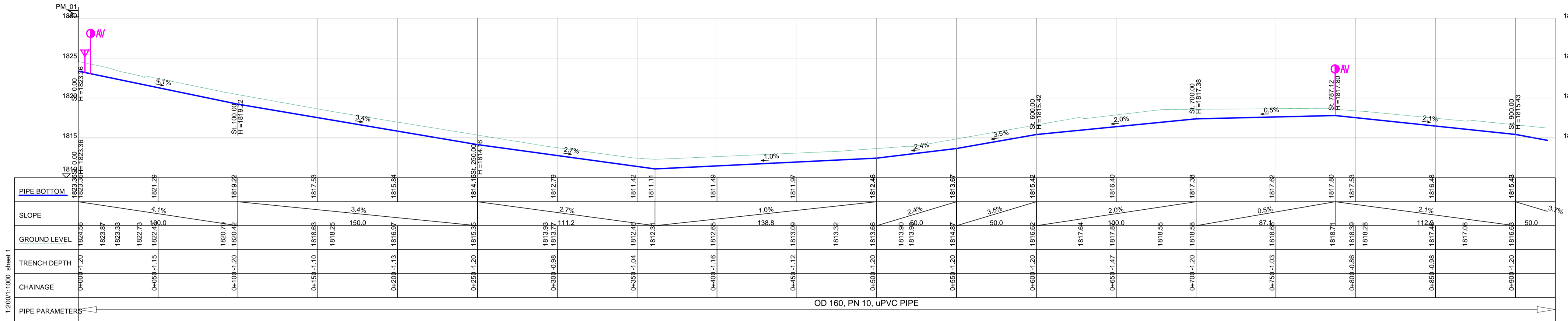
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_06

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL06-09 Date: SEPT 2021



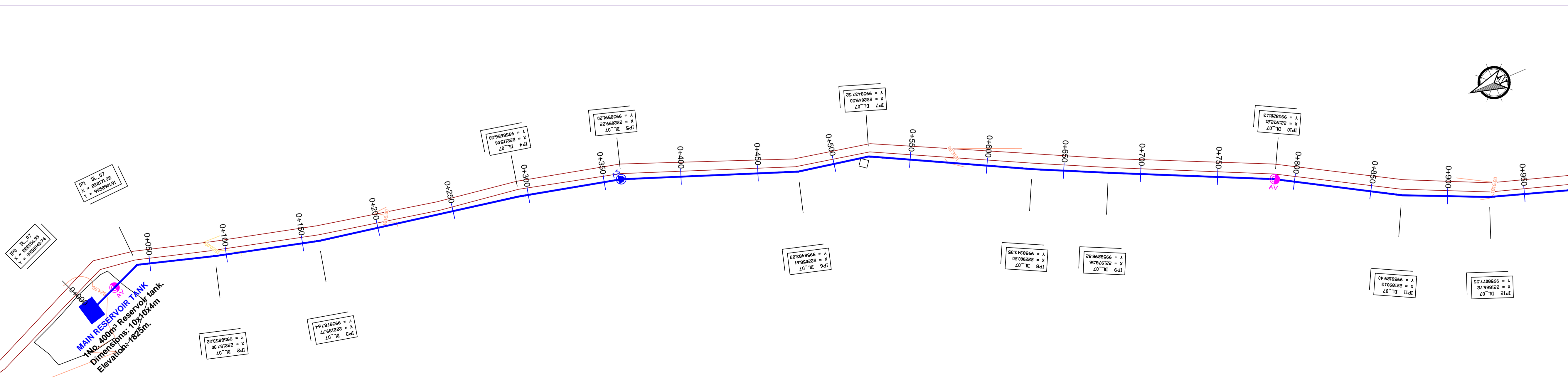
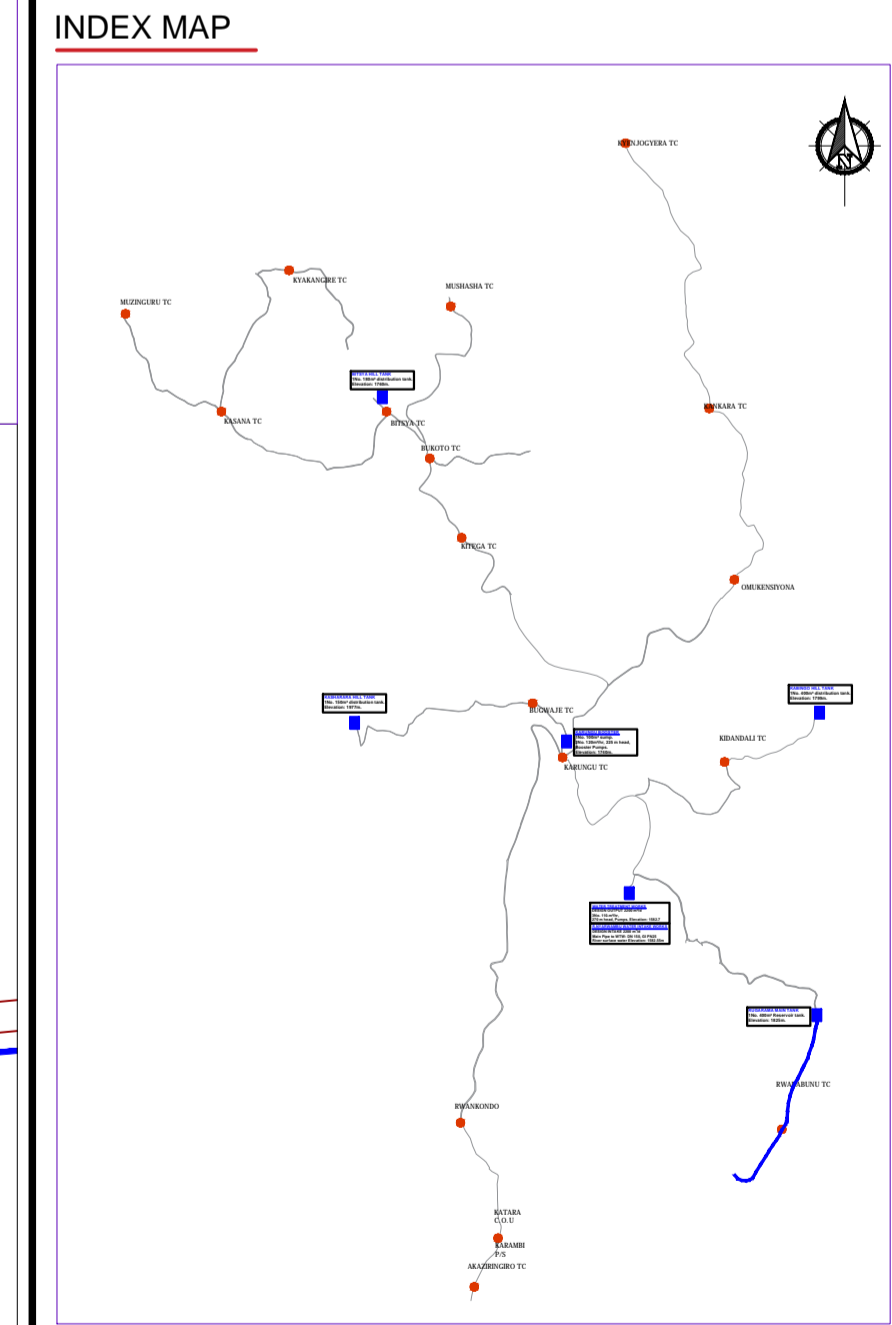
DISTRIBUTION LINE DL_07

1:2000:1:1000 sheet 1

LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

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 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



MAIN RESERVOIR TANK
No. 400m³ Reservoir tank.
Dimensions: 10x70x3m.
Elevation: 1823.5m.

Scale: Horizontal 1 : 1000
Vertical 1 : 100

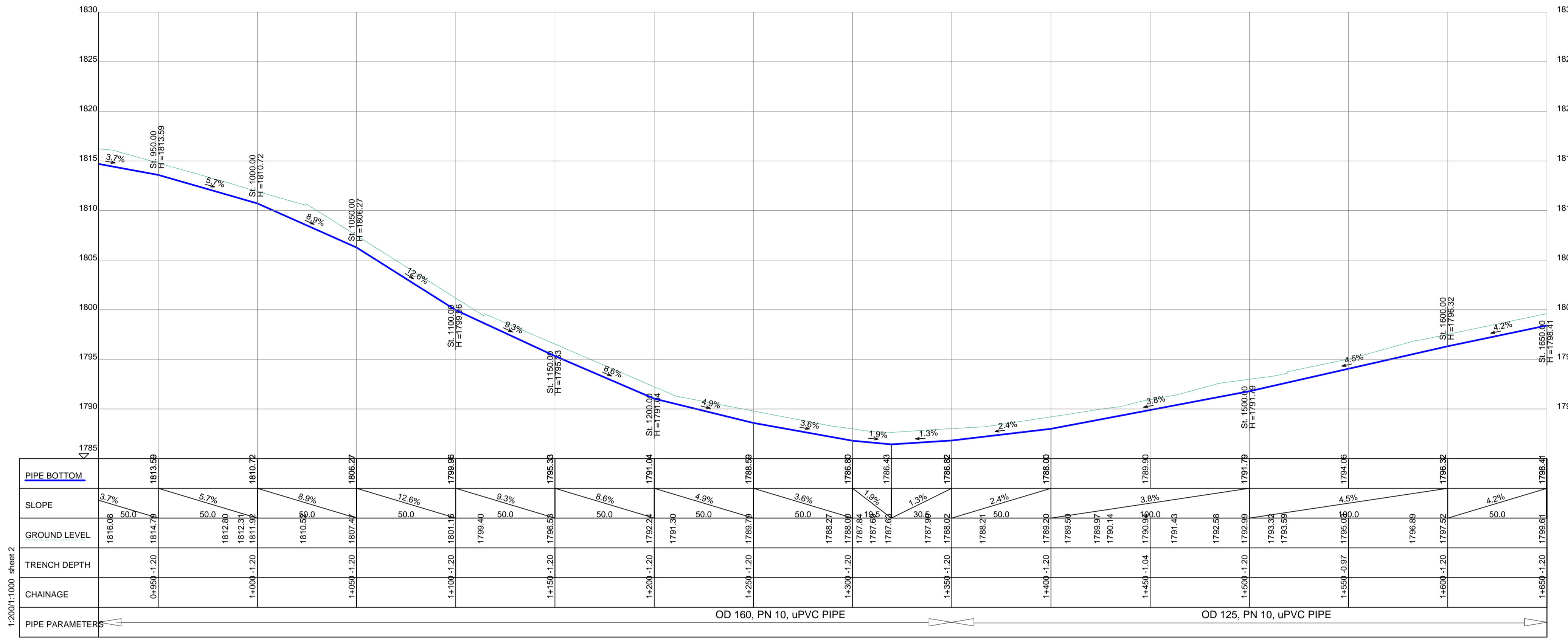
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

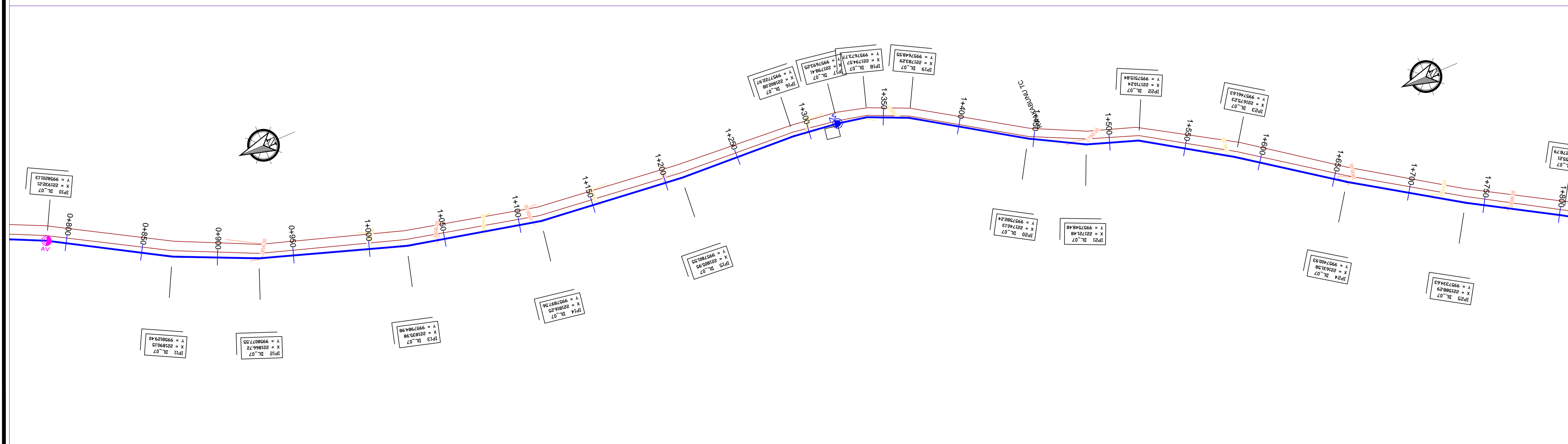
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_07**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAALI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 4585,
KAMPALA, UGANDA.

DRG. NO. KP/BWS/PP/DL07-01 Date: SEPT 2021



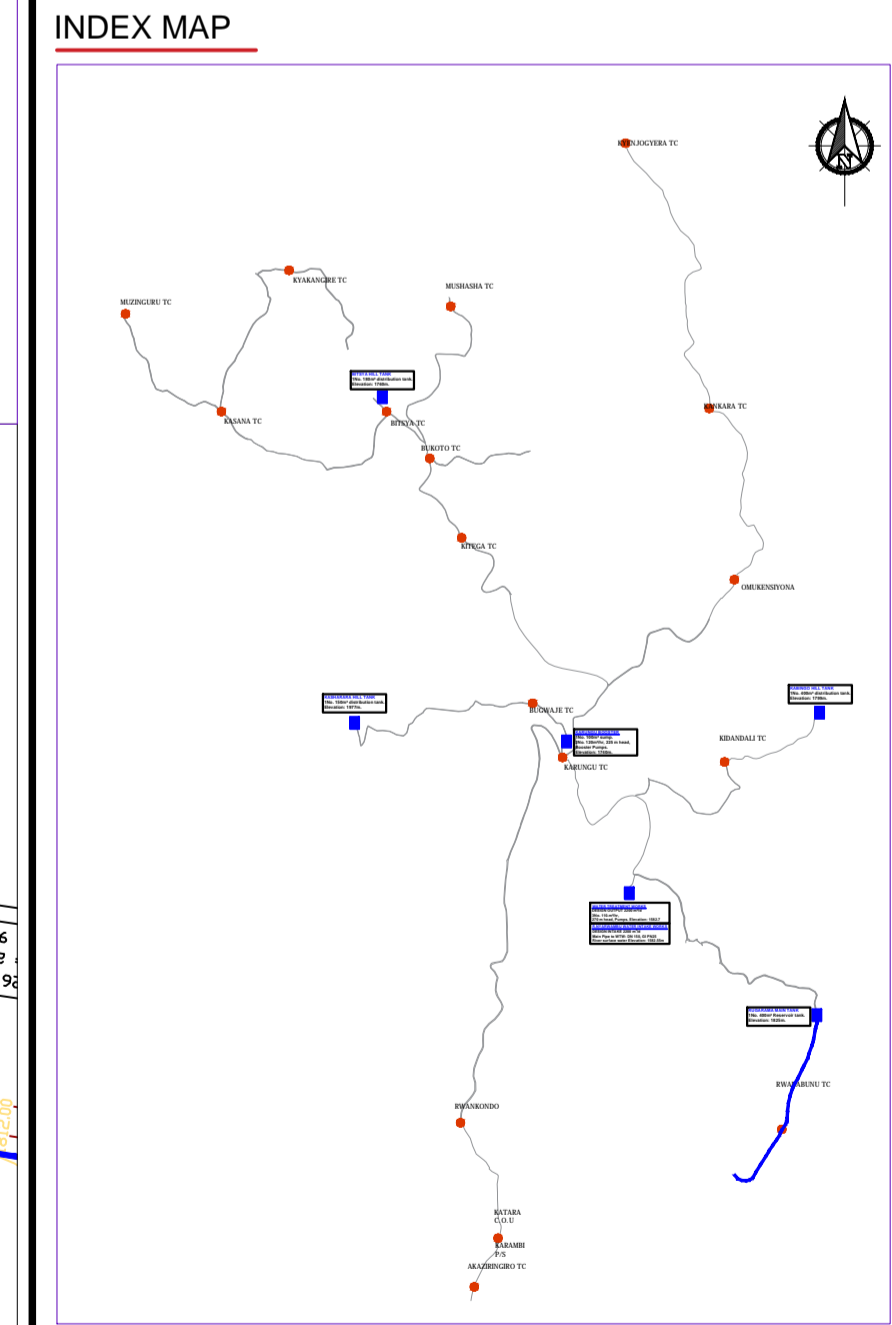
DISTRIBUTION LINE DL_07



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
 - NORMAL DEPTH OF COVER TO PIPELINE IS 0.9M
 - FOR JUNCTION DETAILS REFER TO DRAWINGS NOS. KP/BWS/JD-01 TO KP/BWS/JD-05
 - THE CONTRACTOR TO CARRY OUT HIS OWN SITE INVESTIGATION BEFORE COMMENCING WORK TO ESTABLISH THE GROUND CONDITIONS AND LOCATION OF EXISTING SERVICES.
 - THE CONTRACTOR TO LIAISE WITH SERVICES AUTHORITIES TO ESTABLISH THE LOCATION OF EXISTING SERVICES
 - REFER TO AUXILIARY WORKS DRAWINGS FOR ANCHORAGE TO PIPELINES, AIR VALVES DETAILS, PIPE PEDESTALS, PULLEY SUPPORT, TRENCH DETAILS, VALVE CHAMBERS, WASHOUT CHAMBERS AND WATER METERS.
 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



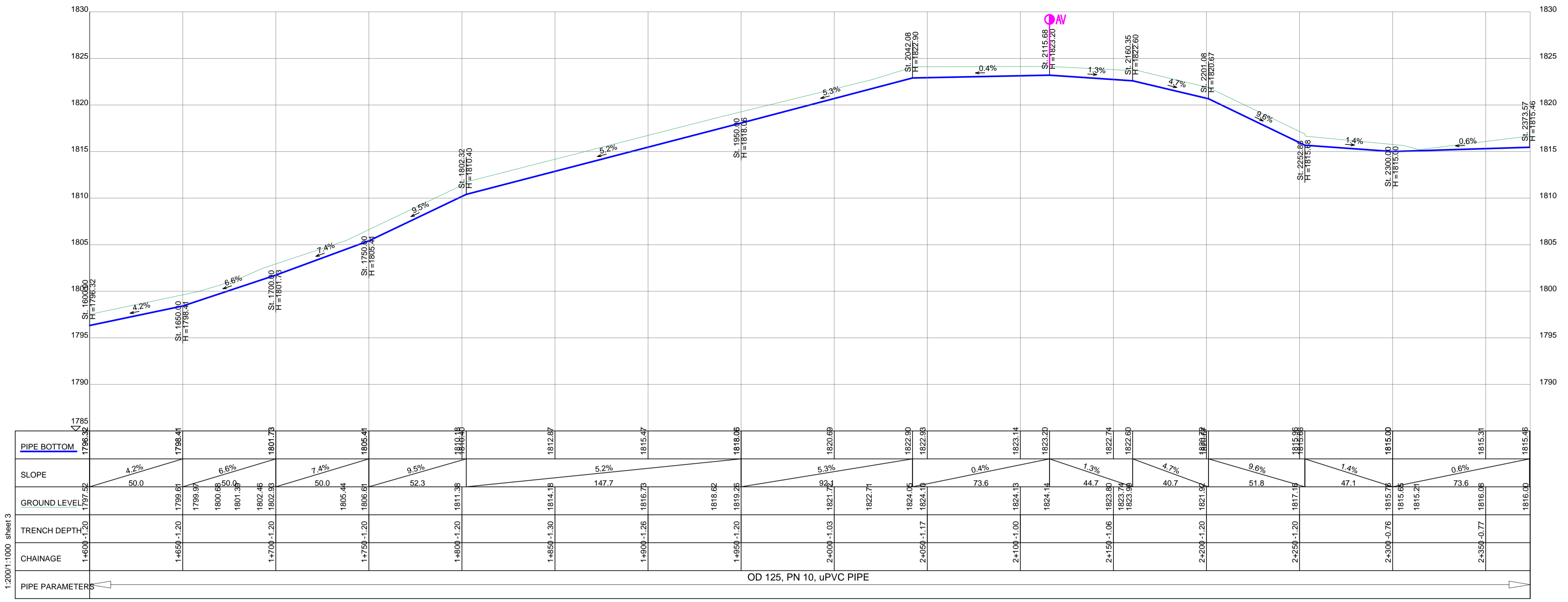
Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

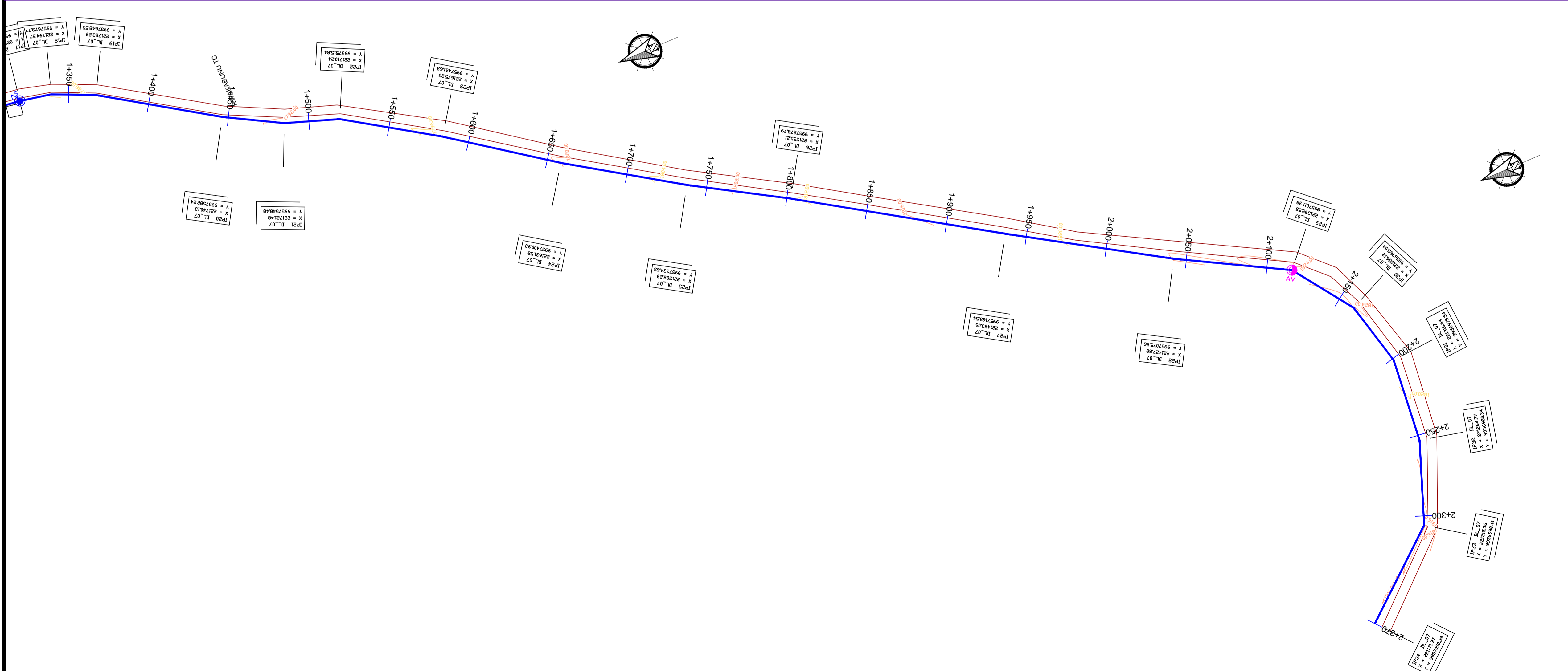
Title: **PLAN PROFILE OF PIPE LINE DISTRIBUTION MAIN DL_07**

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 45851,
KAMPALA, UGANDA.

DRG. NO: KP/BWS/PP/DL07-02 Date: SEPT 2021



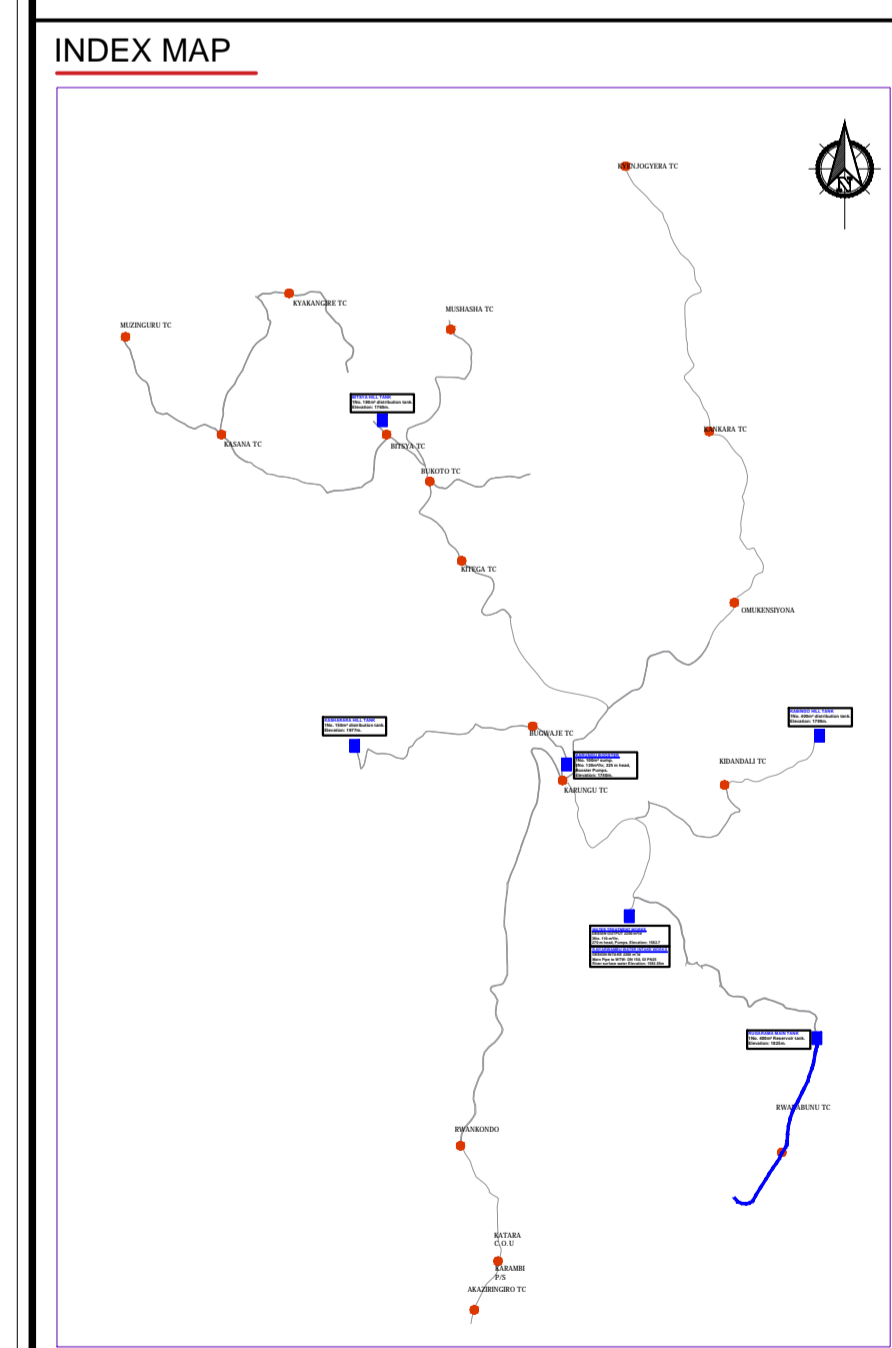
DISTRIBUTION LINE DL_07



LEGEND

- GROUND LEVEL
- PIPE TOP
- PIPE BOTTOM
- TRENCH BOTTOM
- JUNCTION LOCATIONS
- AIR VALVE On Profile View
- AIR VALVE On Plan View
- SCOUR VALVE On Profile View
- SCOUR VALVE On Plan View
- ISOLATION VALVE On Profile View
- ISOLATION VALVE On Plan View
- ANTI-SURGE VALVE On Profile View
- ANTI-SURGE VALVE On Plan View
- PIPE T-JUNCTION On Profile View
- PIPE CROSS-JUNCTION On Profile View

- NOTES**
- THE DRAWINGS MUST BE READ IN CONJUNCTION WITH SPECIFICATION AND BILL OF QUANTITIES
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 - THE CONTRACTOR SHALL ALLOW FOR SEARCHING AND LOCATING FOR EXISTING DOMESTIC SERVICES TO BE RE-CONNECTED TO THE NEW MAINS.
 - ROAD OPENING LICENSES TO BE OBTAINED FROM RESPECTIVE AUTHORITIES BY THE CONTRACTOR



Scale: Horizontal 1 : 1000
Vertical 1 : 100

Client: **REPUBLIC OF UGANDA**
MINISTRY OF WATER AND ENVIRONMENT

Project: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

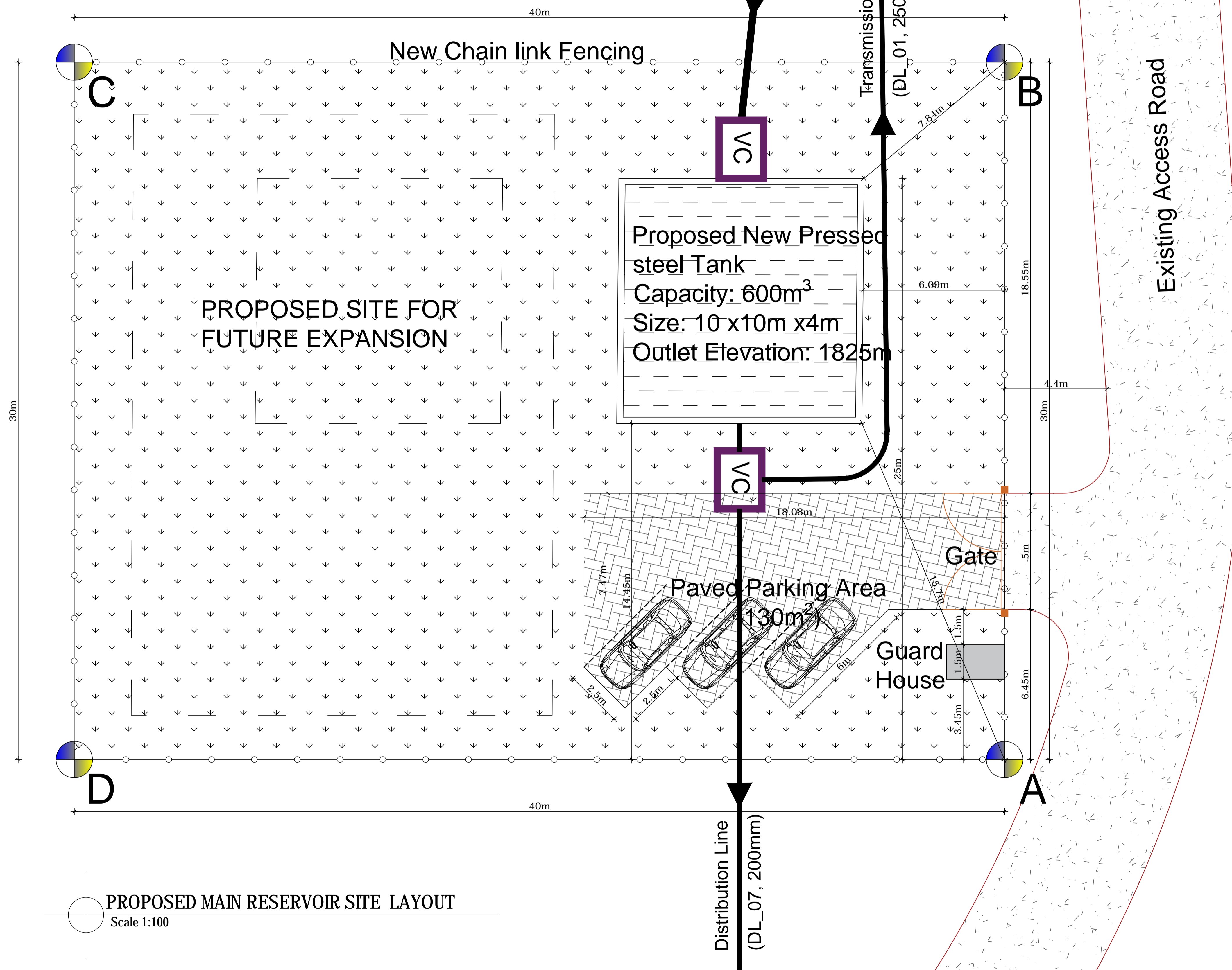
Title: **PLAN PROFILE OF PIPE LINE**
DISTRIBUTION MAIN DL_07

Consultants: **KAGGA & PARTNERS**
PLOT 2, BANDAHI CLOSE GOLD PORT BELL ROAD,
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6585,
KAMPALA, UGANDA.

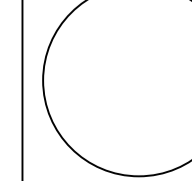
DRG. NO. KP/BWS/PP/DL07-03 Date /SEPT 2021

STORAGE RESERVOIRS

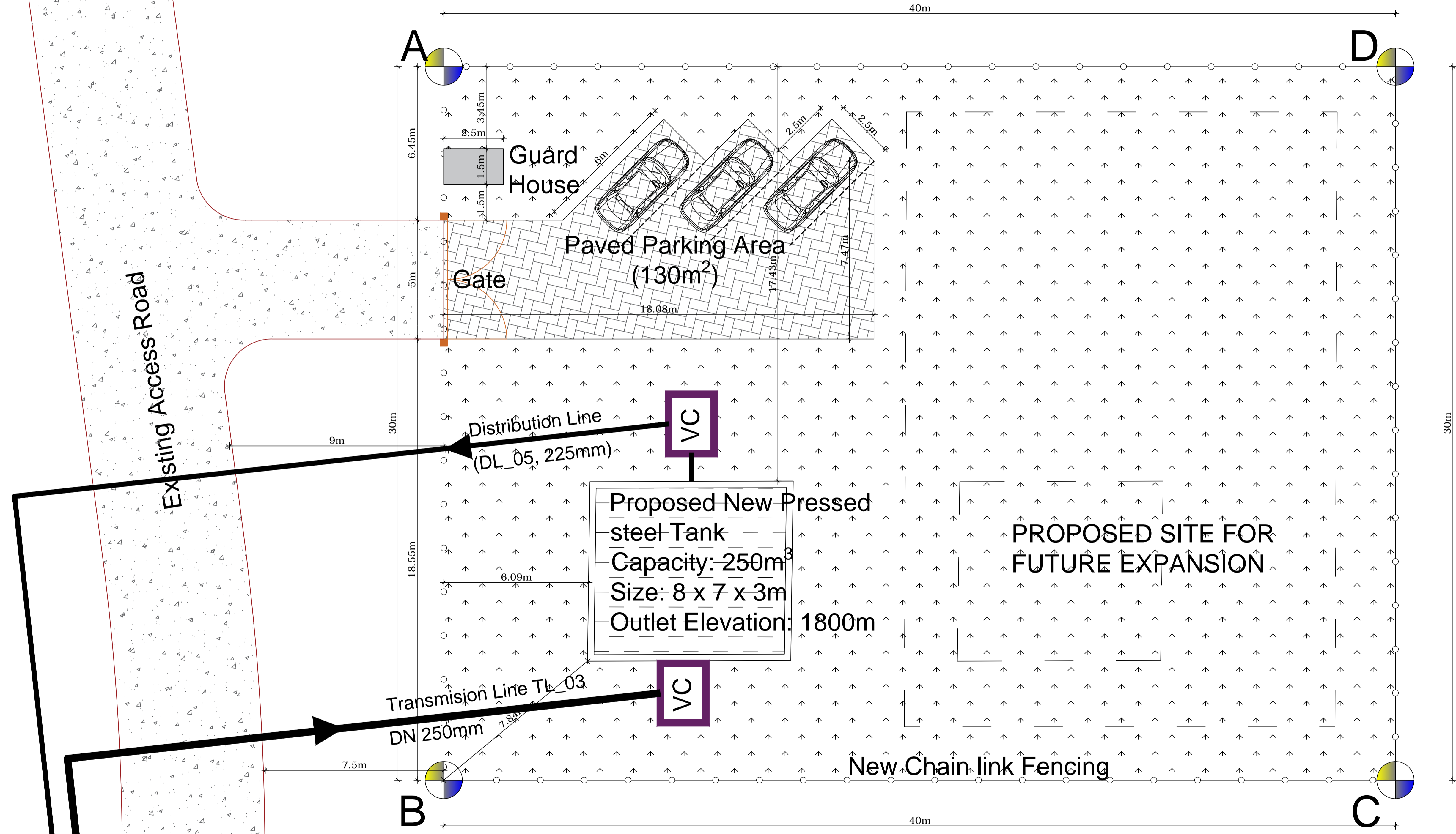
PROPOSED SITE CORNER SETTING OUT COORDINATES		
POINT	X-COORDINATE	Y-COORDINATE
A	222176.31	9958918.80
B	222166.12	9958947.02
C	222128.45	9958933.43
D	222138.69	9958905.22



PROPOSED MAIN RESERVOIR SITE LAYOUT
Scale 1:100

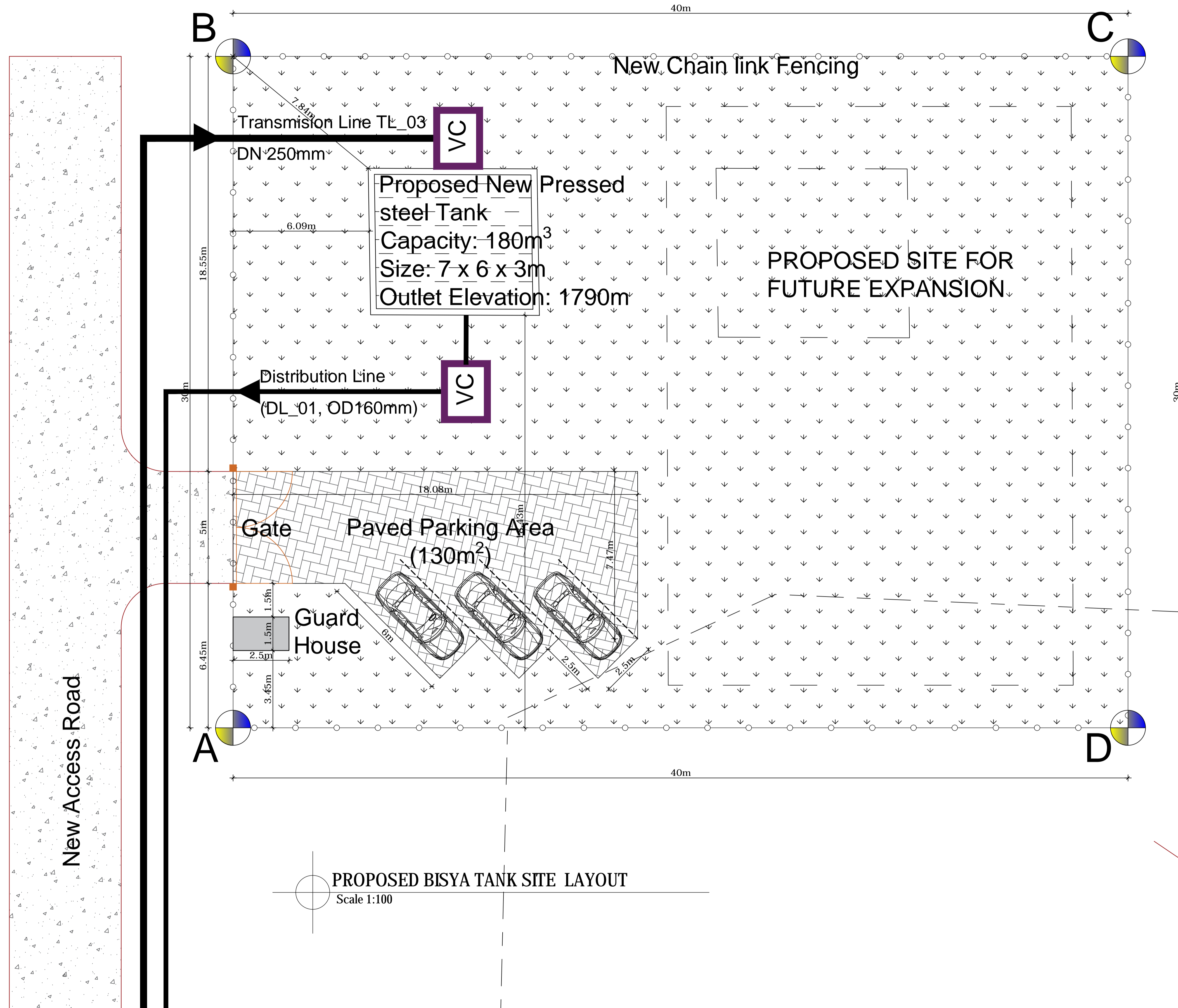


PROPOSED SITE CORNER SETTING OUT COORDINATES		
POINT	X-COORDINATE	Y-COORDINATE
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B	222162.20	9962516.37
C	222208.19	9962497.32
D	222219.67	9962525.03

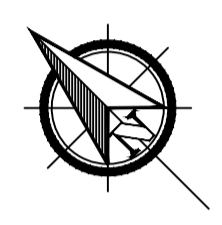


PROPOSED KIBINGO TANK SITE LAYOUT
Scale 1:100

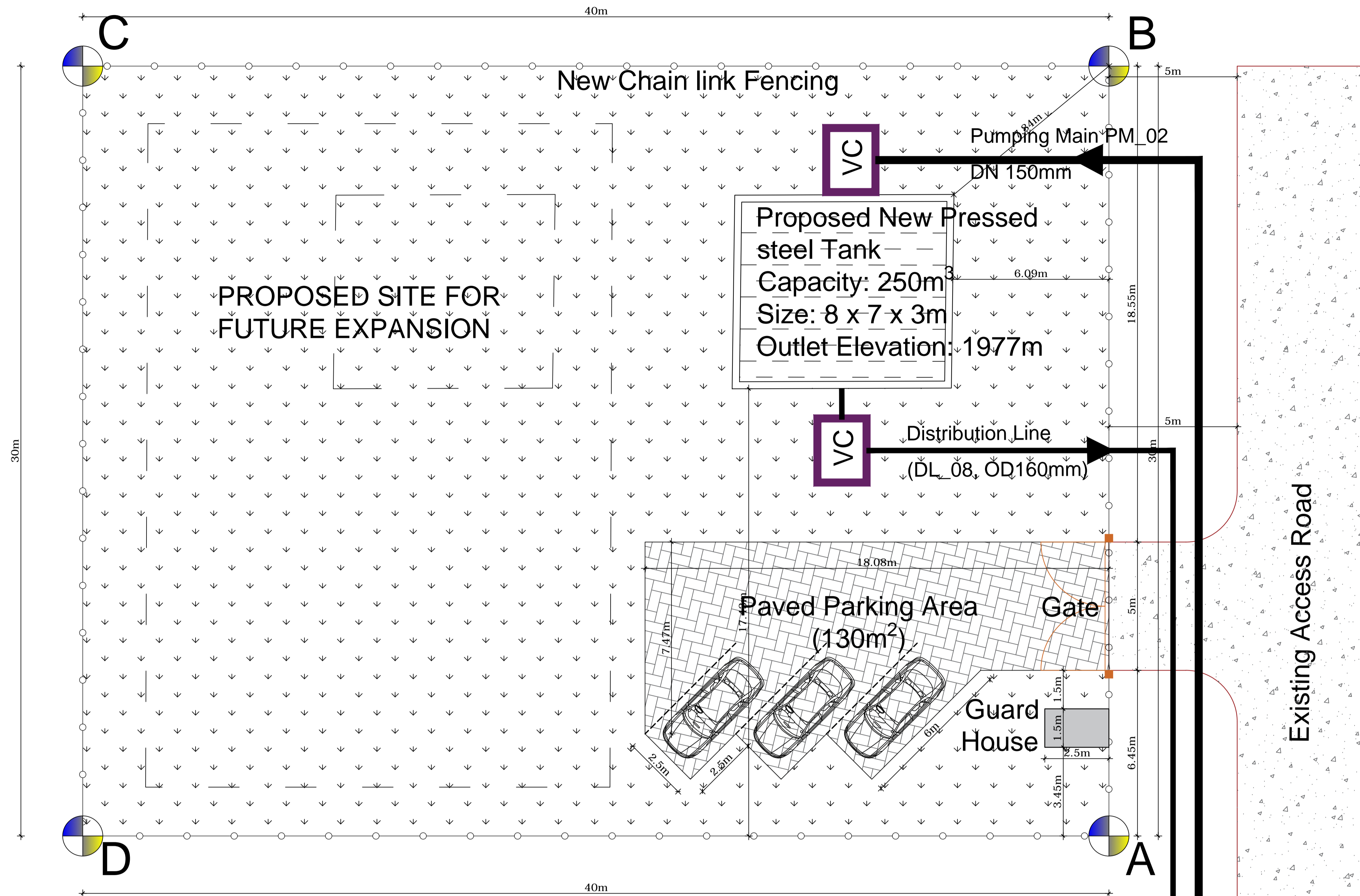
GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	KAGGA & PARTNERS  PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.	PROJECT:	CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM	REVISIONS	DATE:			SCALE:	DATUM	DWG. No.	SHEET
		DWG. TITLE		KIBINGO STORAGE TANK SITE LAYOUT			DRAWN BY:				
				CHECKED BY:	GS						
				APPROVED BY:	PJM						



PROPOSED SITE CORNER SETTING OUT COORDINATES		
POINT	X-COORDINATE	Y-COORDINATE
A	216951.87	9966351.95
B	216973.08	9966373.168
C	217001.37	9966344.88
D	216980.16	9966323.67

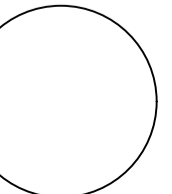


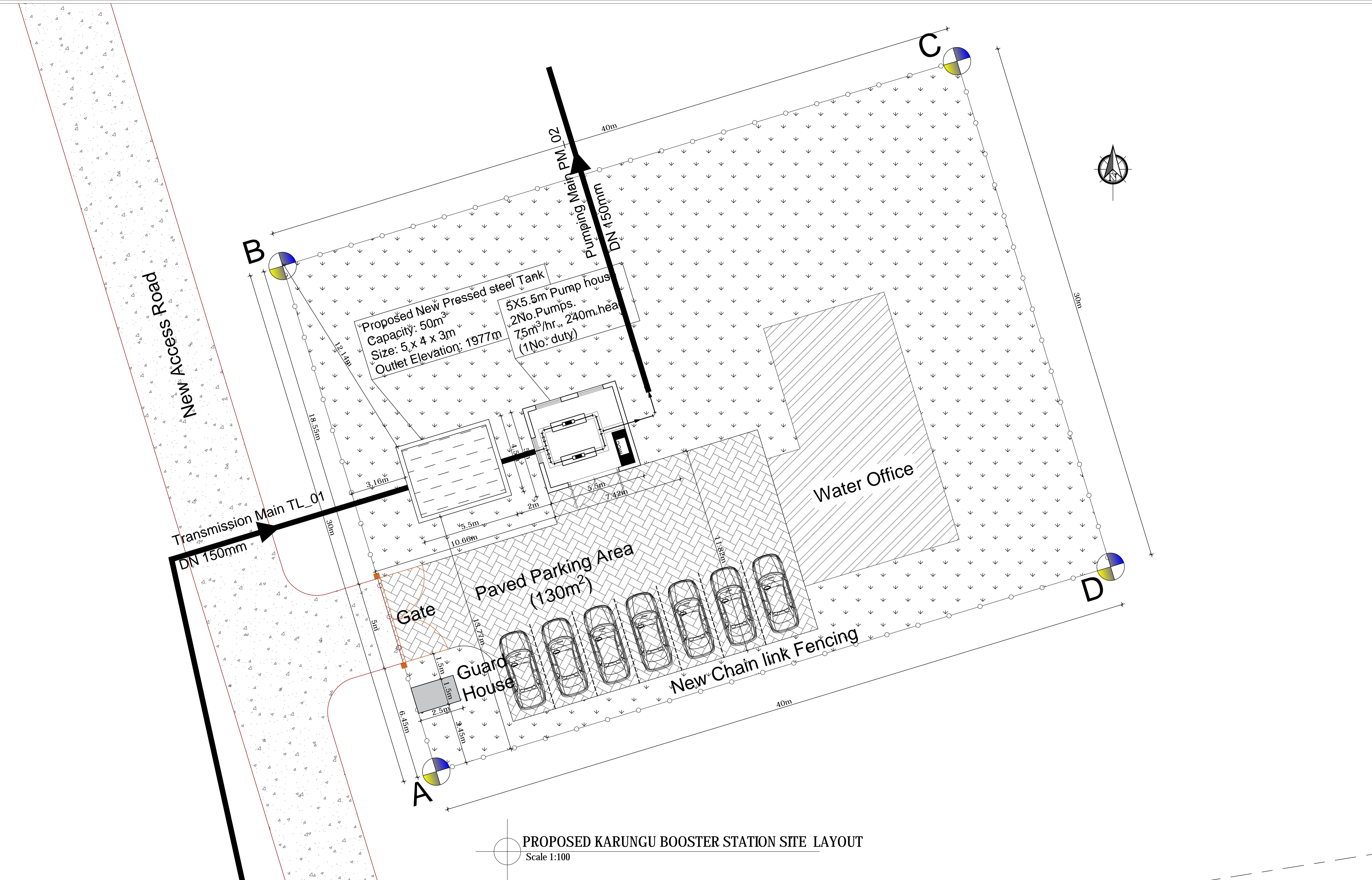
PROPOSED BISYA TANK SITE LAYOUT
Scale 1:100



PROPOSED SITE CORNER SETTING OUT COORDINATES		
POINT	X-COORDINATE	Y-COORDINATE
A	216651.10	9962406.45
B	216640.09	9962434.35
C	216602.88	9962419.68
D	216613.89	9962391.77

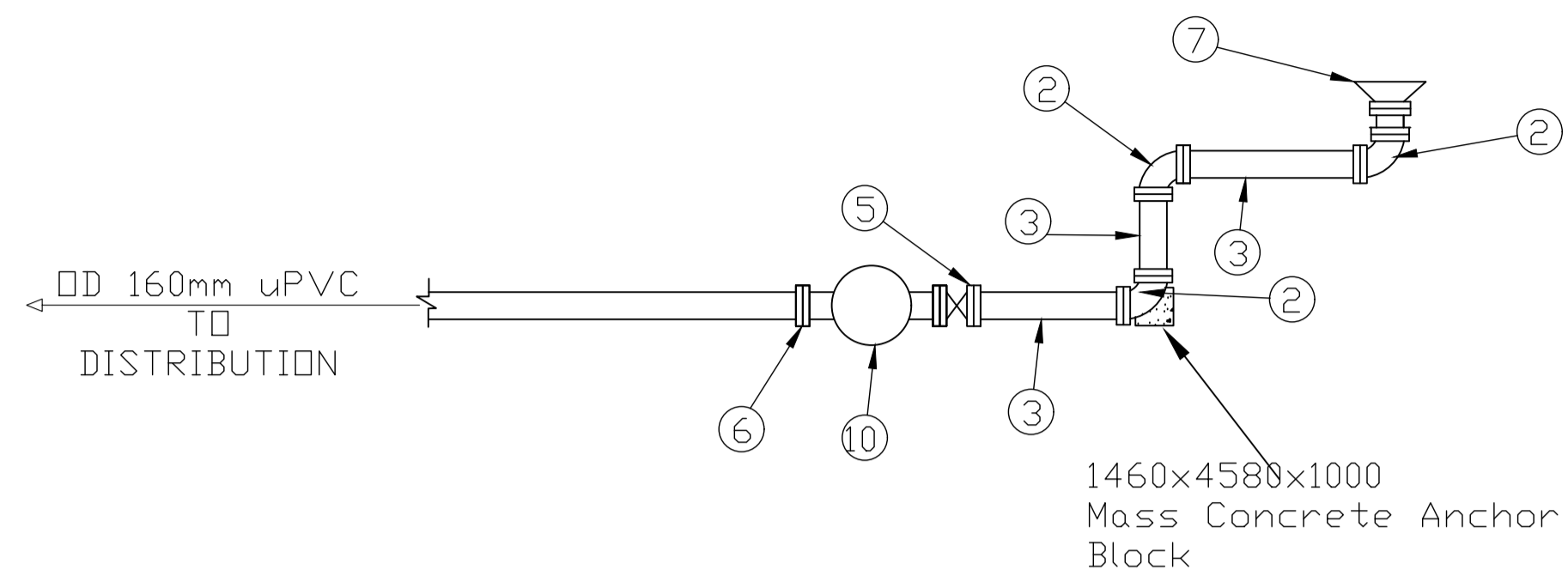
PROPOSED KASHARARA TANK SITE LAYOUT
Scale 1:100



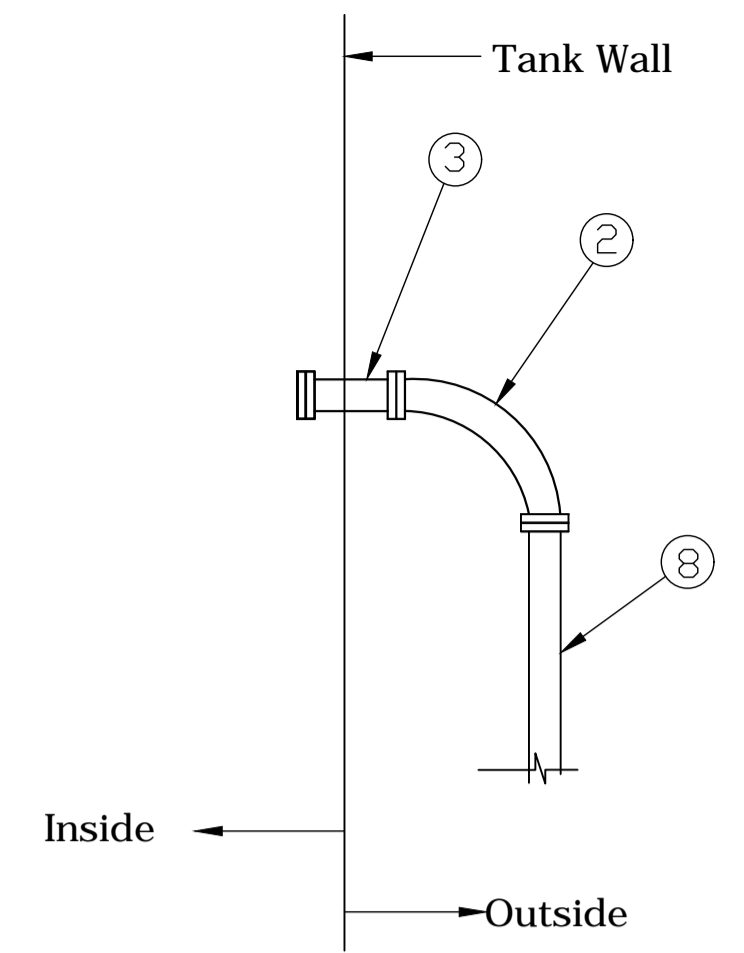


PROPOSED KARUNGU BOOSTER STATION SITE LAYOUT
Scale 1:100

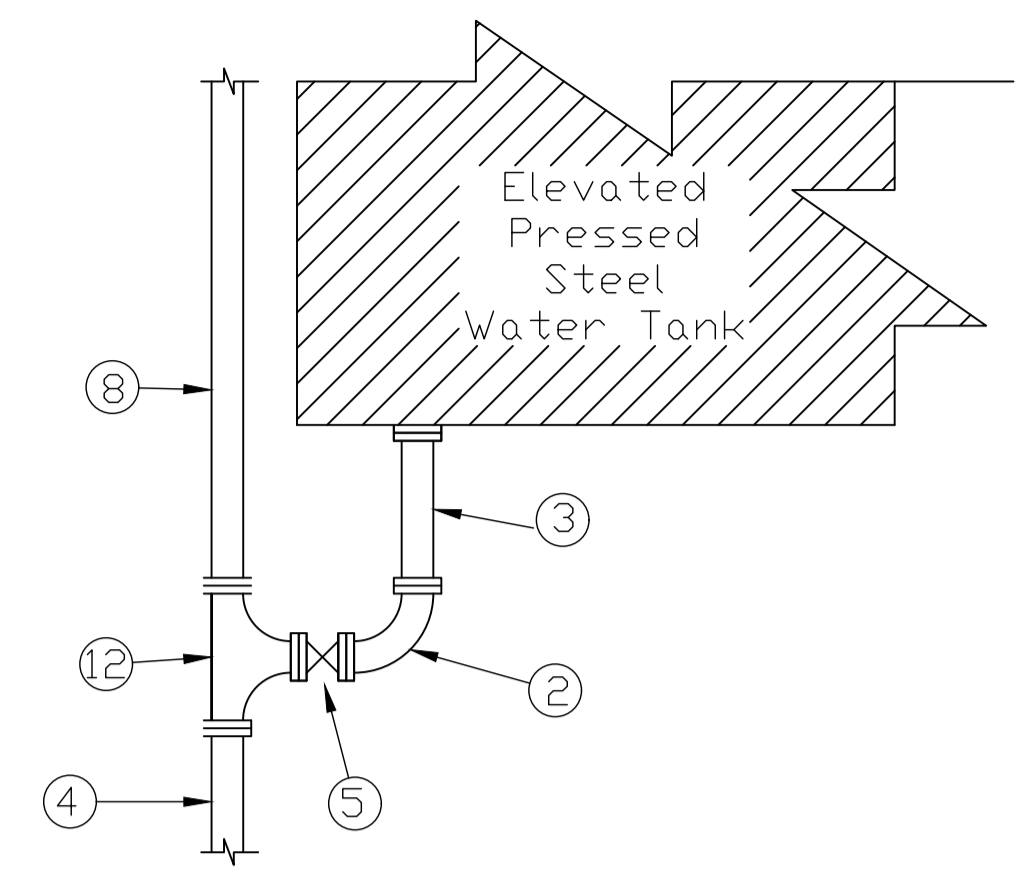
GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	KAGGA & PARTNERS  PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.	PROJECT:	CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM	REVISIONS	DATE:			SCALE:	DATUM	DWG. No.	SHEET
		DWG. TITLE	PROPOSED KARUNGU BOOSTER STATION SITE LAYOUT			DRAWN BY: A.A CHECKED BY: GS APPROVED BY: PJM			Vertical: New Khartoum Horizontal: UTM ZONE 36N ARC 60	KP/BWS/SR/05 	



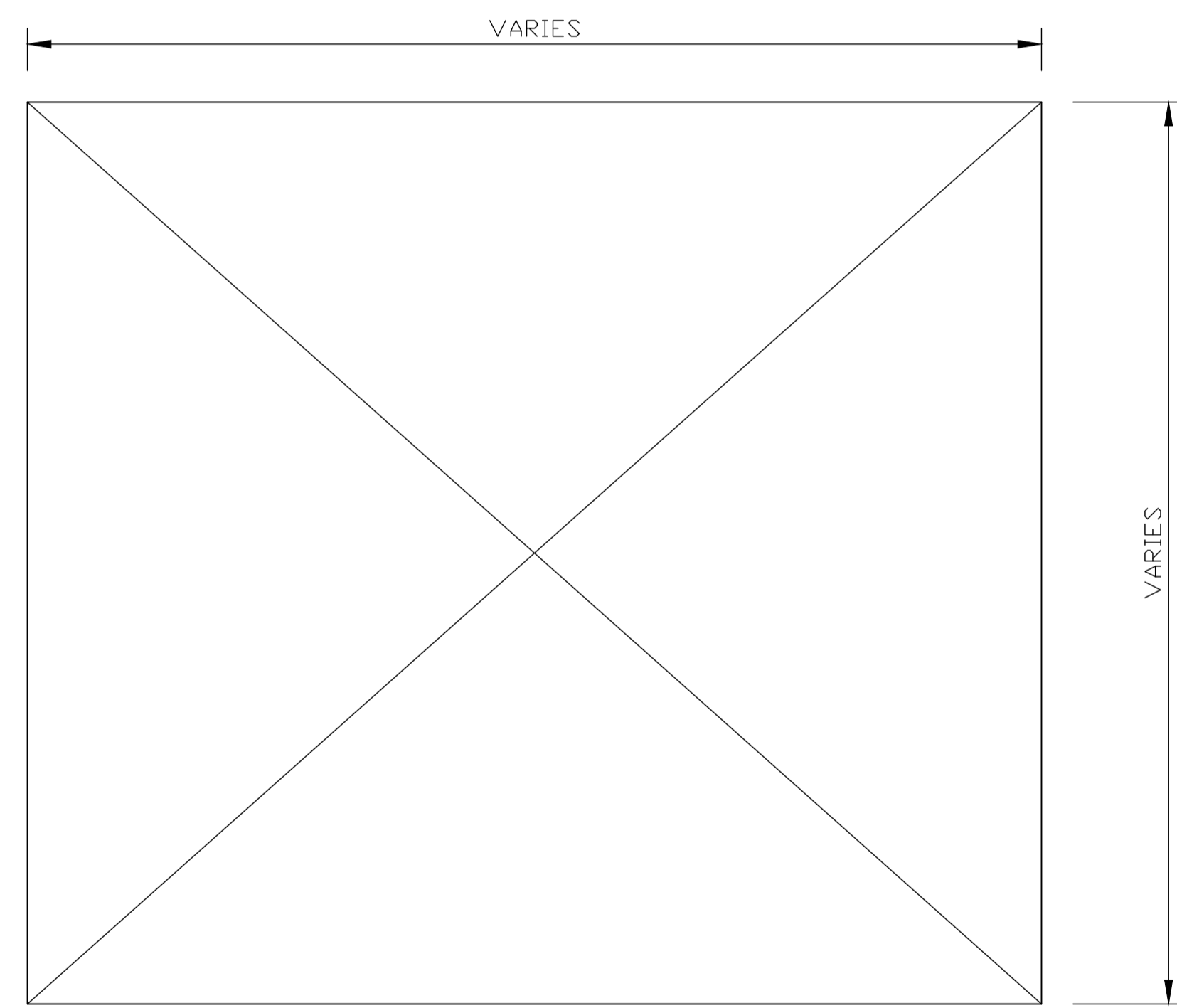
SECTION Z - Z
(Pipe Detail Only)



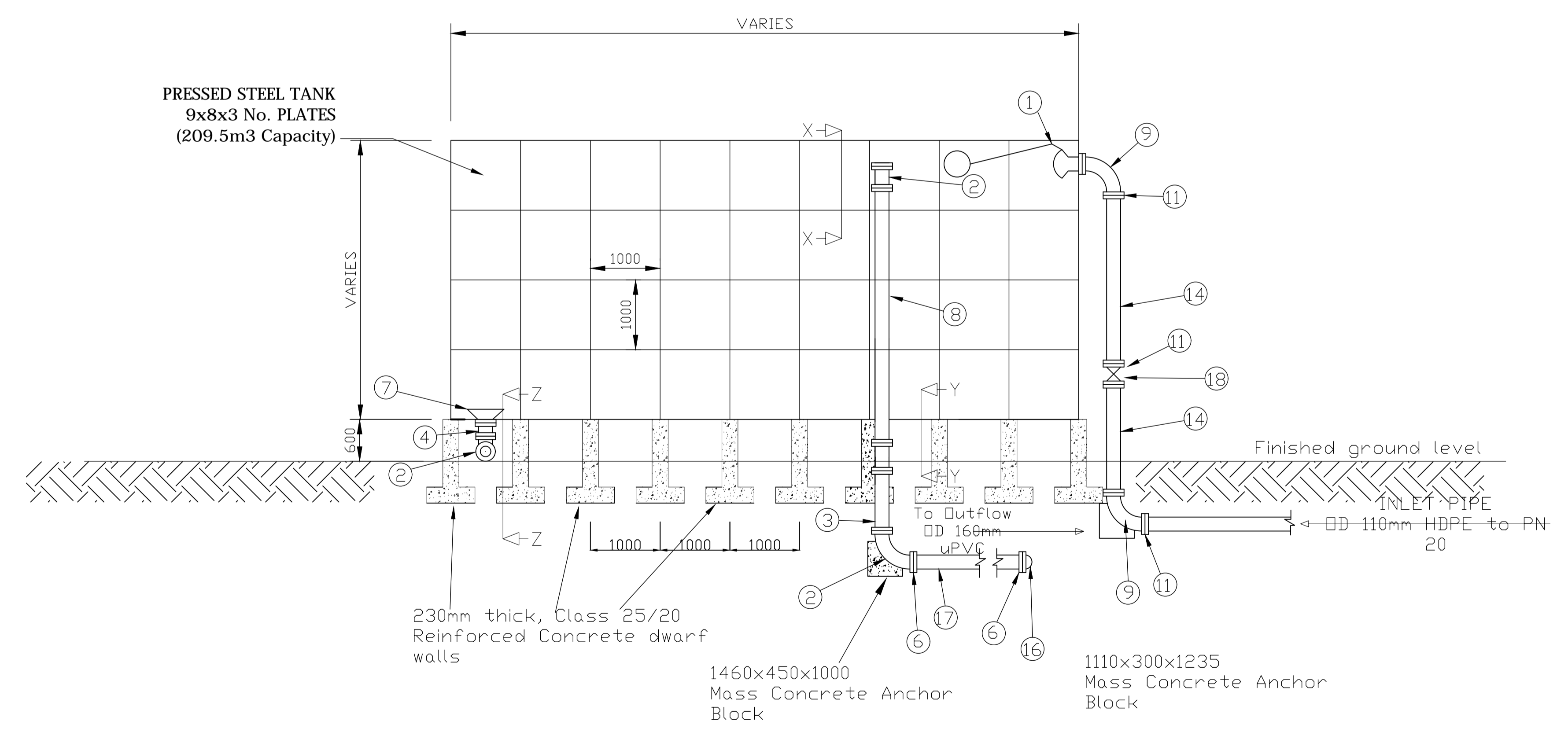
SECTION X-X
(Pipe Detail Only)



SECTION Y - Y
(Pipe Detail Only)



PRESSED STEEL TANK PLAN



PRESSED STEEL TANK FIXING AND PIPEWORK DETAILS

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:
DWG. TITLE

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
TYPICAL PRESSED STEEL TANK ARRANGEMENT

REVISIONS
DATE:

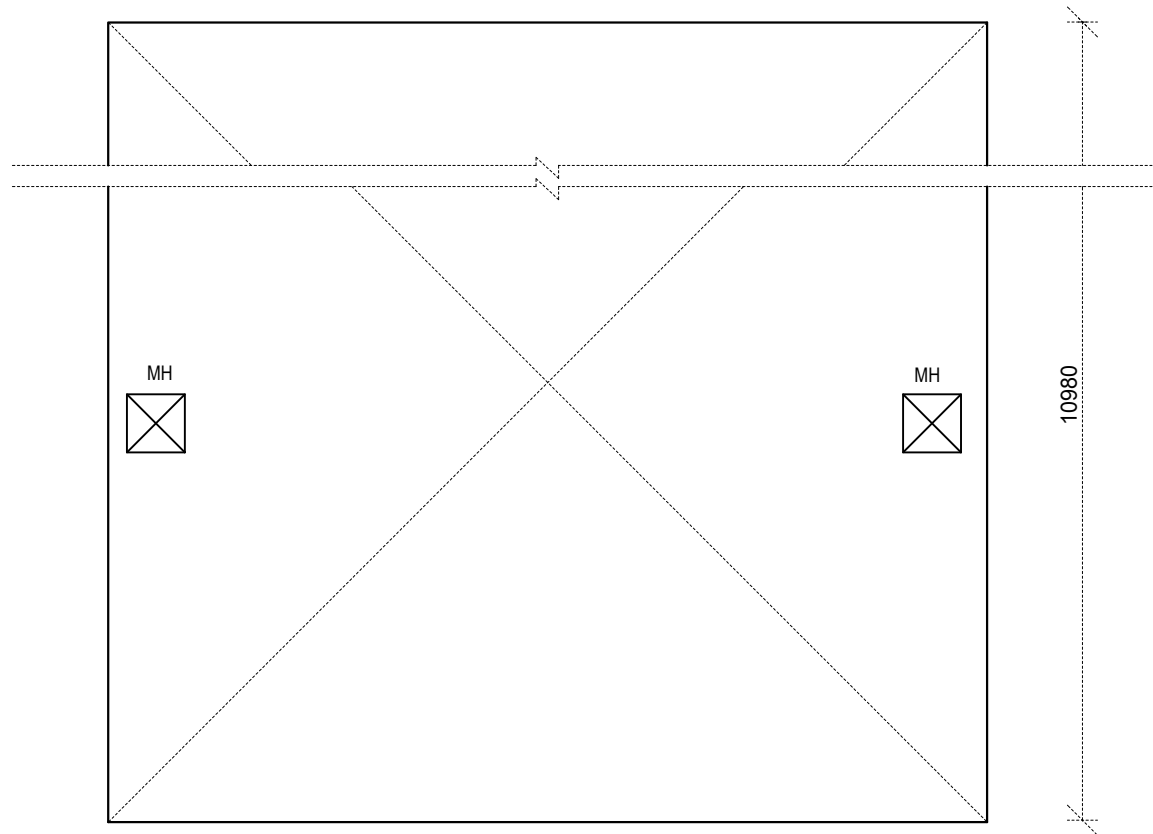
DRAWN BY: A.A
CHECKED BY: GS
APPROVED BY: PJM

SCALE:

DATUM
Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

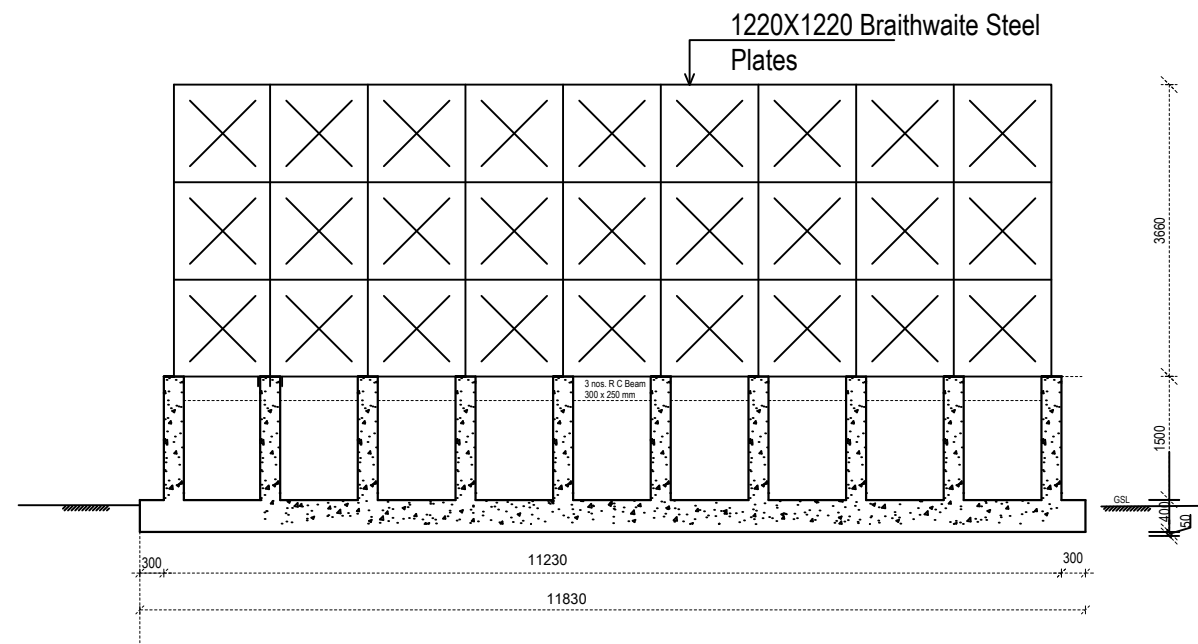
DWG. No.
KP/BWS/SR/06

SHEET

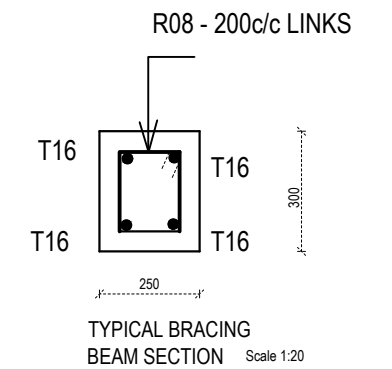
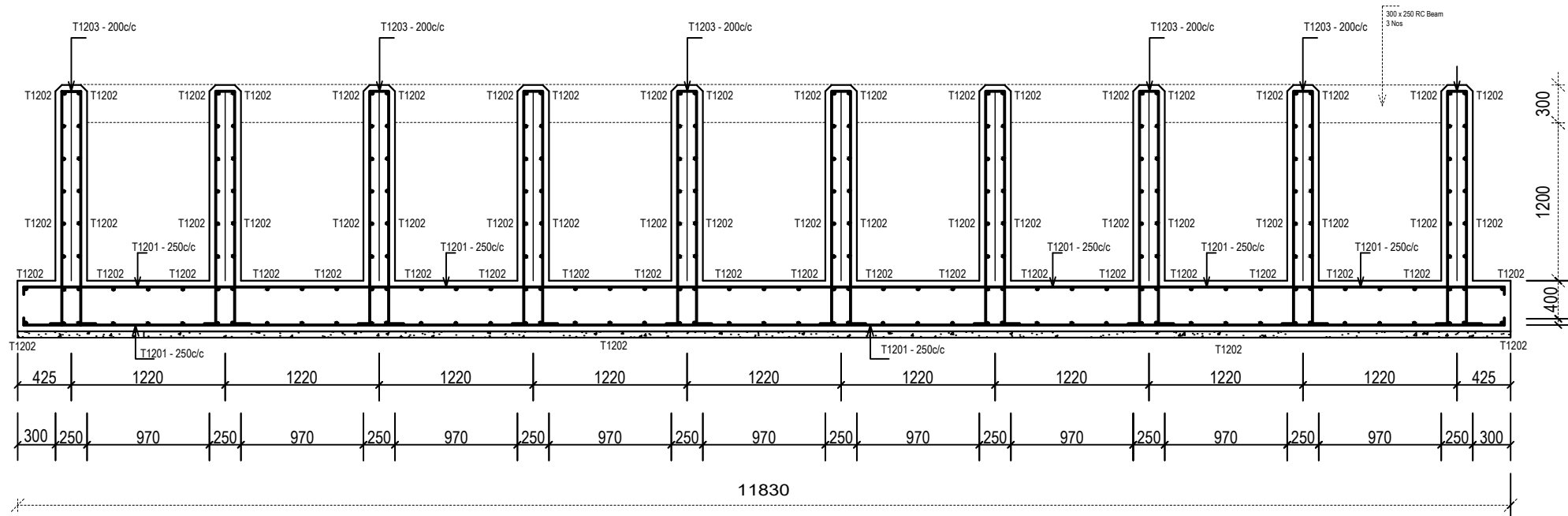


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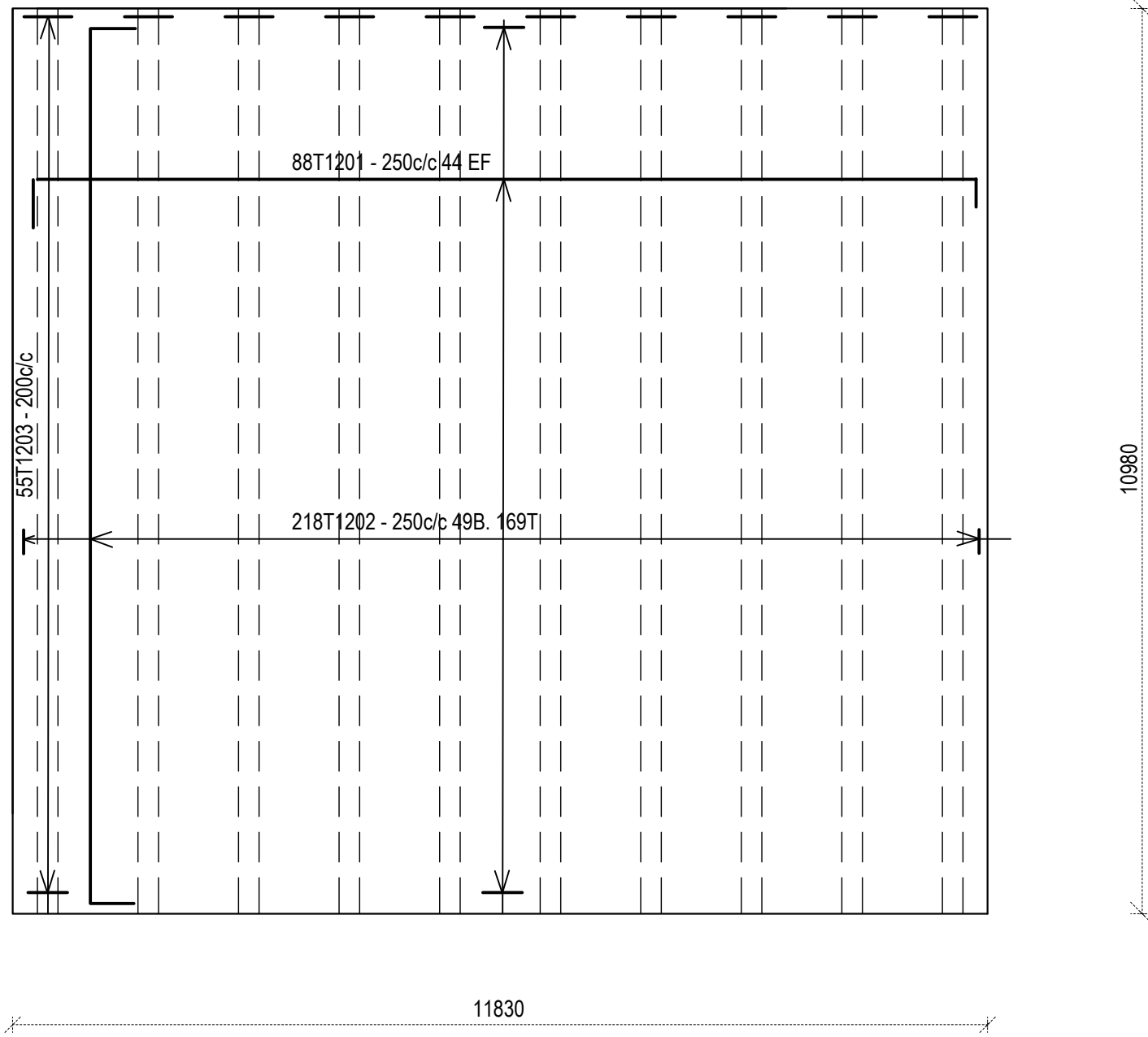
MAIN WATER TANK TOP PLATE Scale 1:100



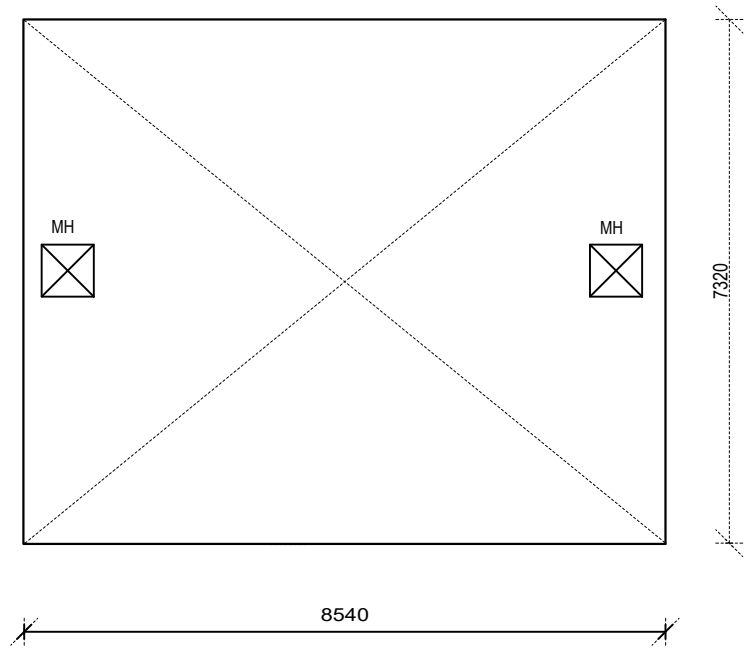
MAIN WATER TANK (400 CM) Scale 1:100



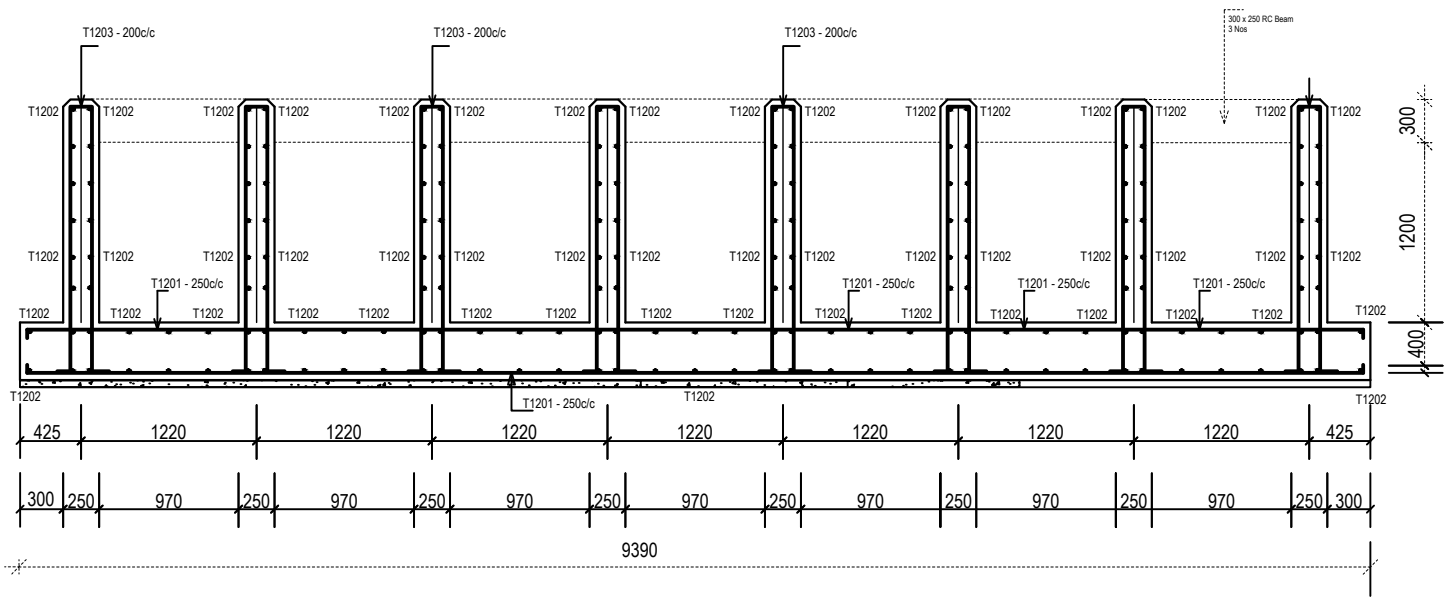
MAIN WATER TANK - FOUNDATION Scale 1:50



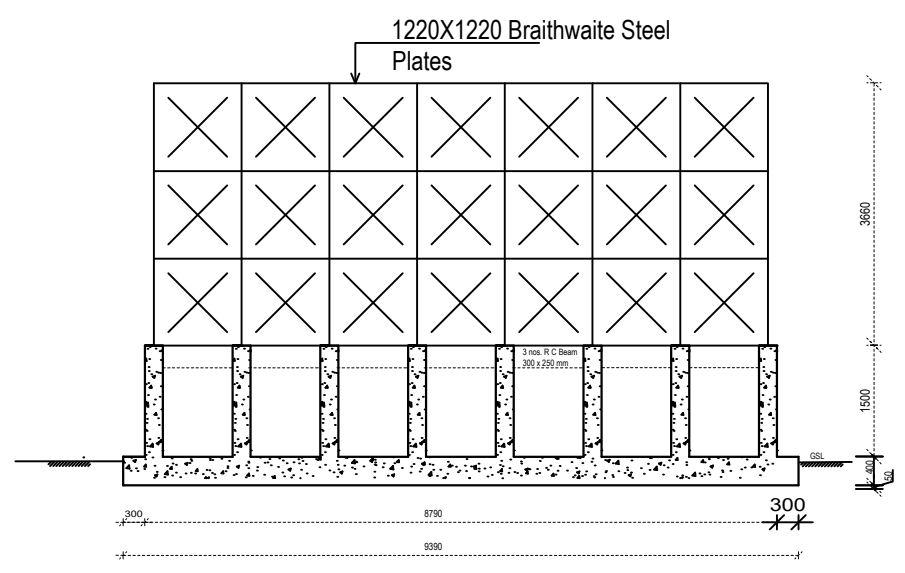
MAIN WATER TANK BASE PLAN Scale 1:75



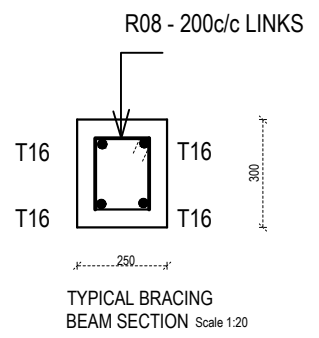
KABINGO WATER TANK TOP PLATE Scale 1:100



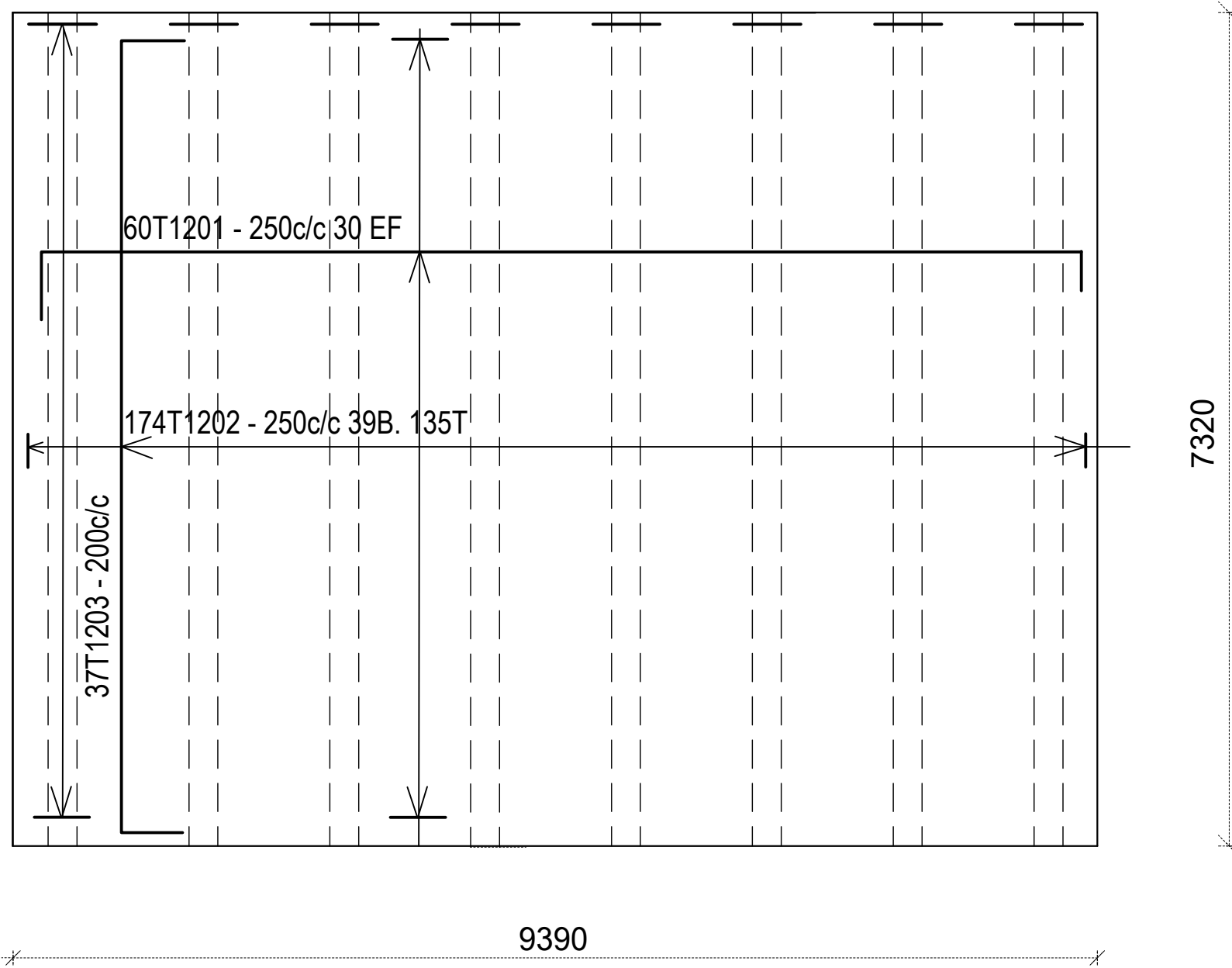
KABINGO WATER TANK - FOUNDATION Scale 1:50



KABINGO WATER TANK (200 CM) Scale 1:100

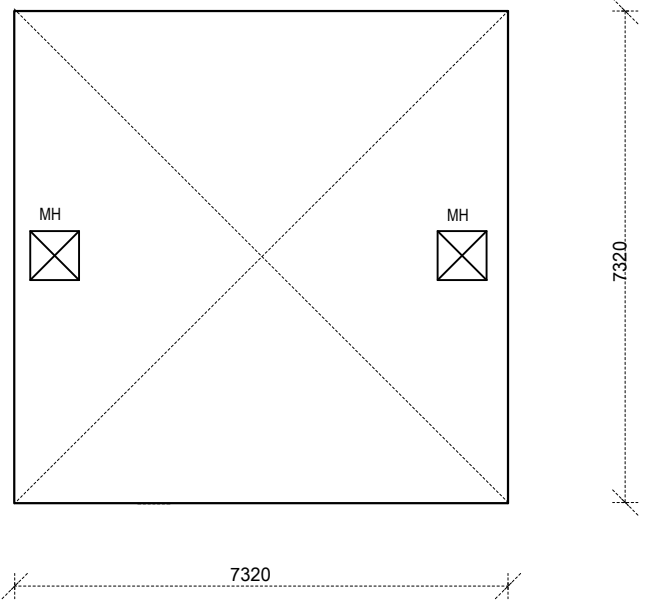


TYPICAL BRACING BEAM SECTION Scale 1:20

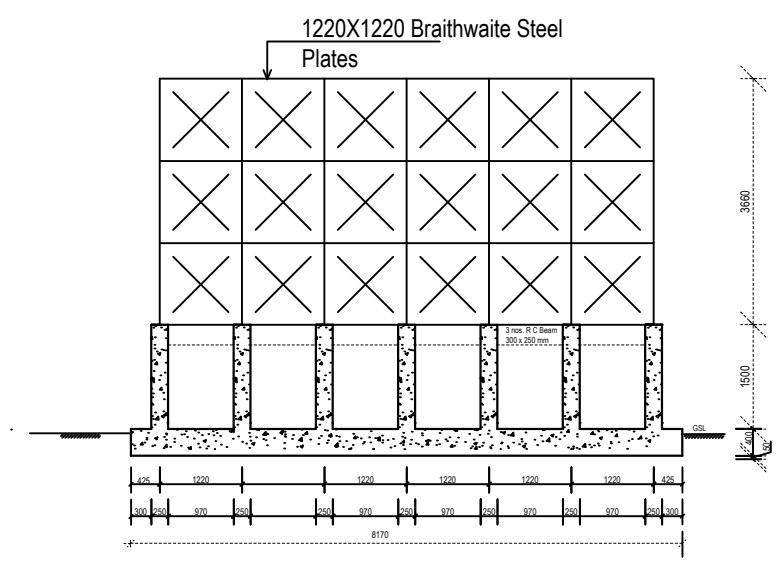


KABINGO WATER TANK BASE PLAN Scale 1:50

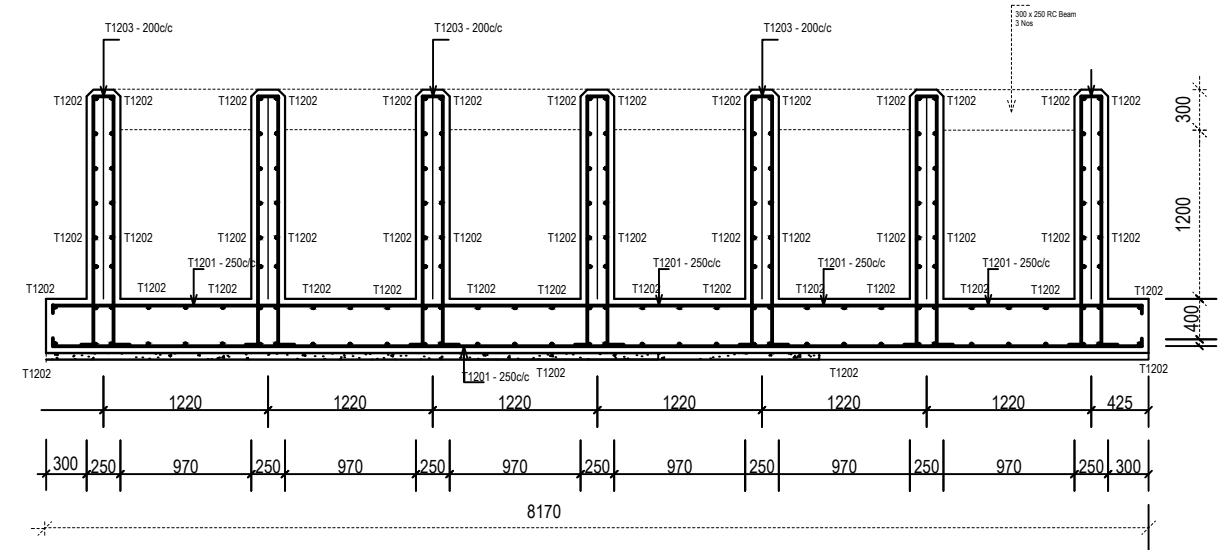
 <p>GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT</p>	<p>KAGGA & PARTNERS PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.</p>	<p>PROJECT:</p>	<p>CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM</p>	<p>REVISIONS</p>	<p>DATE:</p>	<p>DRAWN BY: A.A</p>	<p>SCALE:</p>	<p>DATUM</p>	<p>DWG. No.</p>	<p>SHEET</p>	
		<p>DWG. TITLE</p>		<p>KABINGO WATER TANK - BASE SLAB PLAN</p>	<p>CHECKED BY: GS</p>	<p>APPROVED BY: PJM</p>					<p>Vertical: New Khartoum</p>
								<p>Horizontal: UTM ZONE 36N ARC 60</p>			



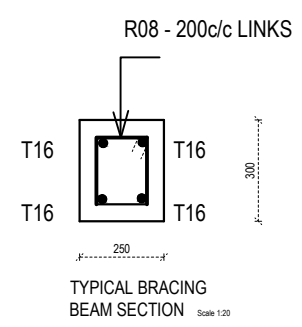
BITSHYA WATER TANK TOP PLATE Scale 1:100



BITSYA WATER TANK (180 CM) Scale 1:100



BITSYA WATER TANK - FOUNDATION Scale 1:50



TYPICAL BRACING BEAM SECTION Scale 1:20



GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE: BITSHYA WATER TANK - PLAN, SECTION AND ELEVATION

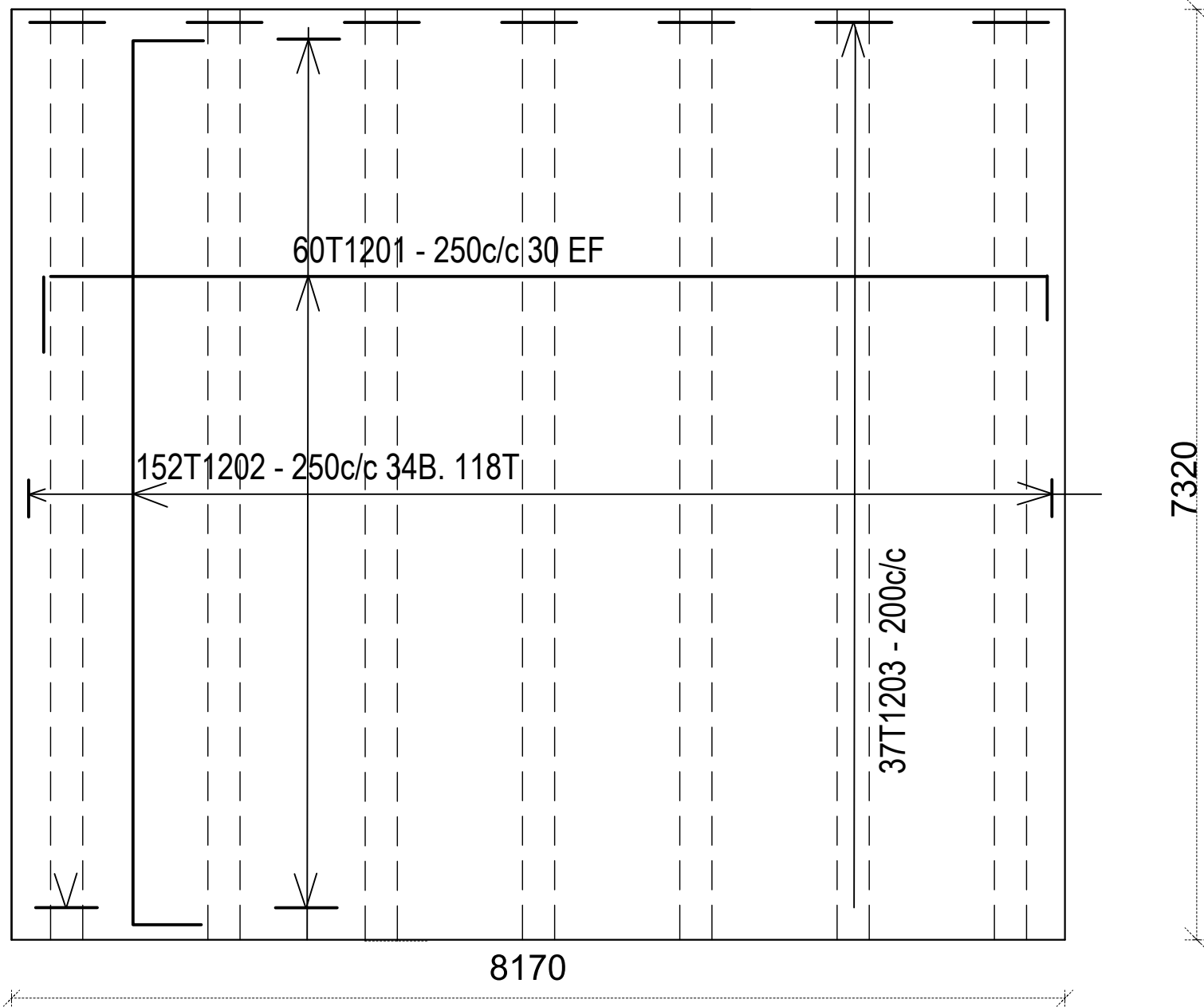
REVISIONS	DATE:	DRAWN BY:	A.A
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SCALE:

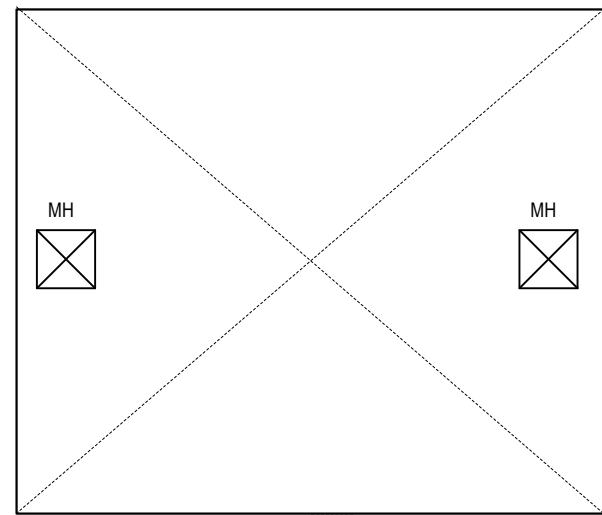
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Horizontal: UTM ZONE 36N ARC 60

DWG. No. MWE/BWS/SR/-11

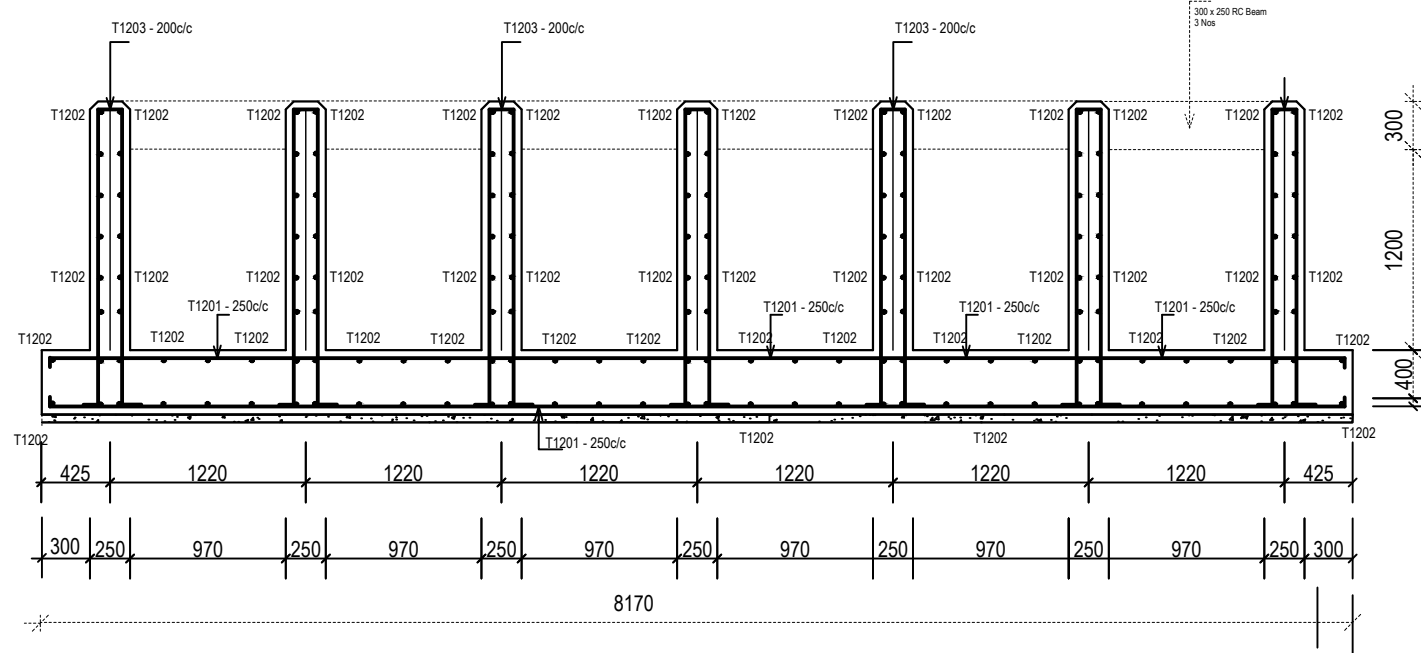
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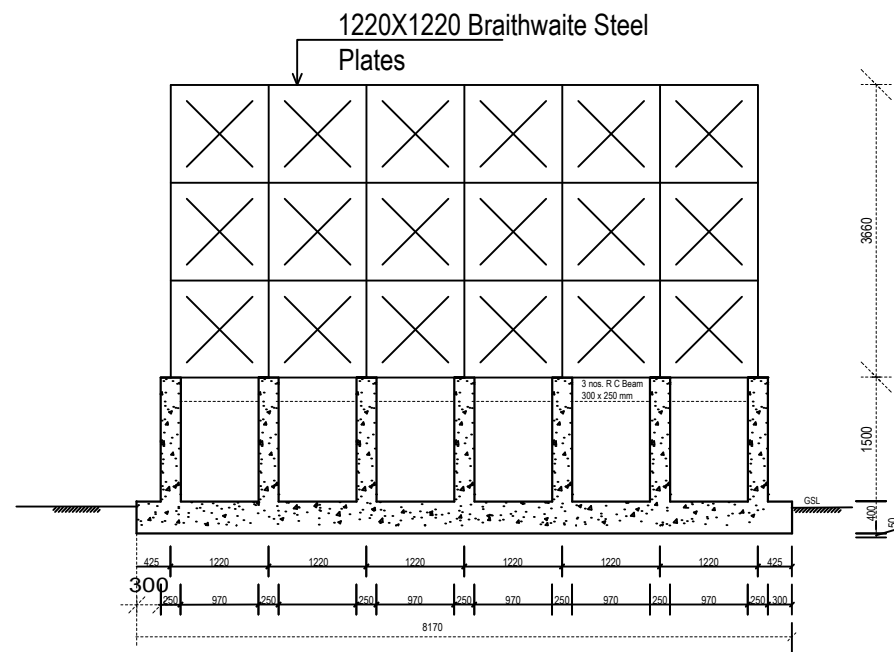
BITSYA WATER TANK BASE PLAN Scale 1:50



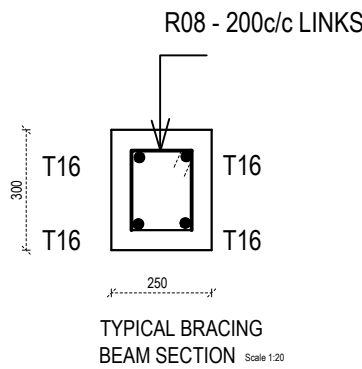
KASHARARA WATER TANK TOP PLATE Scale 1:100



KASHARARA WATER TANK - FOUNDATION Scale 1:50



KASHARARA WATER TANK (150 CM) Scale 1:100



TYPICAL BRACING BEAM SECTION Scale 1:20



GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS



PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

KASHARARA WATER TANK - PLAN, SECTION AND ELEVATION

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

Vertical: New Khartoum

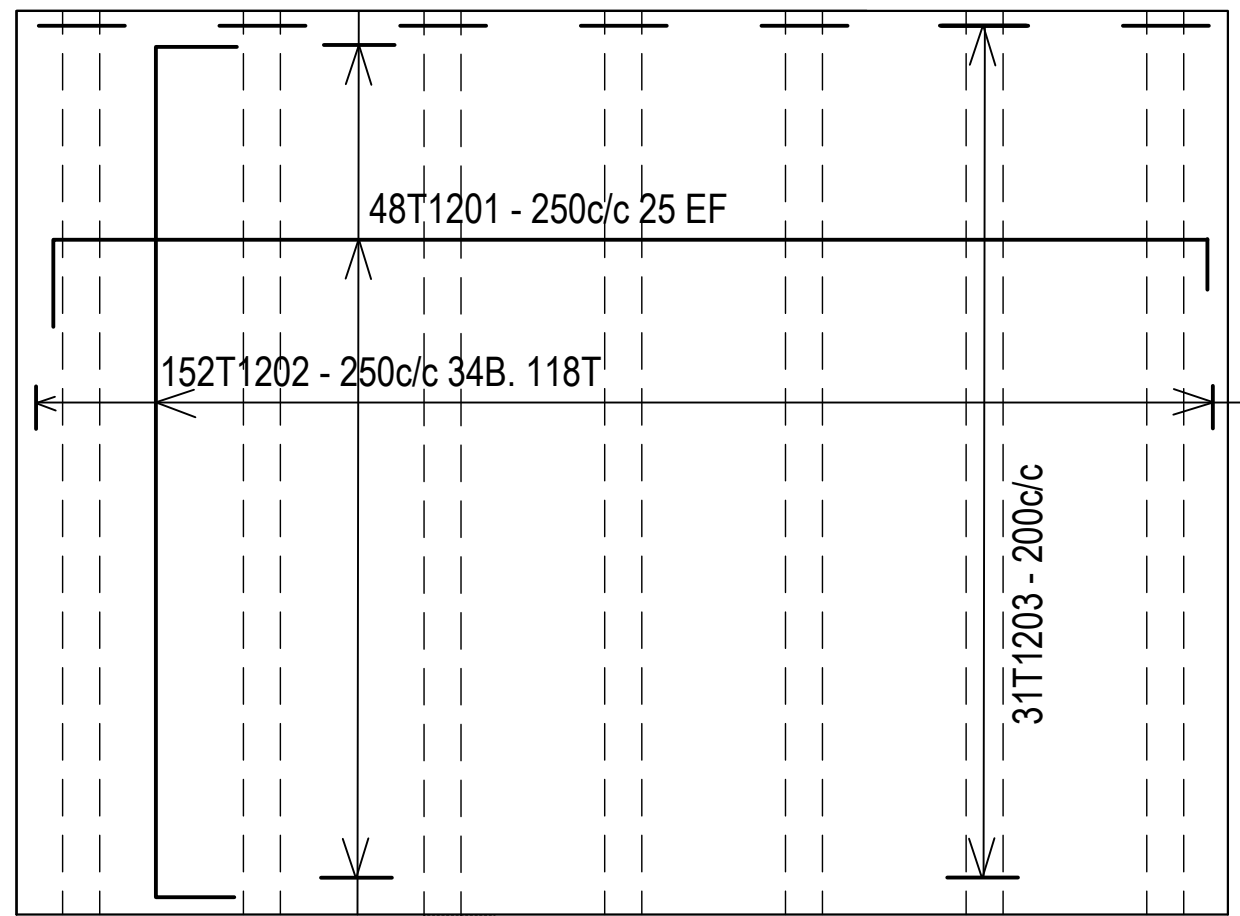
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DWG. No.

MWE/BWS/SR/-13

SHEET





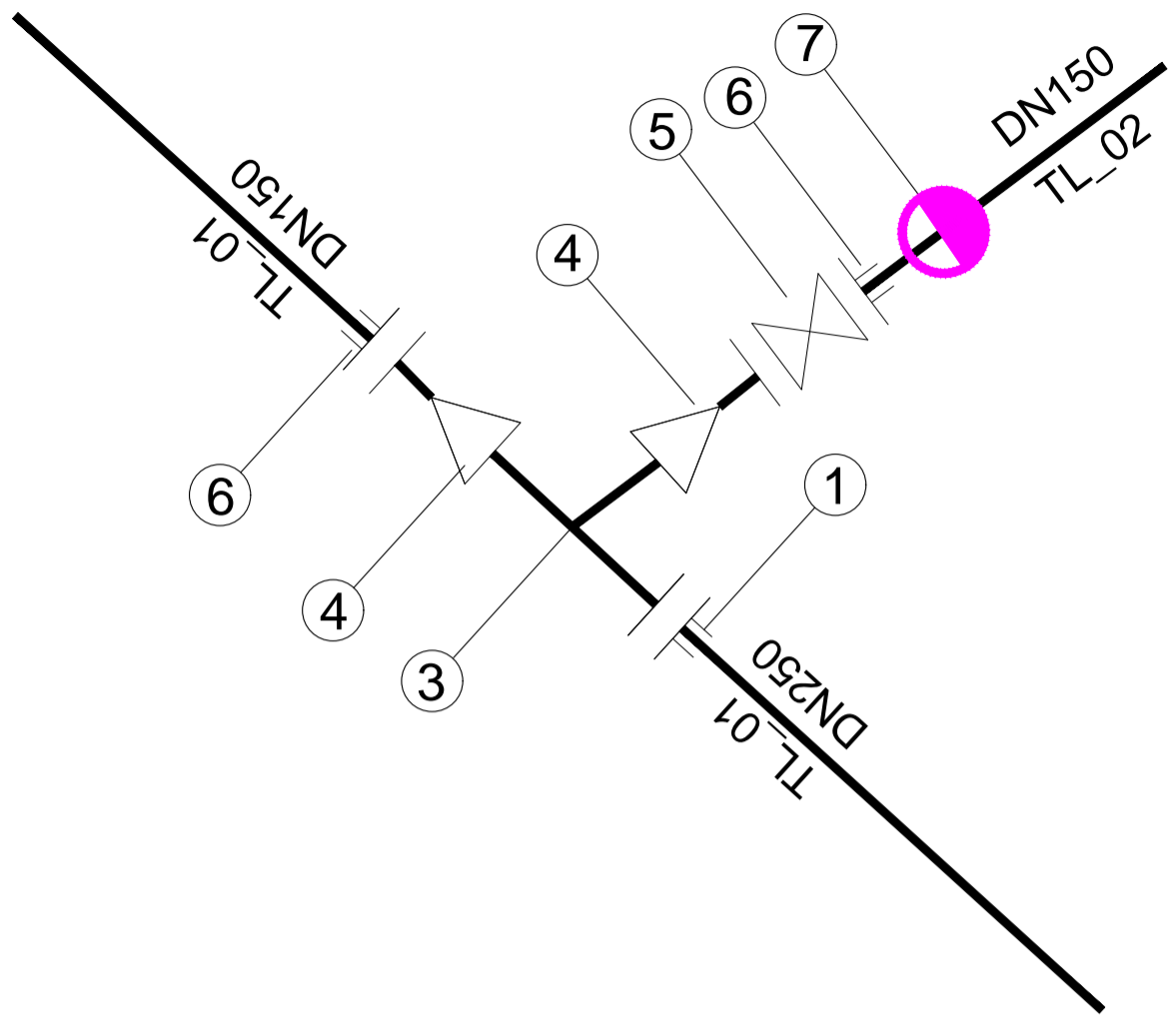
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KASHARARA WATER TANK BASE PLAN Scale 1:50

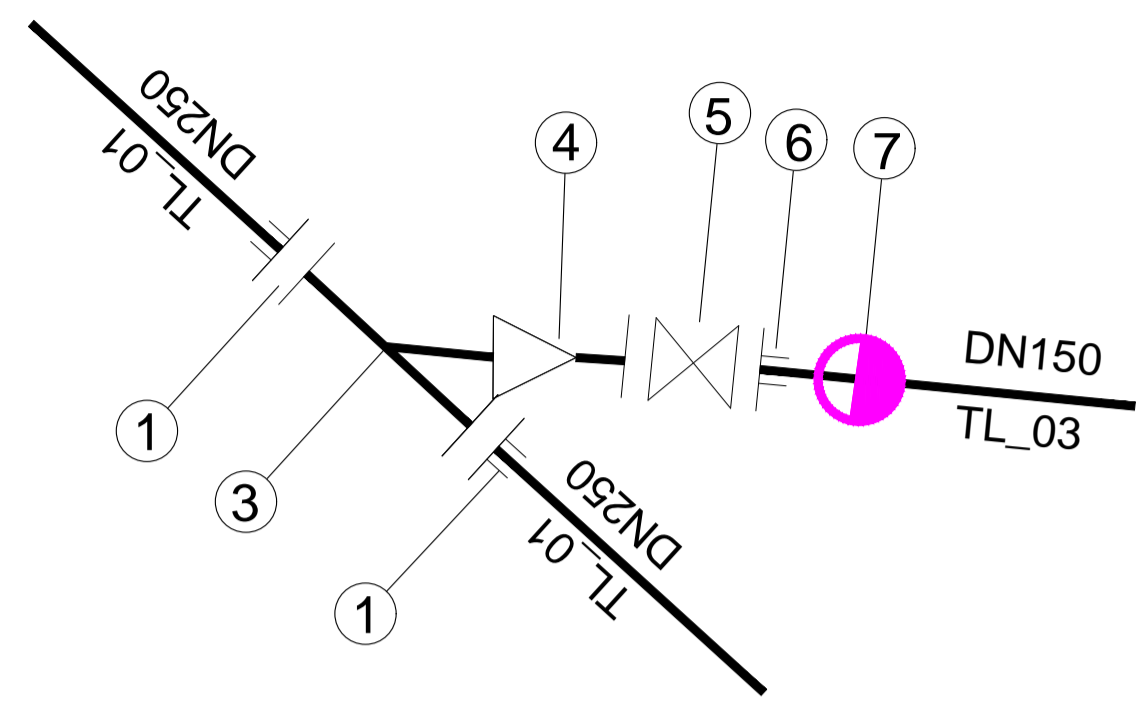
 <p>GOVERNMENT OF UGANDA MINISTRY OF WATER AND ENVIRONMENT</p>	<p>KAGGA & PARTNERS PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD), TEL: 256 41 220279, FAX: 256 41 220208, P.O. BOX 6583, KAMPALA, UGANDA.</p>	<p>PROJECT:</p>	<p>CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM</p>	<p>REVISIONS</p>	<p>DATE:</p>	<p>DRAWN BY: A.A</p>	<p>SCALE:</p>	<p>DATUM</p>	<p>DWG. No.</p>	<p>SHEET</p>
		<p>DWG. TITLE</p>	<p>KASHARARA WATER TANK - BASE SLAB PLAN</p>	<p>CHECKED BY: GS</p>	<p>APPROVED BY: PJM</p>	<p>Vertical: New Khartoum</p>	<p>MWE/BWS/SR/-14</p>	<p>Horizontal: UTM ZONE 36N ARC 60</p>		

ANCILLARY WORKS DRAWINGS



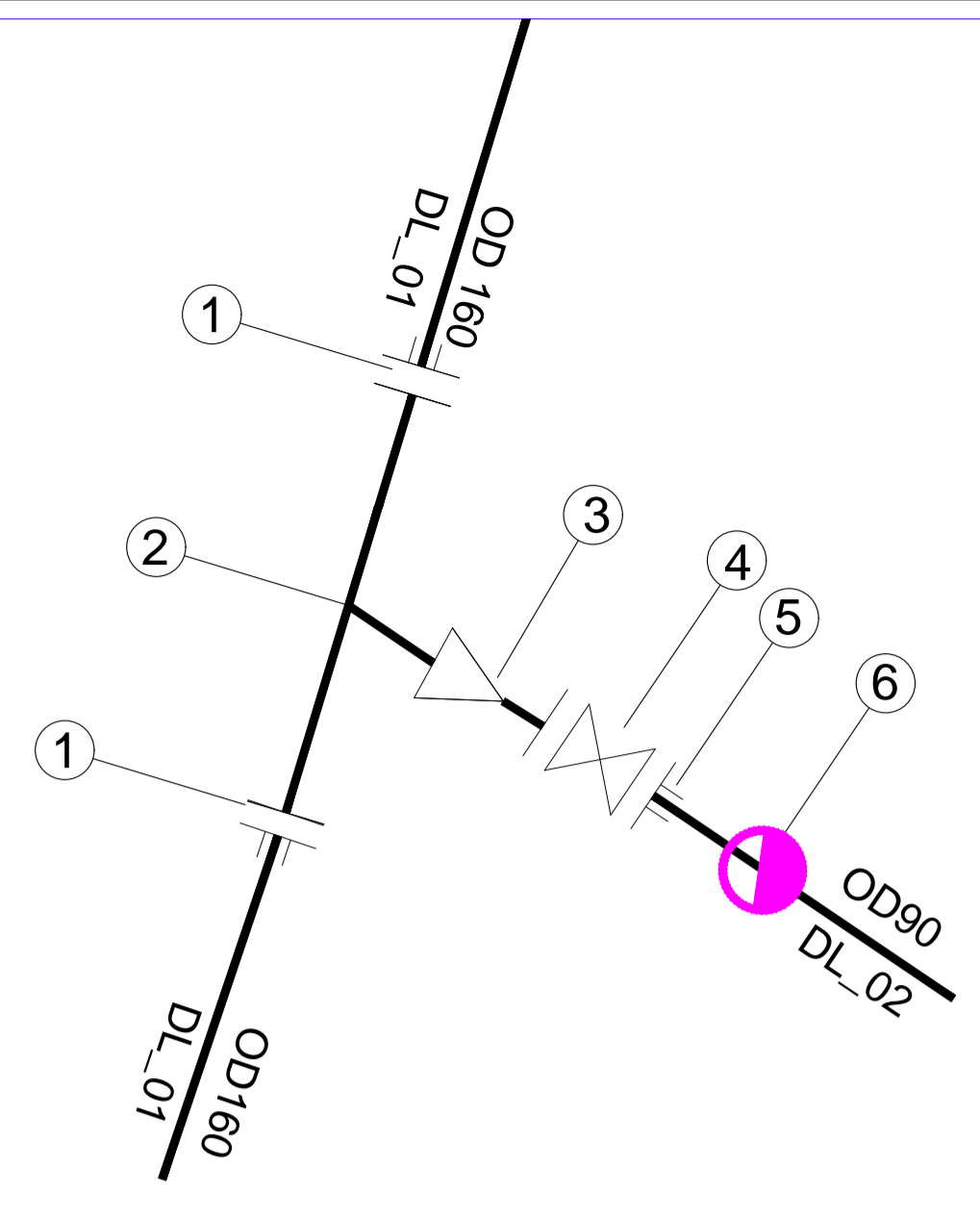
Fitting Details at Junction 01	
Label	Description
1	DN250mm Flange adaptor
3	DN250x250mm Flanged Tee
4	DN250x150mm Tapper
5	DN150mm Gate valve
6	DN150mm Flange adaptor
7	Air Valve

DETAIL AT JUNCTION 01



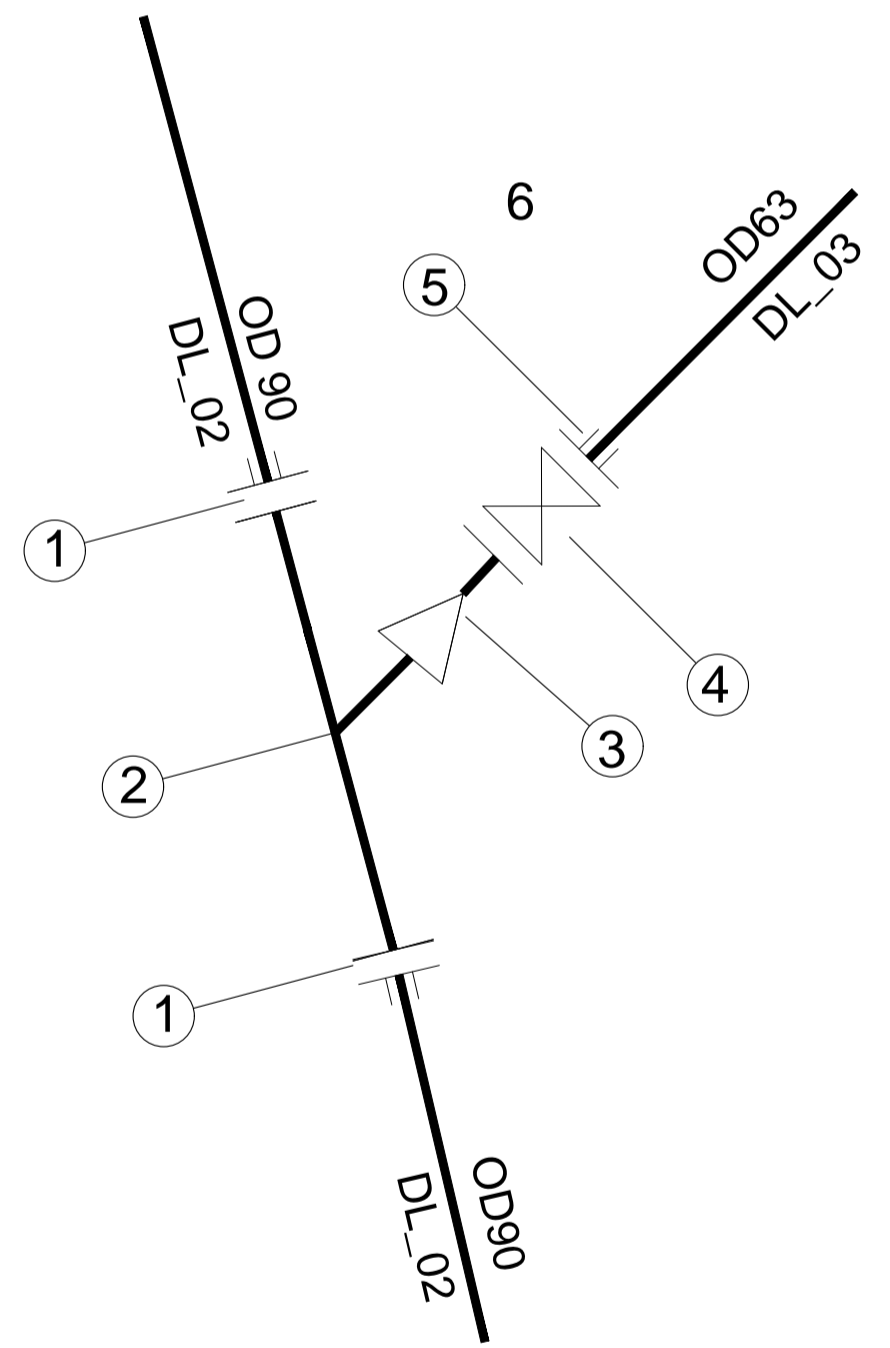
Fitting Details at Junction 02	
Label	Description
1	DN250mm Flange adaptor
3	DN250x250mm Flanged Tee
4	DN250x150mm Tapper
5	DN150mm Gate valve
6	DN150mm Flange adaptor
7	Air Valve

DETAIL AT JUNCTION 02



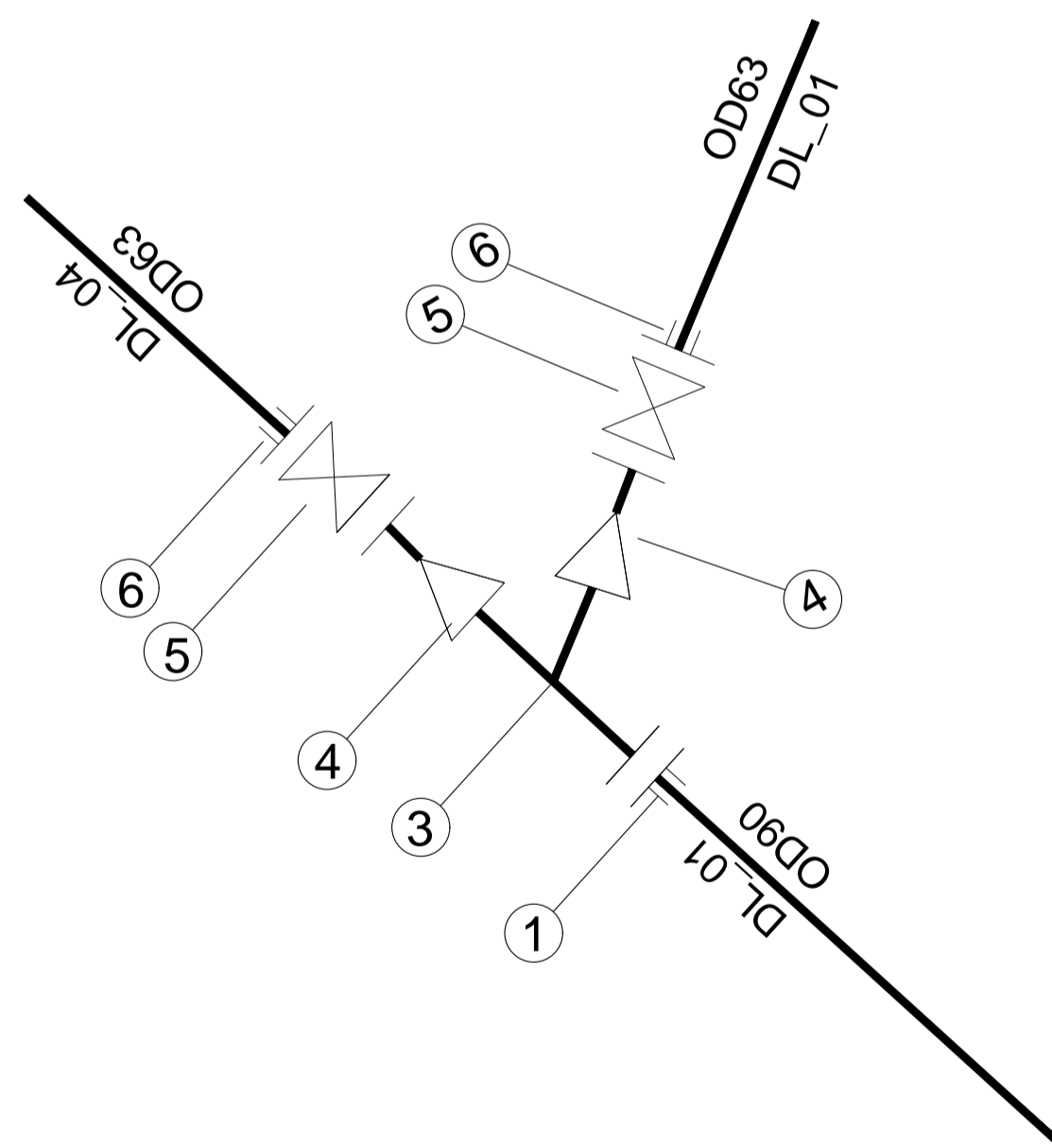
Fitting Details at Junction 03	
Label	Description
1	DN150mm Flange adaptor
2	DN150x150mm Flanged Tee
3	DN150x75mm Tapper
4	DN75mm Gate valve
5	DN75mm Flange adaptor
6	Air Valve

DETAIL AT JUNCTION 03



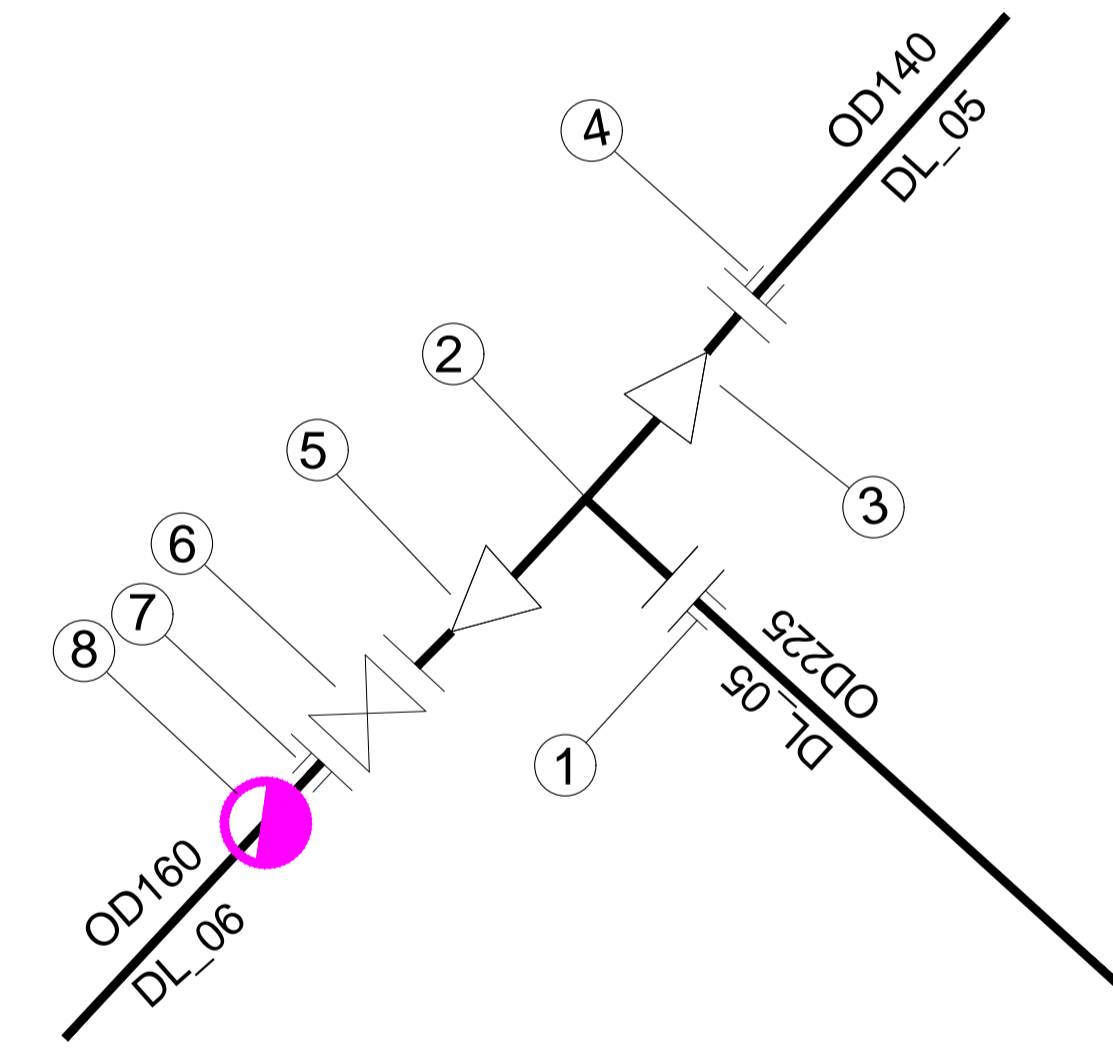
Fitting Details at Junction 04	
Label	Description
1	DN75mm Flange adaptor
2	DN75x75mm Flanged Tee
3	DN75x50mm Tapper
4	DN50mm Gate valve
5	DN50mm Flange adaptor

DETAIL AT JUNCTION 04



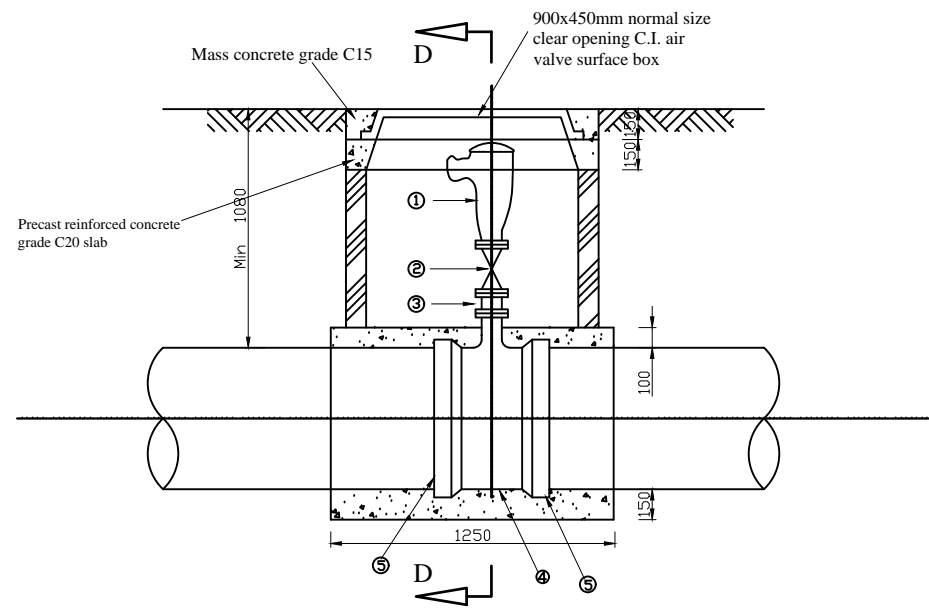
Fitting Details at Junction 05	
Label	Description
1	DN80mm Flange adaptor
3	DN80x80mm Flanged Tee
4	DN80x50mm Tapper
5	DN50mm Gate valve
6	DN50mm Flange adaptor

DETAIL AT JUNCTION 05

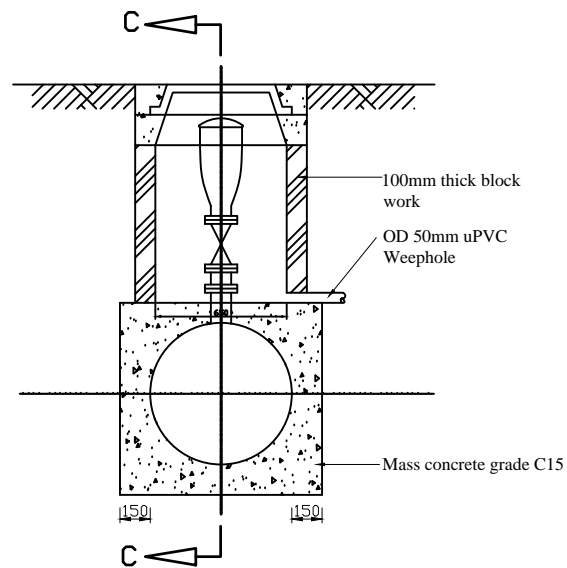


Fitting Details at Junction 06	
Label	Description
1	DN200mm Flange adaptor
2	DN200x200mm Flanged Tee
3	DN200x120mm Tapper
4	DN120mm Flange adaptor
5	DN200x150mm Tapper
6	DN150mm Gate valve
7	DN150mm Flange adaptor
8	Air Valve

DETAIL AT JUNCTION 06



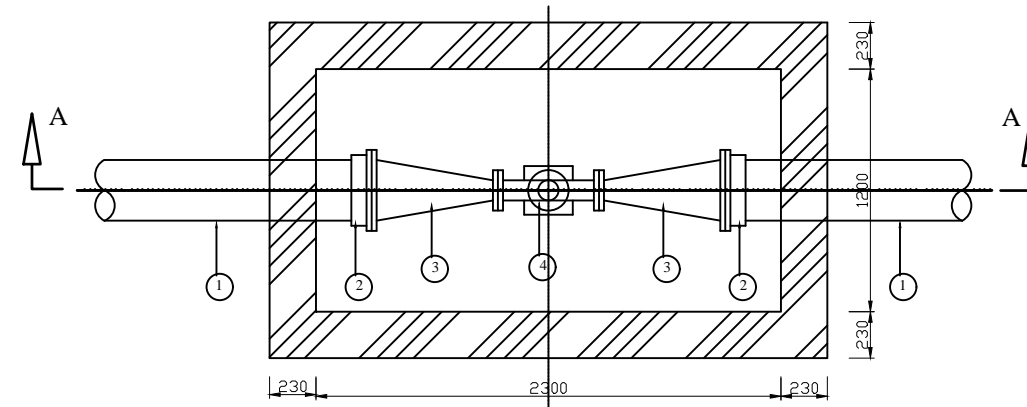
SECTION C-C



SECTION D-D

AIR VALVE CHAMBER

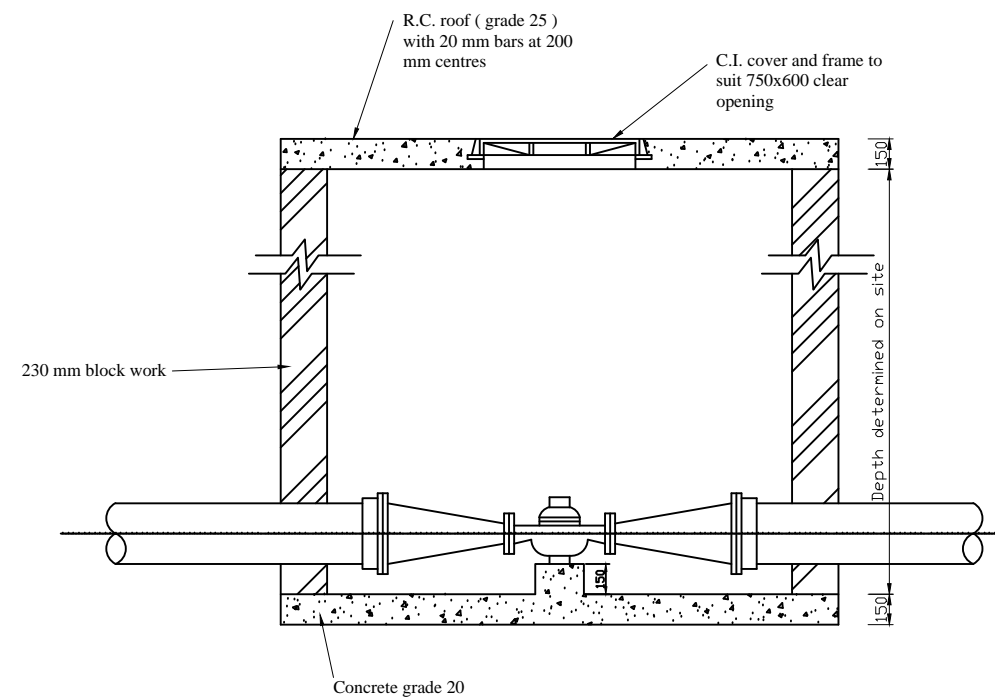
AIR VALVE	FITTINGS
d' DAV Where d' = 25, 50, 80mm	<ul style="list-style-type: none"> ① 1 No. DN d' Screwed Double Air Valve. ② 1 No. DN d' Female Screw Gate Valve. ③ 1 No. DN d' Flanged Screw. ④ 1 No. DN Dx100 DI Flanged Tee. ⑤ 2 No. DN D Flange Adaptors.
d' DAV Where d' is greater or equal to 100mm	<ul style="list-style-type: none"> ① 1 No. DN d' Flanged Double Air Valve. ② 1 No. DN d' Flanged Gate Valve. ③ N/A ④ 1 No. DN Dxd' DI Flanged Tee. ⑤ 2 No. DN D Flanged Adaptors.



SECTION PLAN

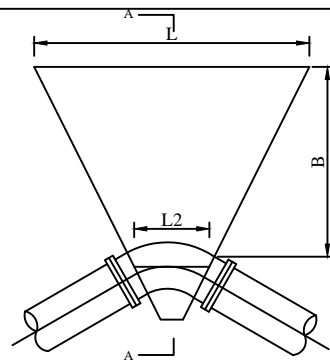
LEGEND

- 1. D mm Mains
- 2. 2 No. D mm flange adaptor
- 3. 2 No. D 1 D/d mm taper
- 4. 1 No. d mm helix type flow meter



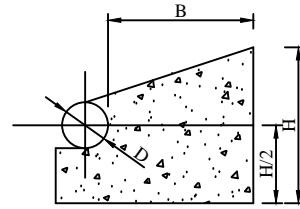
SECTION A-A

WATER METER CHAMBER

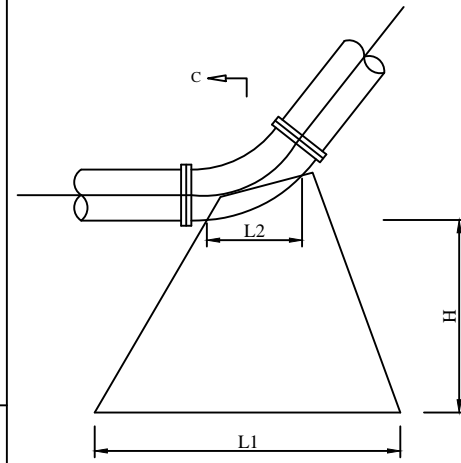


PLAN VIEW

HORIZONTAL ANCHOR BLOCKS AT BENDS (TYPE HB)

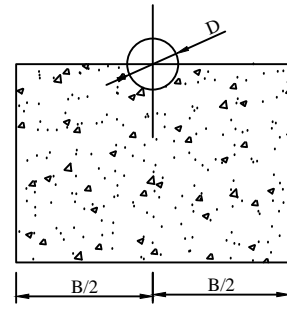


SECTION A-A

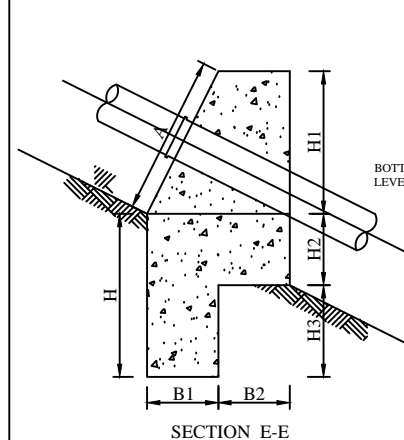


ELEVATION

VERTICAL ANCHOR BLOCK AT DEPRESSIONS (TYPE DV)



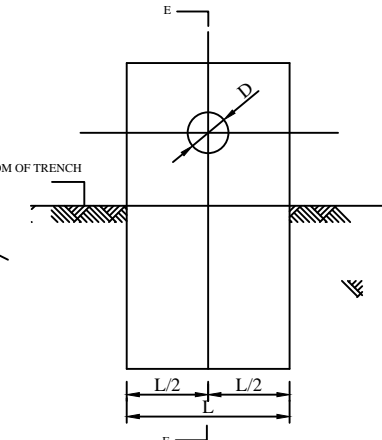
SECTION C-C



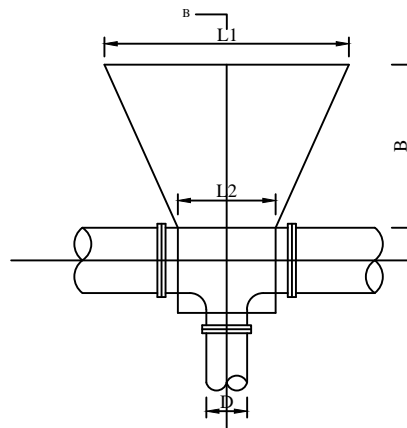
SECTION E-E

NOTE

1. ANCHOR BLOCK TO BE POSITIONED BEHIND COLLAR AS SHOWN

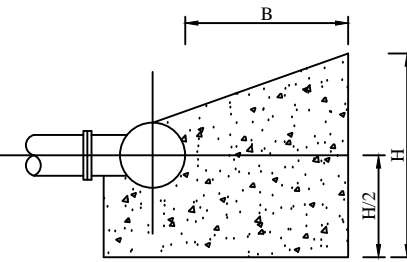


FRONT VIEW

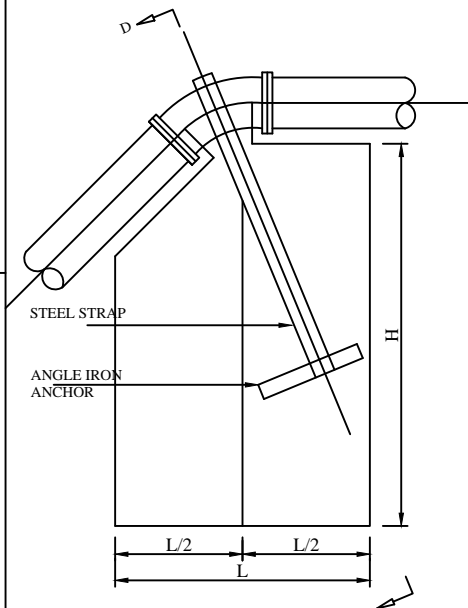


PLAN VIEW

ANCHOR BLOCKS AT TEES (TYPE TY)

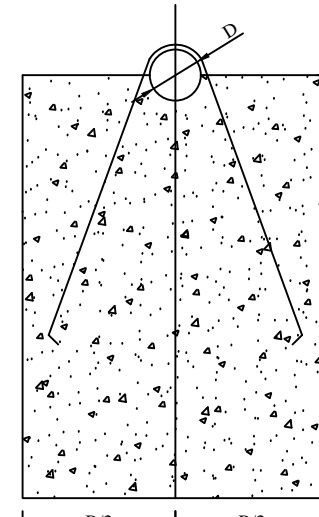


SECTION B-B

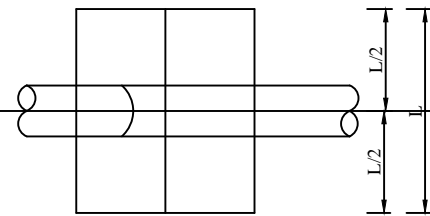


ELEVATION

VERTICAL ANCHOR BLOCKS AT CRESTS (TYPE CV)



SECTION D-D



GRADIENT	SPACING OF ANCHOR BLOCKS (m)
1 IN 2	5.5
1 IN 3	11.0
1 IN 4	11.0
1 IN 5	16.5
1 IN 6	22.0
1 IN 7 - 1 IN 10	27.5

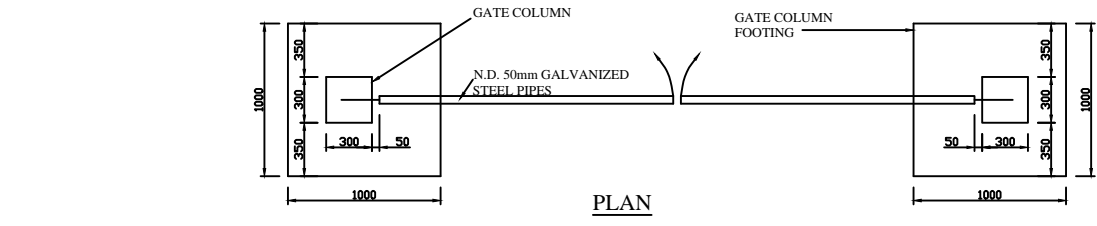
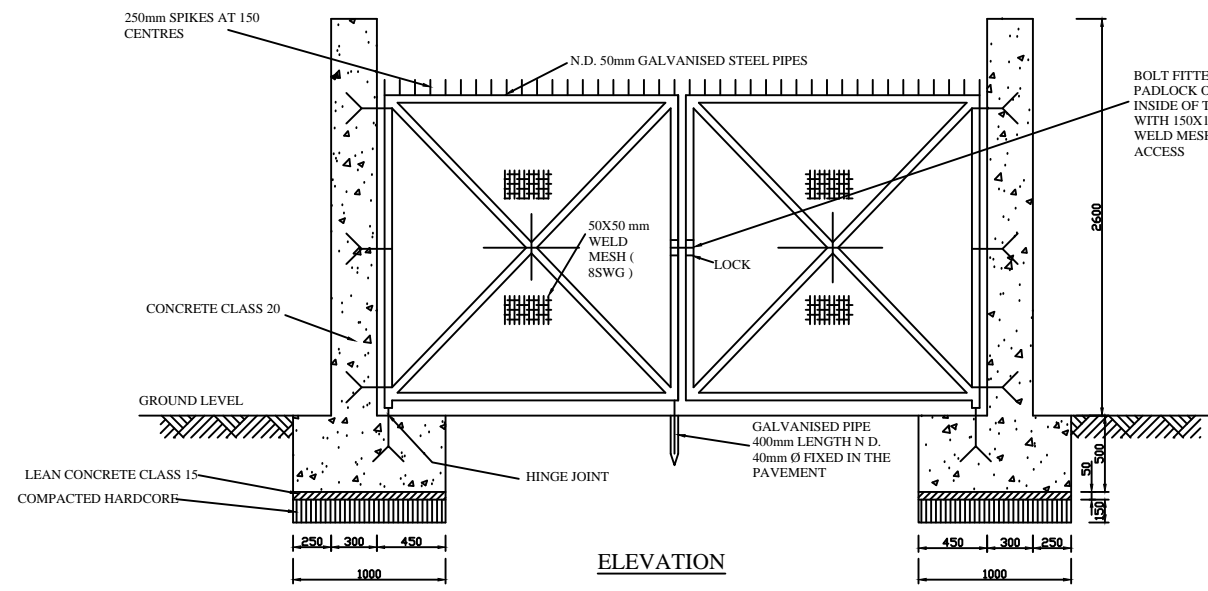
PIPE DIAMETER DN (mm)	ANCHOR BLOCKS ON GRADIENTS (TYPE GD)							
	DIMENSIONS (m)							
	A	L	H	H1	H2	H3	B1	B2
200	0.8	0.8	0.8	0.7	0.35	0.45	0.35	0.35
300	0.9	0.9	1.0	0.8	0.4	0.6	0.4	0.4
400	1.0	1.0	1.1	0.9	0.45	0.65	0.45	0.45
500	1.1	1.1	1.15	1.0	0.5	0.65	0.5	0.5
600	1.2	1.2	1.2	1.1	0.55	0.65	0.55	0.55
800	1.4	1.4	1.4	1.3	0.65	0.75	0.65	0.65

ANCHOR BLOCKS ON GRADIENTS (TYPE GD)

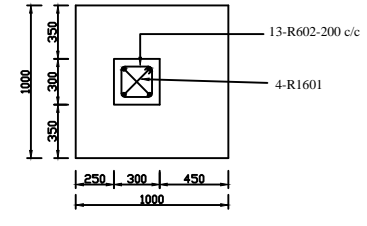
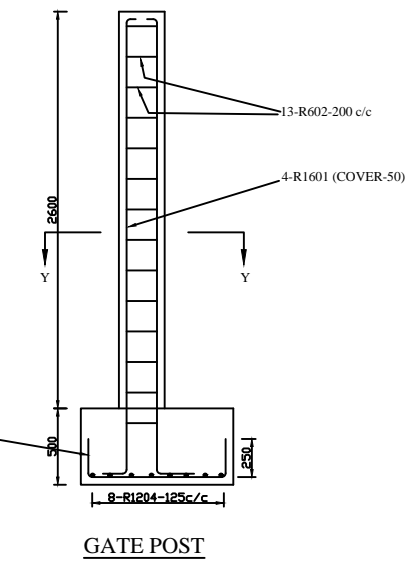
DETAILS OF ANCHOR BLOCKS

NOTES

- ANCHOR BLOCKS TO BE CONSTRUCTED FROM UNREINFORCED CONCRETE CLASS 15
- CONCRETE TO BE CAST AGAINST UNDISTURBED GROUND WHERE DISTURBED THE SOIL AROUND ANCHOR BLOCKS IS TO BE REMOVED AND FILLED WITH CONCRETE BEFORE THE MAIN SUPPORT PRESSURE TESTED
- 11" AND 1/4" BENDS TO BE USED FOR BENDS >6" BUT LESS THAN 11" AND 1/4"
- WHERE ACCURATE SOIL INFORMATION IS AVAILABLE ANCHOR BLOCKS MAY BE INDIVIDUALLY DESIGNED
- SHUTTERED SURFACES TO BE CLASS F1
- CONCRETE TO BE CAST AGAINST UNDISTURBED SOILS SO POLYTHENE SHALL BE USED TO PREVENT INGRESS OF FOREIGN MATTER INTO THE CONCRETE
- ANCHOR BLOCKS SHALL BE CAST TO LEAVE ALL PIPE JOINTS FREE
- ALTHOUGH FLANGED JOINTS ARE SHOWN THIS DRAWING APPLIES EQUALLY TO SPIGOT AND SOCKET JOINTED PIPES



DOUBLE GATE



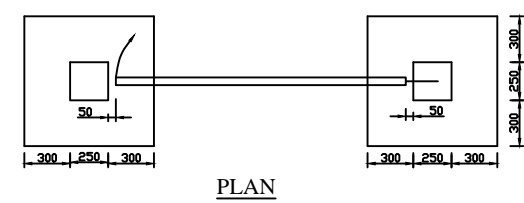
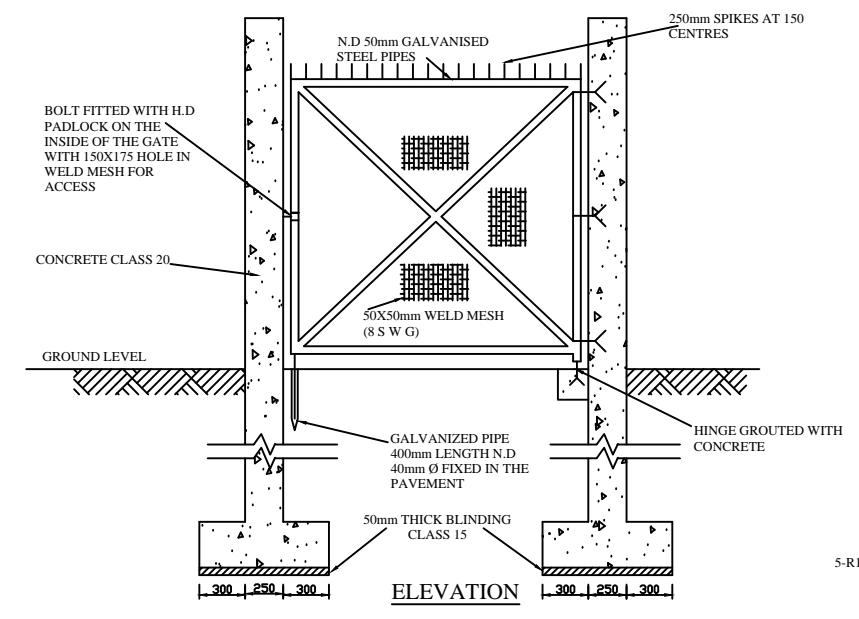
SECTION Y-Y

1. ALL BENDING DIMENSIONS ARE IN ACCORDANCE WITH BS 4466 (1969)

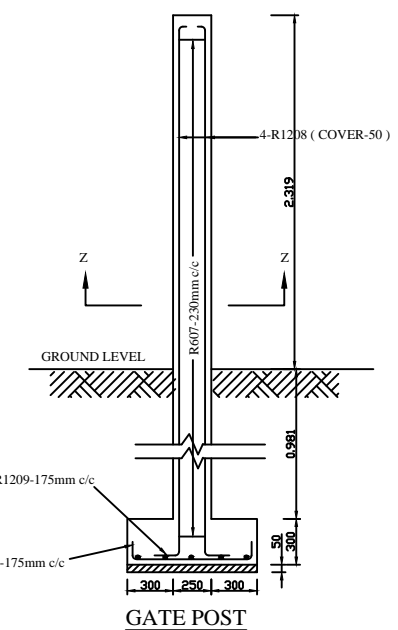
BAR BENDING SCHEDULE

- NOTES**
- FENCE POSTS SHALL NOT BE MORE THAN 3m c/c
 - 3 ROWS OF GALVANIZED BARBED WIRE SHALL BE USED AT THE TOP OF THE FENCE. CHAIN LINK TYPE GLC. 160 B.S. 1722 VERTICALLY FOR THE REMAINDER WITH 3 No. LINE WIRES
 - R-DENOTES MILD STEEL TO BS.4443
 - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
 - WHERE NOT OTHERWISE SPECIFICALLY MENTIONED THE RECOMMENDATIONS CONTAINED IN BS1722 PART 1 1972 SHALL BE ADHERED TO
 - AT CORNERS OR AT DISTANCES MORE THAN 30m c/c. FENCE POSTS SHOULD BE ADDITIONALLY SUPPORTED WITH STRUTS ALONG THE LINE OF FENCING TO THE POSTS. THE STRUTS ARE TO BE OF THE SAME SECTION AS THE FENCE POSTS INCLINED AT AN ANGLE OF 45° AND POSITIONED TO CONNECT WITH THE POSTS 900mm ABOVE THE GROUND. THE OTHER END OF THE STRUT TO BE EMBEDDED IN 500X500mm MASS CONCRETE CLASS 15

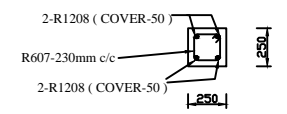
LOCATION	BAR MARK	TYPE AND SIZE	No. IN EACH	TOTAL No.	CUT LENGTH IN METRES	TOTAL LENGTH IN METRES	SHAPE CODE	A	B	C	WEIGHT KG
CHAIN LINK FENCING POST	605	R6	32	32	0.450	14.400	60	0.600	0.600		3.197
	606	R6	4	4	3.160	12.640	62	0.580	0.385	2.580	4.993



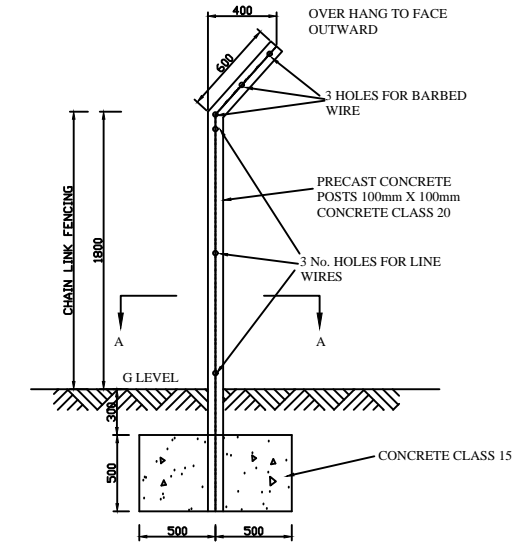
PLAN



GATE POST



SECTION Z-Z



CHAIN LINK FENCING POST

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:
CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITTLE

GATE AND FENCE POST

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

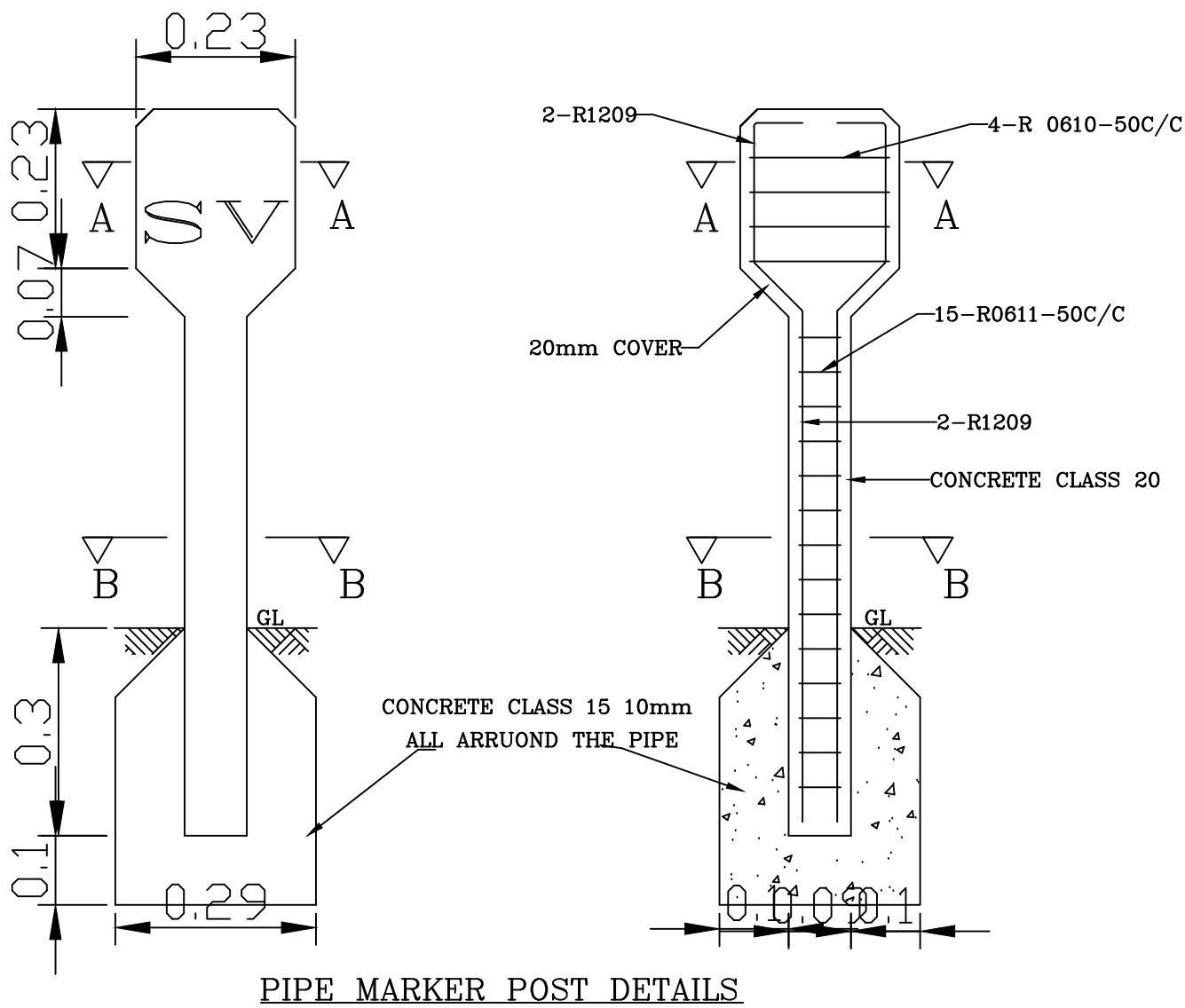
DATUM

Vertical: New Khartoum

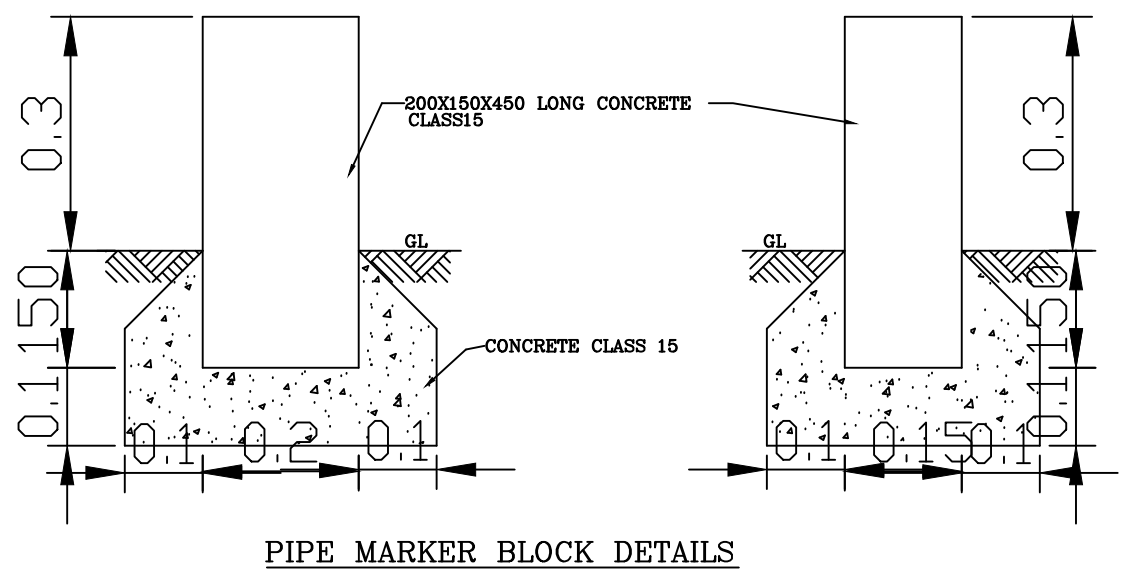
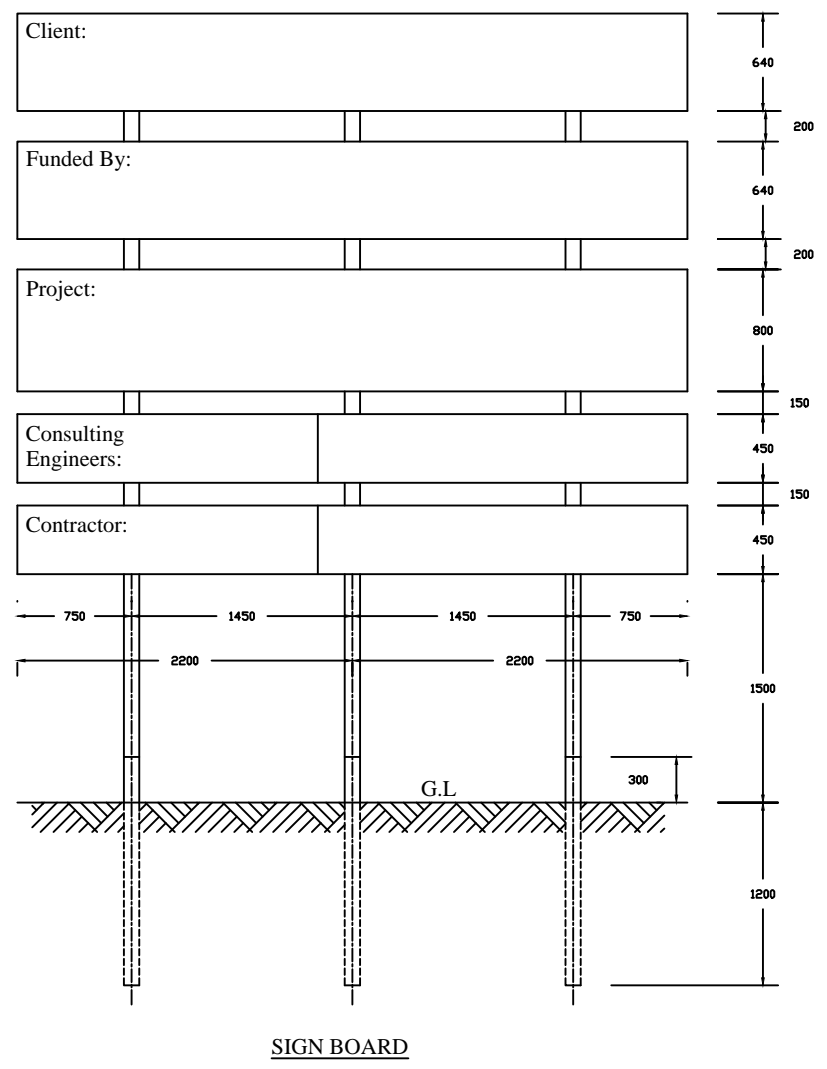
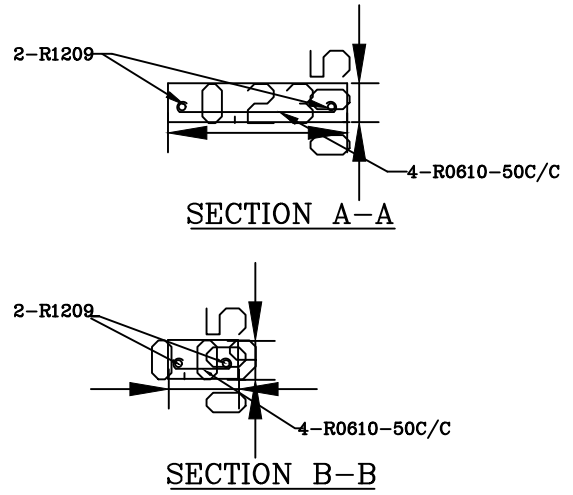
Horizontal: UTM ZONE 36N ARC 60

DWG. No. KP/BWS/SD/03

SHEET



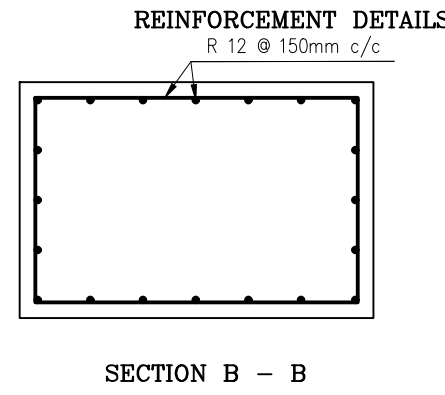
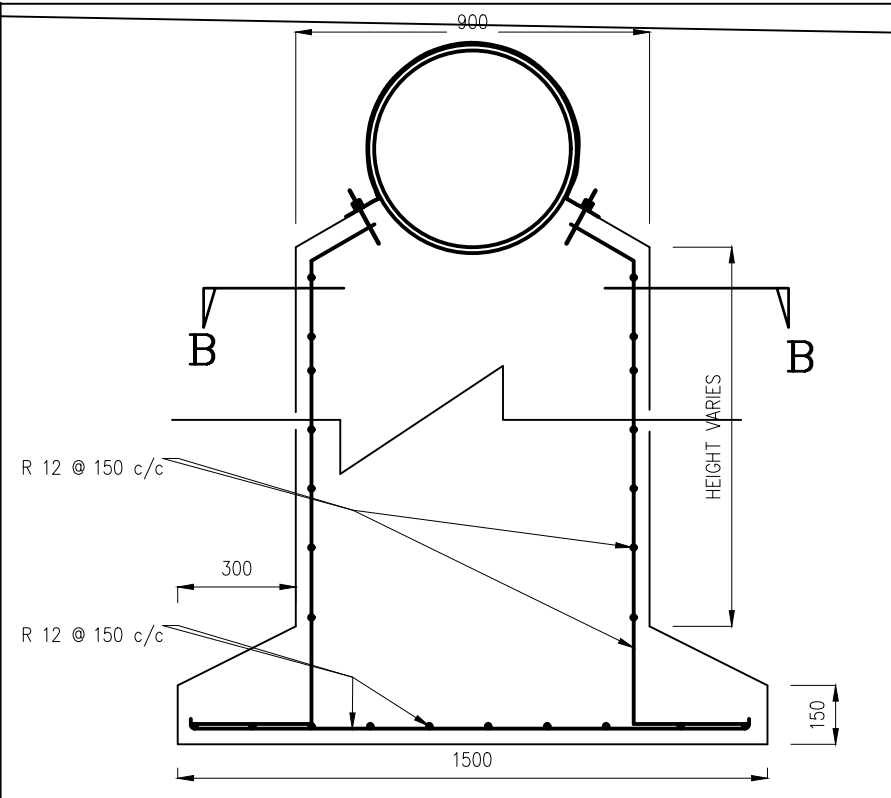
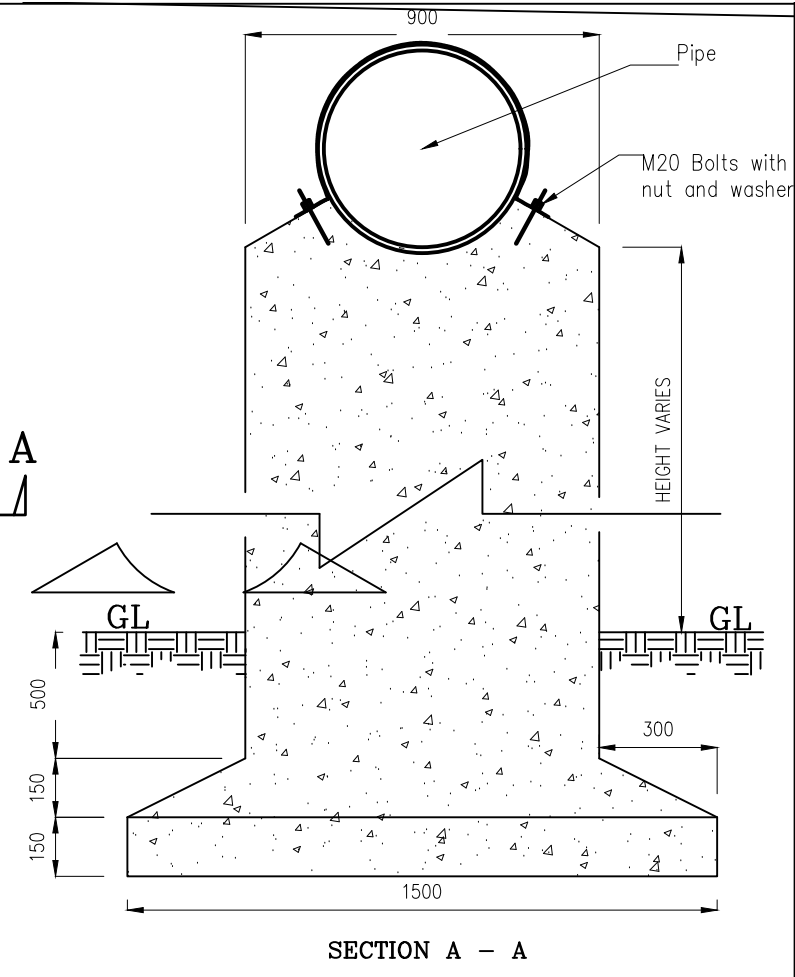
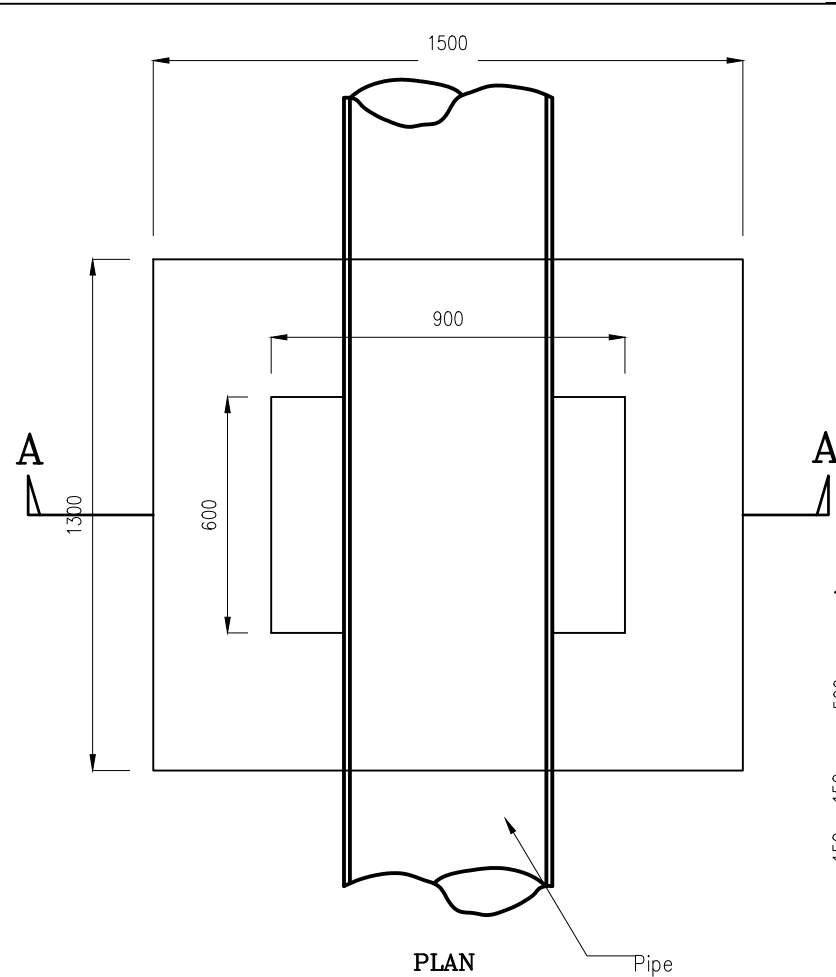
Notes
 LETTERS CARVED ON INDICATOR PLATE SHOULD BE AS FOLLOWS:
 S.V FOR SLUICE VALVE
 S.A.V. FOR SINGLE AIR VALVE
 D.A.V. FOR DOUBLE AIR VALVE
 F.H. FOR FIRE HYDRANTS
 W.O FOR WASHOUT



BAR BENDING SCHEDULE

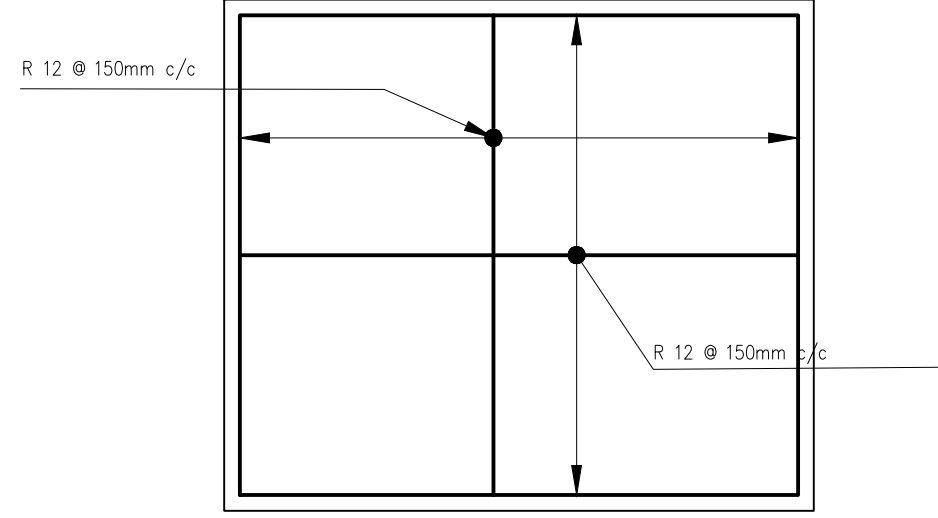
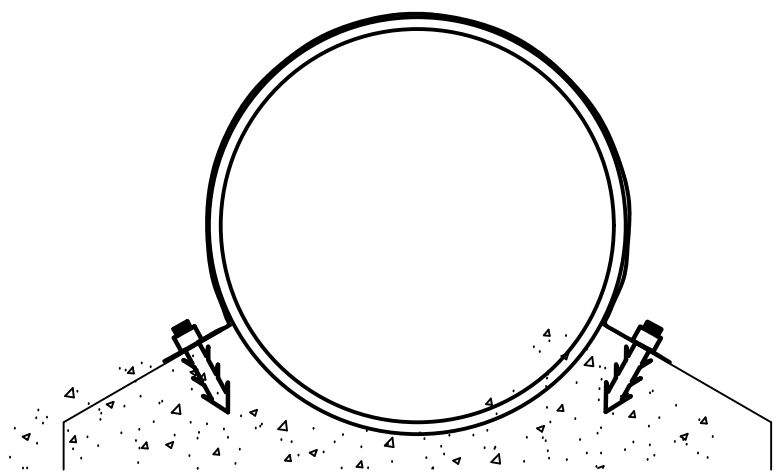
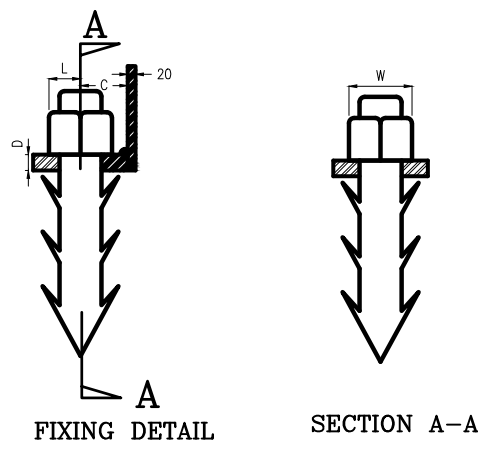
MEMBER	BAR MARK	TYPE & SIZE	No. IN EACH	TOTAL No.	LENGTH OF BAR (mm)	TOTAL LENGTH	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	WEIGHT
INDICATOR POLE	1209	R12	2	—	1200	2400	42	750	100	210	70	
	0610	R06	4	—	250	1000	33	190	—	—	—	
	0611	R06	15	—	100	1500	33	50	—	—	—	

NOTE
 ALL BENDING DIMENSIONS ARE IN ACCORDANCE WITH BS 4466 (1969)
 R-MILD STEEL BARS TO BS 4449



DETAILS OF MILD STEEL STRAPS

Pipe Dia. (mm)	T (mm)	W (mm)	D (mm)	L (mm)	C (mm)	Size of Bolt (mm)
80 - 150	6.0	40.0	13.0	45.0	25.0	M12
200 - 300	6.0	50.0	16.0	50.0	30.0	M16
400 - 600	6.0	50.0	19.0	55.0	35.0	M20



BASE SLAB REINFORCEMENT

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS
PLOT 2, BANDALI CLOSE (OLD PORT BELL ROAD),
TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:
DWG. TITLE

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
PIPE PEDESTAL STANDARD DETAILS

REVISIONS	DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:
		A.A	GS	PJM

SCALE:
DATUM
Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

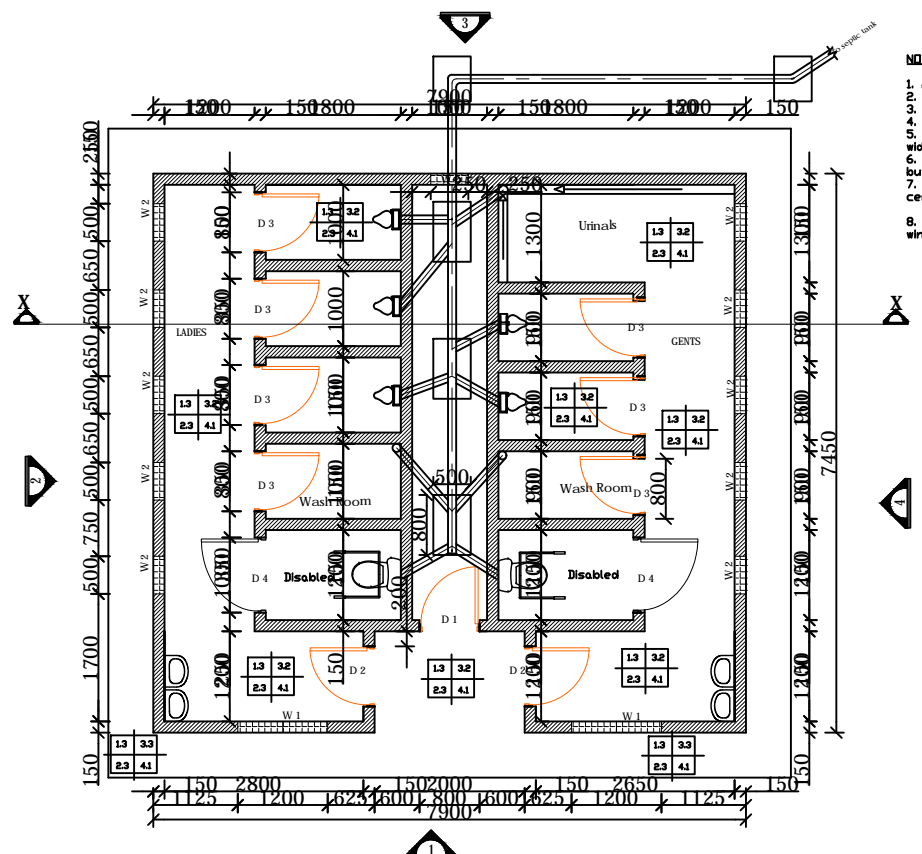
DWG. No.
KP/BWS/SD/05

SHEET

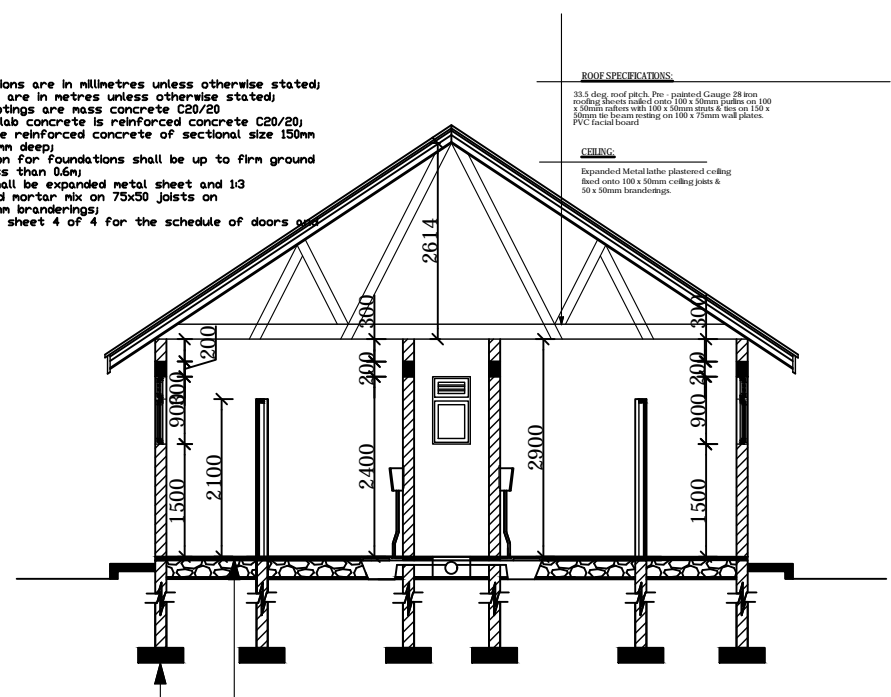
- NOTES**
- All dimensions are in millimetres unless otherwise stated;
 - All levels are in metres unless otherwise stated;
 - Strip Footings are mass concrete C20/20
 - Ground slab concrete is reinforced concrete C20/20
 - Beams are reinforced concrete of sectional size 150mm wide by 200mm deep
 - Excavation For Foundations shall be up to firm ground but not less than 0.6m
 - Ceiling shall be expanded metal sheet and 1:3 cement-sand mortar mix on 75x50 joists on 50x50mm brackings;
 - Refer to sheet 4 of 4 for the schedule of doors and windows;

ROOF SPECIFICATIONS:
 25.3 deg. roof pitch. Pre-painted Galva 28 base roofing sheets installed over 100 x 50mm joists on 100 x 50mm rafters with 100 x 50mm studs @ 600 x 150 x 50mm tie beams resting on 100 x 75mm wall plates. PVC facial board.

CEILING:
 Expanded Metal lath plastered ceiling fixed onto 100 x 50mm ceiling joists @ 60 x 50mm brackings.



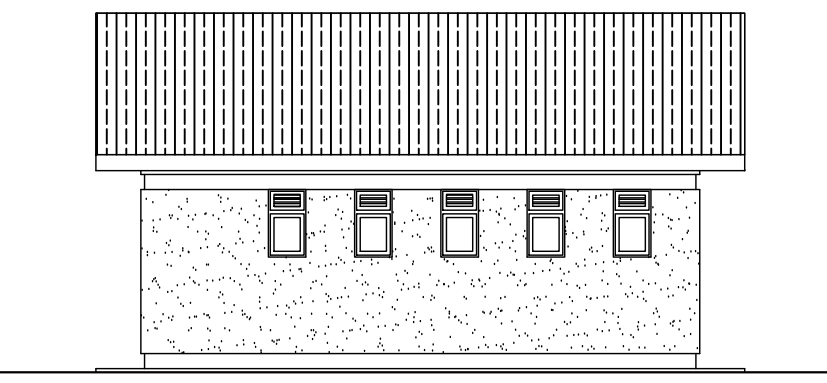
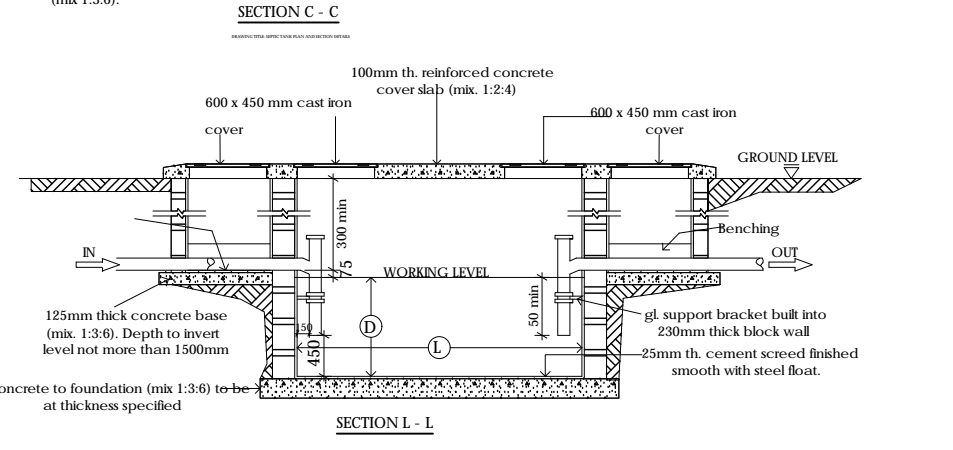
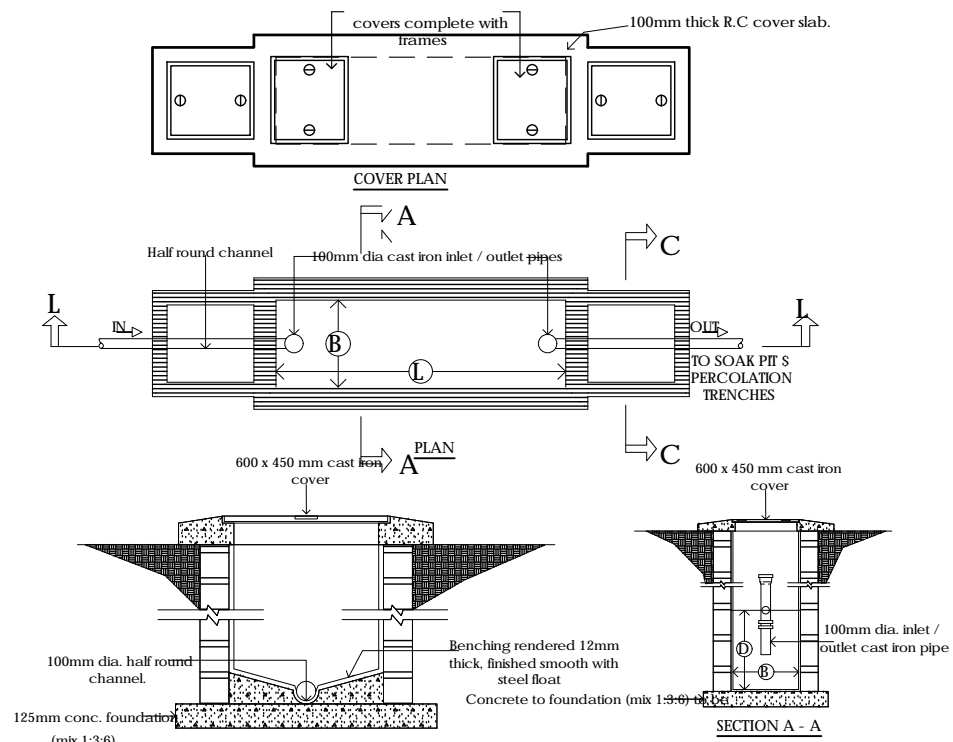
GROUND FLOOR PLAN



SECTION X-X

FOUNDATION CONSTRUCTION:
 Ceramic floor tiles on 100mm thick over the concrete (mix 1:2:4) with RRC mesh A142 on well compacted bedded 300mm thick sand over on well compacted treated laterite.

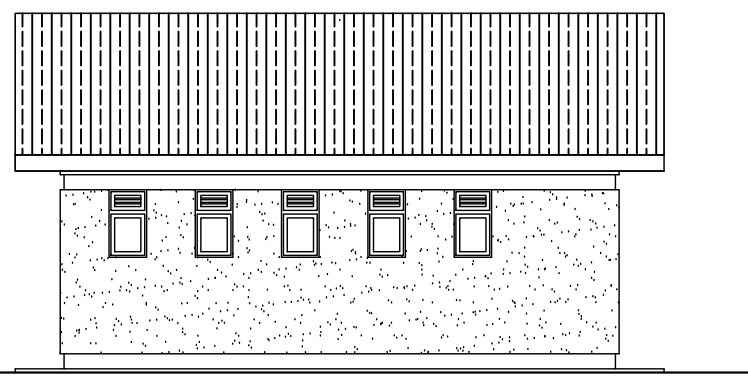
FOOTINGS:
 200 x 600 x 1 concrete strip foundation (mix 1:3:6) to receive 200mm thick plinth wall. Foundation depth to be determined on site and to be not less than 750mm.



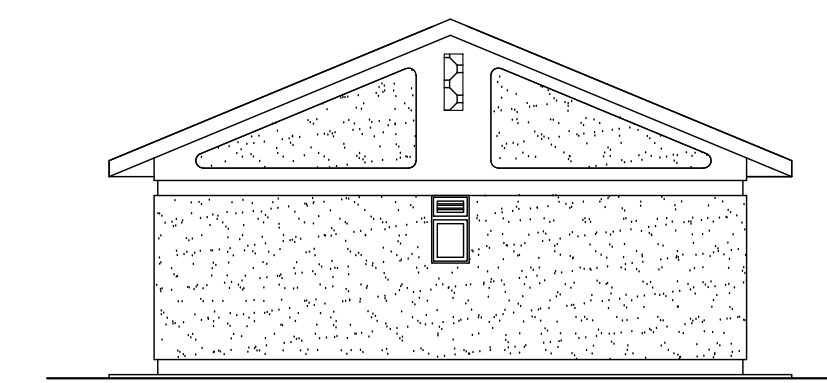
ELEVATION 2



ELEVATION 1



ELEVATION 4



ELEVATION 3

DOOR SCHEDULE			
Mark	Size	Remarks	Number Required
D 1		STEEL OPEN GRILLED DOOR	2
D 2		STEEL CASEMENT PANNELLED DOOR	1
D 3		TIMBER PANNELLED DOOR WITHOUT PERMANENT VENT ABOVE	7
D 4		TIMBER PANNELLED DOOR WITHOUT PERMANENT VENT ABOVE	2

WINDOW SCHEDULE			
Mark	Size	Remarks	Number Required
W 1		STEEL CASEMENT GLAZED WINDOW, SIDE HUNG OPENING OUT WITH PERMANENT VENT ABOVE	2
W 2		STEEL CASEMENT GLAZED WINDOW, TOP HUNG WITH PERMANENT VENT ABOVE	11

GOVERNMENT OF UGANDA
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 TEL: 256 41 220279,
 FAX: 256 41 220208,
 P.O. BOX 6583,
 KAMPALA, UGANDA.

PROJECT: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE: PUBLIC TOILET DETAILS

REVISIONS:

DATE:

DRAWN BY: A.A

CHECKED BY: GS

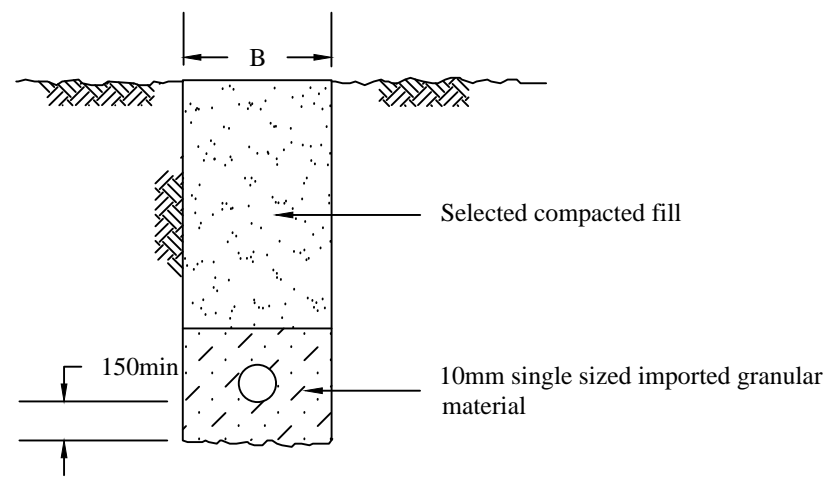
APPROVED BY: PJM

SCALE:

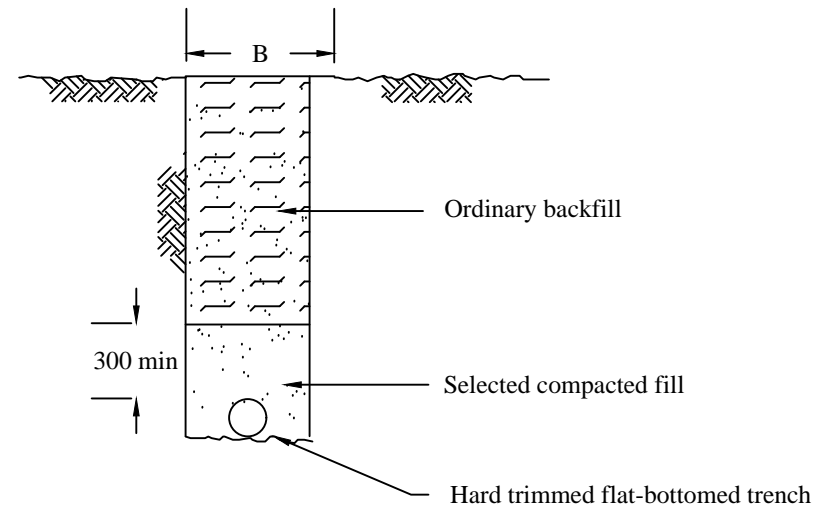
DATUM: Vertical: New Khartoum
 Horizontal: UTM ZONE 36N ARC 60

DWG. No.: KP/BWS/SD/06

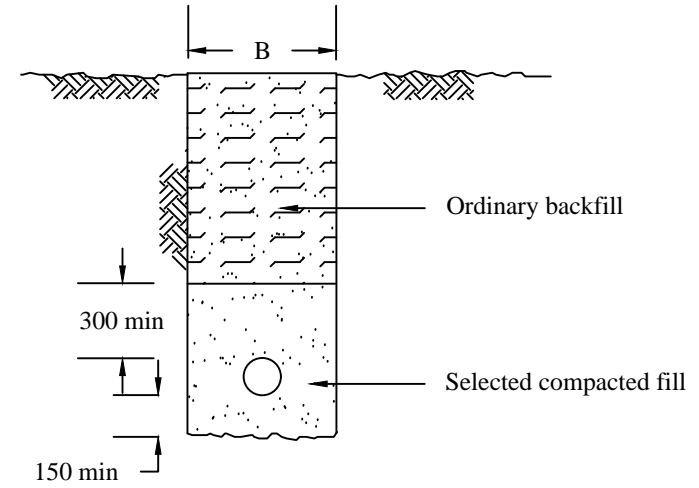
SHEET:



**uPVC PIPEWORK
TYPICAL TRENCH DETAILS**



(1): NORMAL SOIL CONDITIONS.



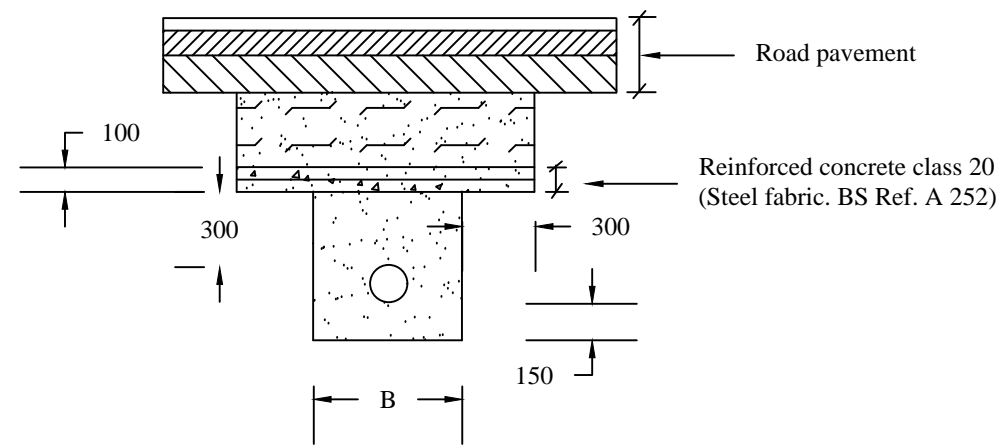
(2): ABNORMAL SOIL CONDITIONS SUCH AS
IN ROCK, STONES, OR SOILS WITH
SUBNORMAL BEARING CAPACITY.

**DUCTILE IRON PIPEWORK
TYPICAL TRENCH DETAILS**

TRENCH WIDTHS FOR uPVC PIPES

NOMINAL DIAMETER (mm)	TRENCH WIDTH, B (mm)
50	600
80	600
100	700
150	800

$B=D+600\text{mm}$ (minimum $B=600\text{mm}$)
Where D is the outside diameter of the pipe

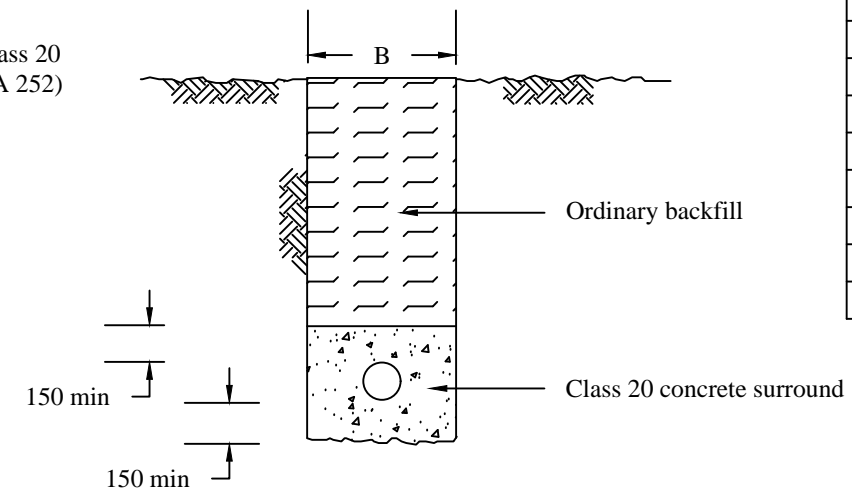


**PIPE PROTECTION AT
ROAD CROSSING**

TRENCH WIDTHS FOR DUCTILE IRON PIPES

NOMINAL DIAMETER (mm)	TRENCH WIDTH, B (mm)
80	480
100	500
150	550
200	622
250	670
300	725
400	830
500	900
600	1000

$B=D+400\text{mm}$
Where D is the outside diameter of the pipe



CONCRETE SURROUND

At locations where depth of cover is less than 600 mm and as directed by the Engineer

GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS

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TEL: 256 41 220279,
FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

PROJECT:

**CONSULTANCY SERVICES FOR DESIGN REVIEW AND
CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY
AND SANITATION SYSTEM**

DWG. TITLE

TRENCH STANDARD DETAILS

REVISIONS

DATE:

DRAWN BY:

A.A

CHECKED BY:

GS

APPROVED BY:

PJM

SCALE:

DATUM

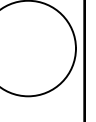
Vertical: New Khartoum

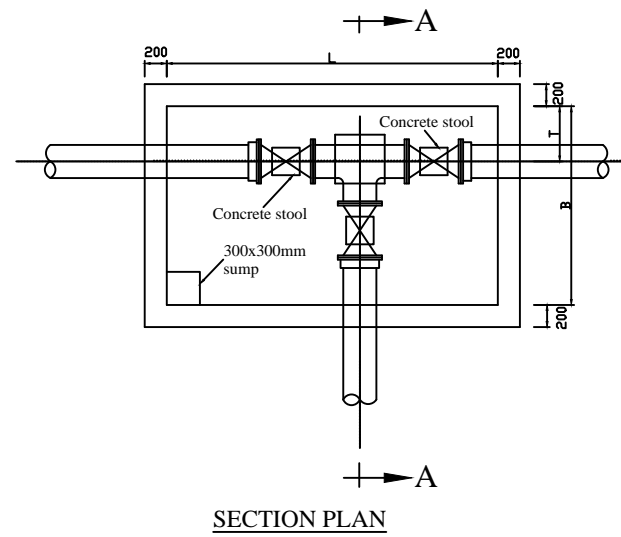
Horizontal: UTM
ZONE 36N ARC 60

DWG. No.

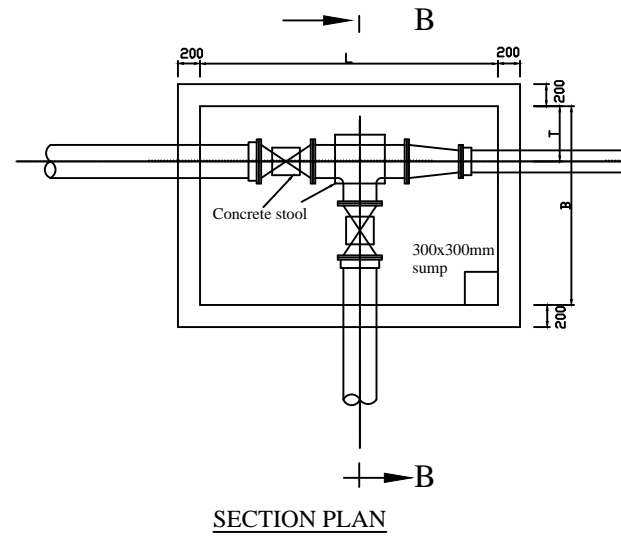
KP/BWS/SD/07

SHEET

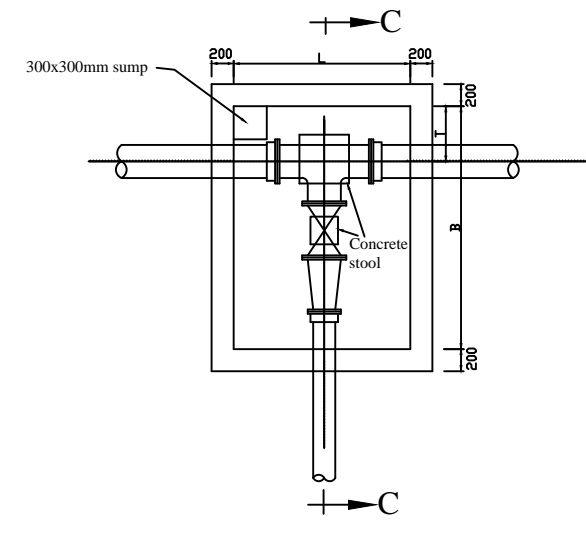




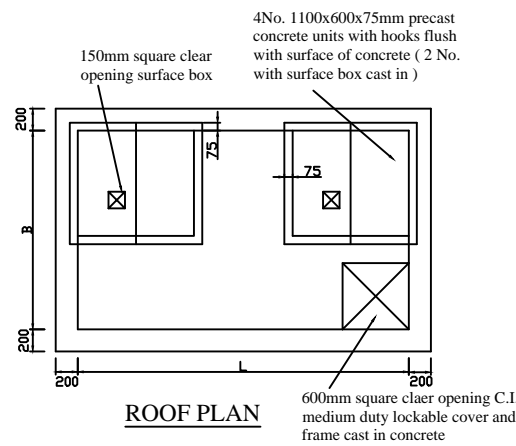
SECTION PLAN



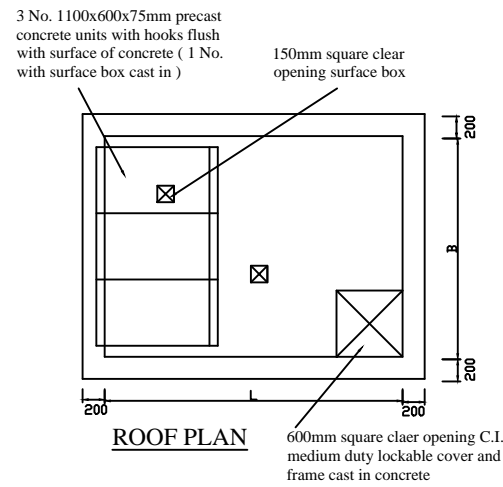
SECTION PLAN



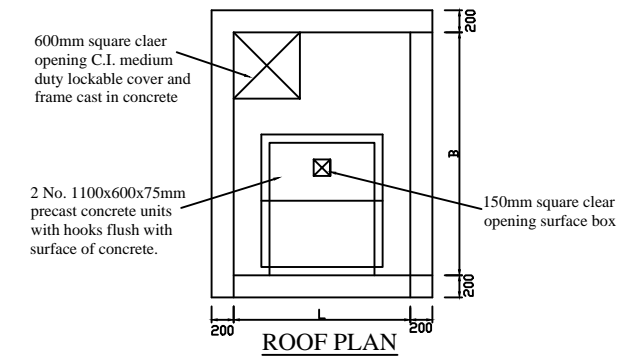
SECTION PLAN



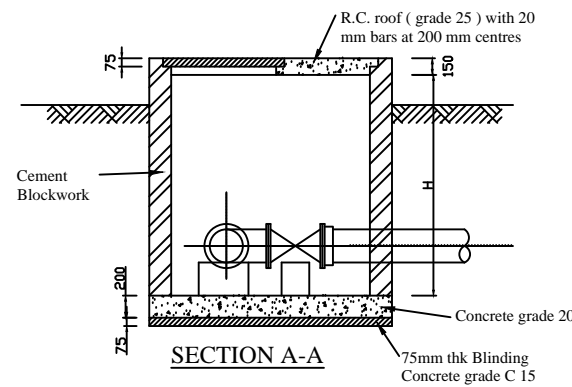
ROOF PLAN



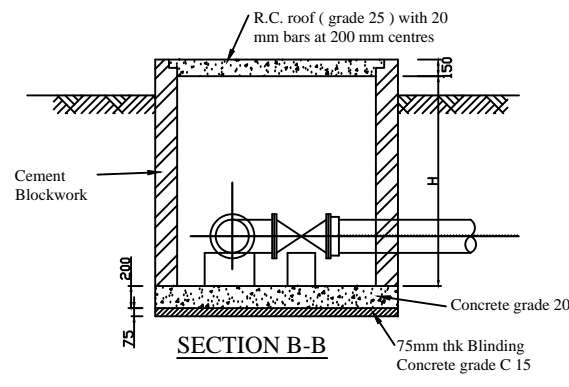
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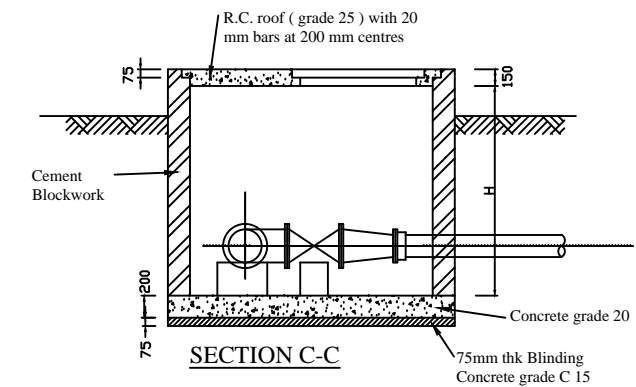
ROOF PLAN



SECTION A-A
TYPE 1 VALVE CHAMBER



SECTION B-B
TYPE 2 VALVE CHAMBER



SECTION C-C
TYPE 3 VALVE CHAMBER

VALVE CHAMBER DIMENSIONS

PIPE DIAMETER(mm)	CHAMBER TYPE	L (mm)	B (mm)	H (mm)	T (mm)
80-150	1	2000	1350	1800	350
	2	1800	1350	1800	350
	3	1300	1600	1800	350
200-500	1	3000	1800	2000	500
	2	2700	1800	1900	500
	3	1600	2200	1900	500

NOTES:

- The pipe works shown are typical arrangements. The actual pipe work applicable in each case are given in the relevant fittings drawings.
- The final position on the pipe work within the chamber will be directed on site.

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FAX: 256 41 220208,
P.O. BOX 6583,
KAMPALA, UGANDA.

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DWG. TITLE

VALVE CHAMBERS STANDARD DETAILS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

Vertical: New Khartoum

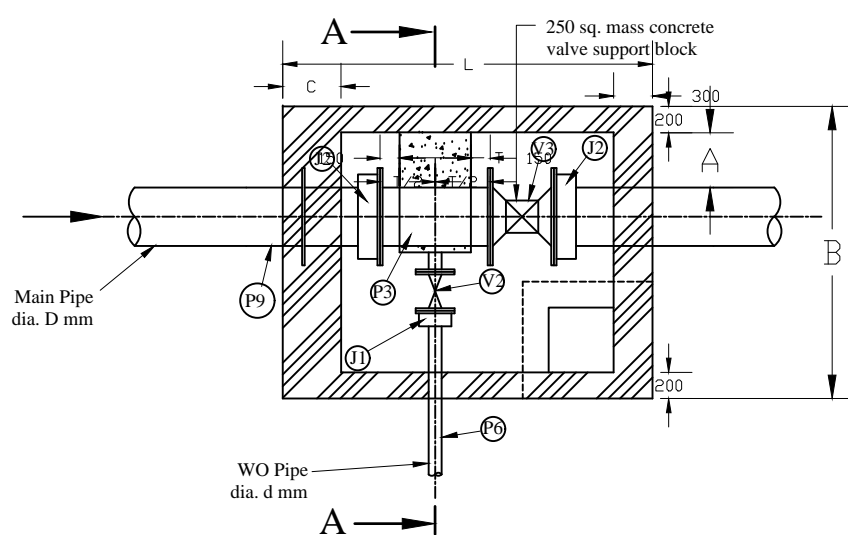
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DWG. No.

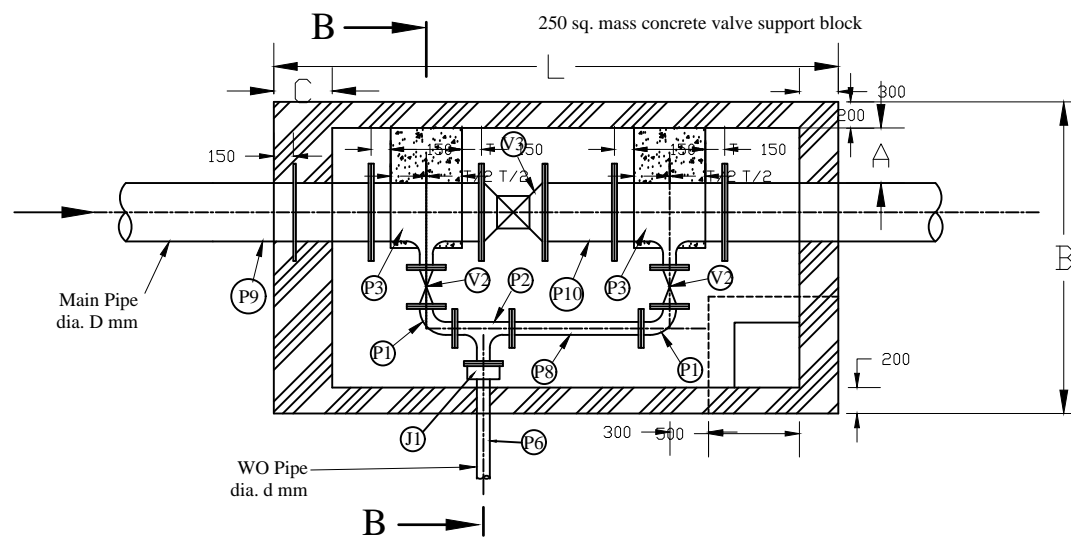
KP/BWS/SD/08

SHEET



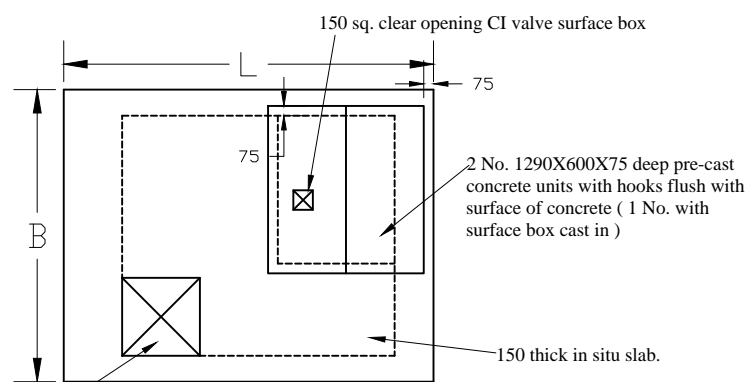


SECTION PLAN

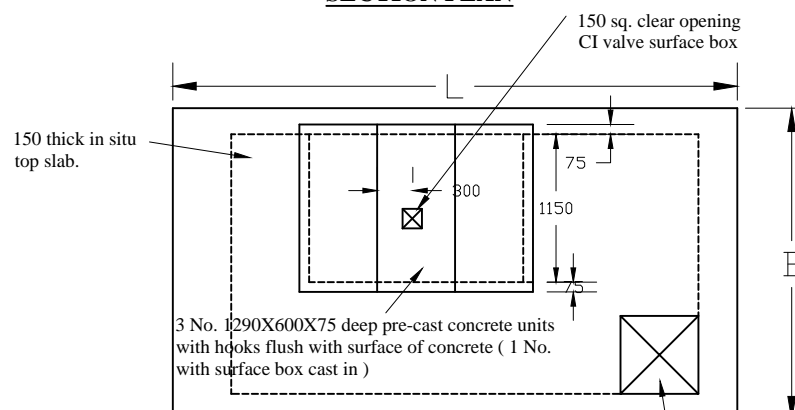


SECTION PLAN

DIMENSIONS OF WASHOUT CHAMBERS							
TYPE OF CHAMBER	DIAMETER (mm) DN	DIMENSIONS (mm)					
		A	B	C	L	H	T
SINGLE IN-LINE VALVE WITH DOUBLE WASHOUT-TYPE 2	450	650	2400	450	4350	2175	550
	400	650	2350	400	4200	2050	450
	300	550	2250	300	3900	1900	400
	250	550	2200	300	3700	1850	400
	200	500	2100	300	3250	1700	350
	150	500	2050	300	3000	1650	300
	100	450	2000	300	2850	1600	200
SINGLE IN-LINE VALVE WITH SINGLE WASHOUT-TYPE 1 & 3	450	650	2250	450	2850	2175	550
	400	650	2200	400	2700	2050	450
	300	550	1900	300	2700	1900	400
	250	550	1800	300	2600	1850	400
	200	500	1750	300	2300	1700	350
	150	500	1700	300	2200	1650	300
	100	450	1650	300	2050	1600	200
	80	400	1550	300	2000	1600	150

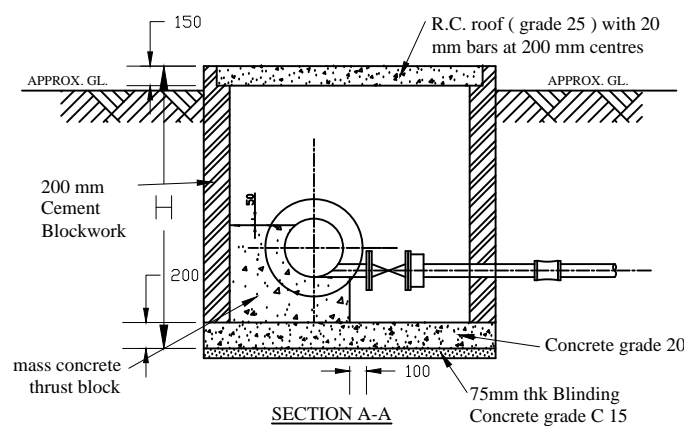


ROOF PLAN

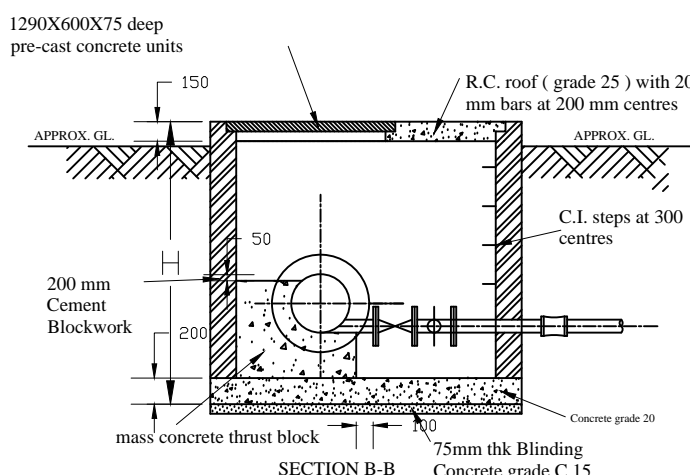


ROOF PLAN

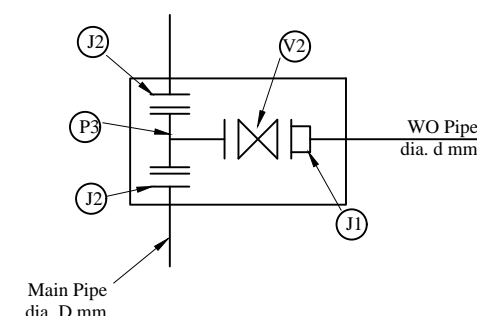
SCHEDULE OF PIPEWORK		
ITEM No.	Dia (mm)	DESCRIPTION
P1	d	DI Flanged 90 Deg. Bend
P2	d x d	DI Flanged Tee
P3	D x d	DI Flanged Level Invert Tee
P6	d	DI Washout Pipe, length to suit
P8	d	DI Double Flanged Pipe Piece, length not exceeding 1m
P9	D	1m long DI straight pipe with puddle flange
P10	D	DI Double Flanged Pipe Piece, length not exceeding 1m
J1	d	DI Flanged Adaptor
J2	D	DI Flanged Adaptor
V2	d	Flanged Gate Valve
V3	D	Flanged Gate Valve, for D less or equal to 300mm dia
V3	D	Flanged Butterfly Valve, for D over 300mm dia



CHAMBER FOR SINGLE IN-LINE VALVE WITH SINGLE WASHOUT-TYPE 1



CHAMBER FOR SINGLE IN-LINE VALVE WITH DOUBLE WASHOUT-TYPE 2



WASHOUT TYPE 3

SIZES OF WASHOUT PIPES		
	MAIN PIPE SIZE, D (mm)	WO PIPE SIZE, d (mm)
Washout Type 1 and 2	DN 500	DN 200
	DN 300	DN 150
	DN 200	DN 80
	OD 110	OD 50/ DN 40
Washout Type 3	OD 50	OD 50/ DN 40
	DN 500	DN 300
	DN 300	DN 200
	DN 200	DN 125
	OD 110	OD 75/ DN 65
	OD 50	OD 50/ DN 40

In general,
For Washout Type 1 & 2, d = 0.4D
For Washout Type 3, d = 0.6D

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P.O. BOX 6583,
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DWG. TITLE

WASHOUT CHAMBERS STANDARD DETAIL

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

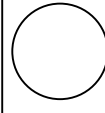
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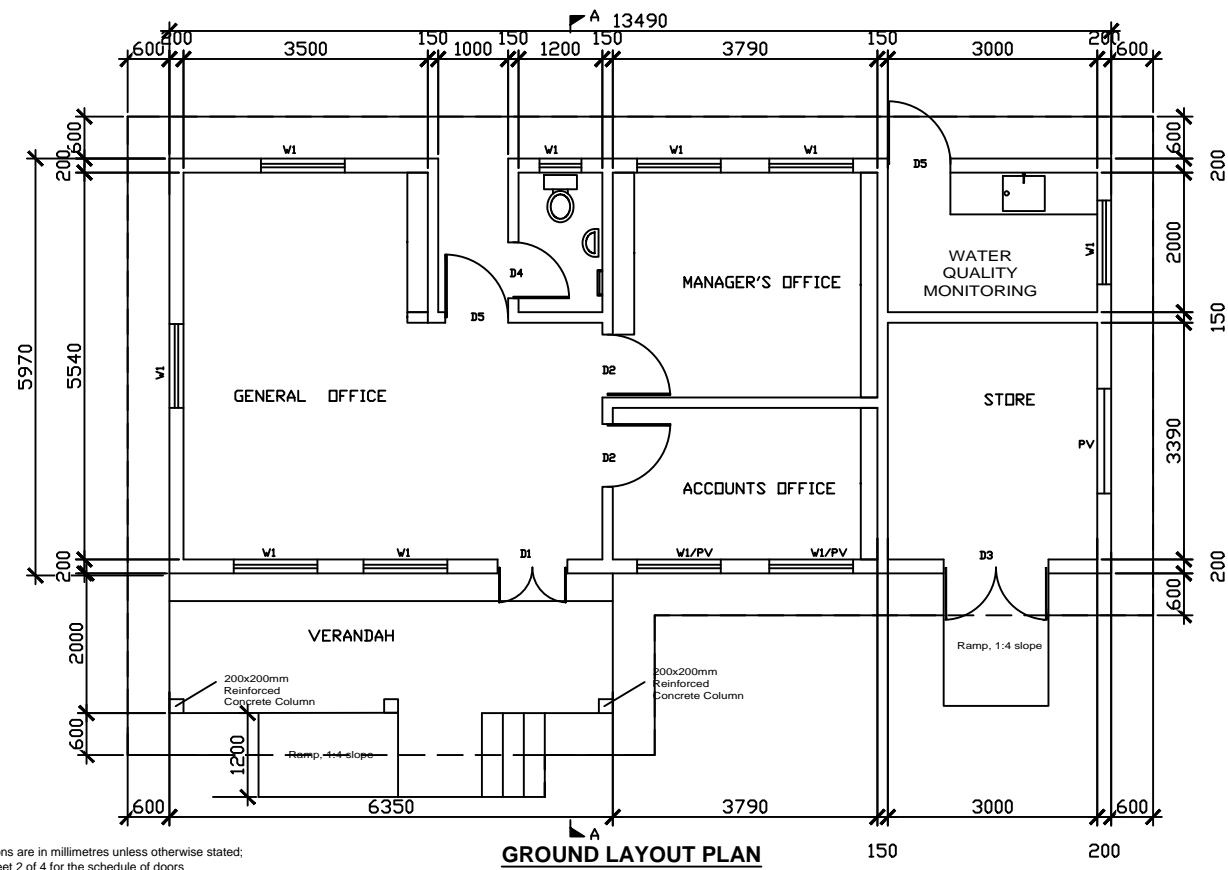
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DWG. No.

KP/BWS/SD/09

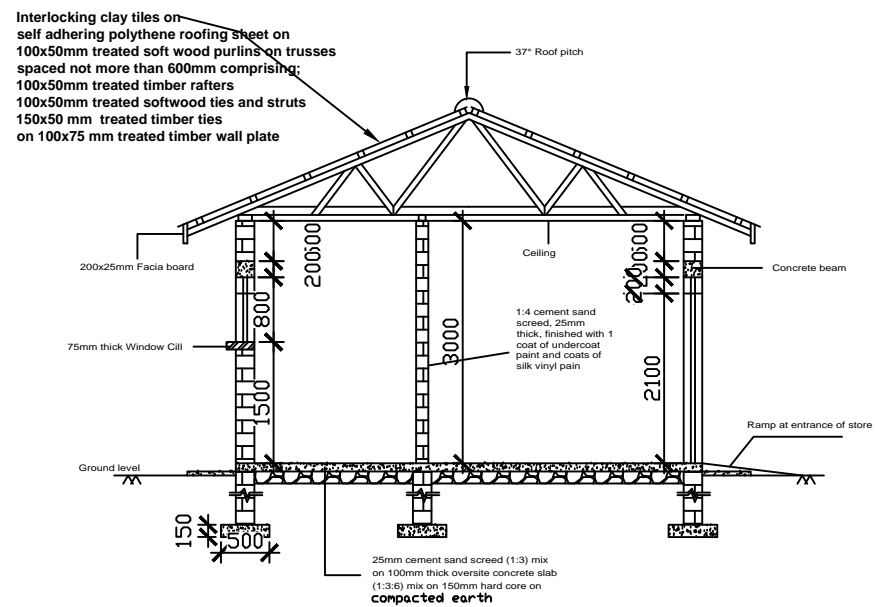
SHEET





NOTES
 1. All dimensions are in millimetres unless otherwise stated;
 2. Refer to sheet 2 of 4 for the schedule of doors and windows;

GROUND LAYOUT PLAN

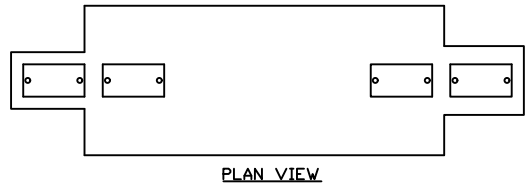


Interlocking clay tiles on self adhering polythene roofing sheet on 100x50mm treated soft wood purlins on trusses spaced not more than 600mm comprising:
 100x50mm treated timber rafters
 100x50mm treated softwood ties and struts
 150x50 mm treated timber ties on 100x75 mm treated timber wall plate

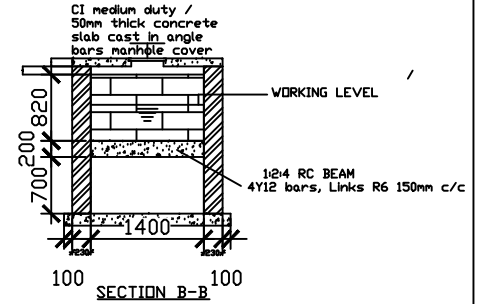
NOTES
 1. All dimensions are in millimetres unless otherwise stated;
 2. All levels are in metres unless otherwise stated;
 3. Strip footings are mass concrete C20/20
 4. Ground slab concrete is reinforced concrete C20/20;
 5. Beams are reinforced concrete of sectional size 230mm wide by 200mm deep;
 6. Excavation for foundations shall be up to firm ground but not less than 0.6m.

DOORS AND WINDOWS SCHEDULE					
MARK	TYPE	WIDTH	HEIGHT	No	REMARKS
D1	Steel	1200	2300	1	Casement steel double leaf door, with 200mm vent on door lintel with 4mm thick clear glass panes along the entire length of the door shutter
D2	Timber	900	2100	2	40mm thick single leaf hardwood frame and panel door, with door frame made of 150x50mm hardwood timber
D3	Steel	1500	2300	1	Mild steel double leaf door with shutters made of 2mm thick mild steel louvers with vent on door lintel
D4	Timber	800	2100	1	40mm thick single leaf hardwood frame and panel door, with door frame made of 150x50mm hardwood timber
D5	Steel	900	2100	1	Casement steel single leaf door, with 200mm vent on door lintel with 4mm thick clear glass panes along the entire length of the door shutter
W1	Steel	1200	1400	8	Casement steel window, with 200mm vent on window lintel plus burglar proof in frame and with clear glass 4mm thick
W2	Steel	400	700	8	As above but with frosted glass
W3	Steel	600	900	1	Welded security steel screen with 5x25x2mm square hollow section; frame with verticals of 12x12x2mm square hollow section @ 100mm CC welded and epoxy coated colour black
PV	Steel	1500	500	2	Fabricated louvered steel ventilator

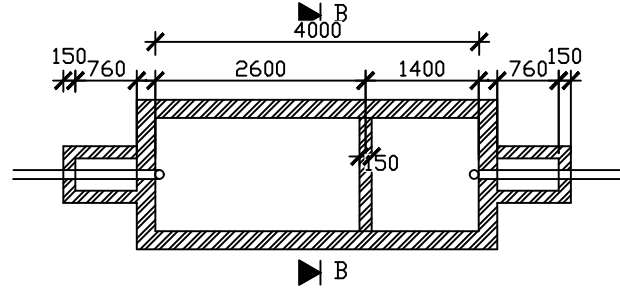
SECTION A-A



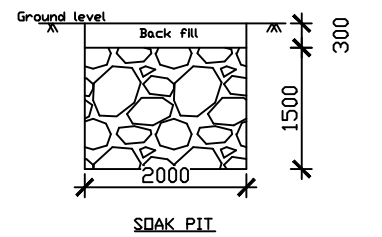
PLAN VIEW



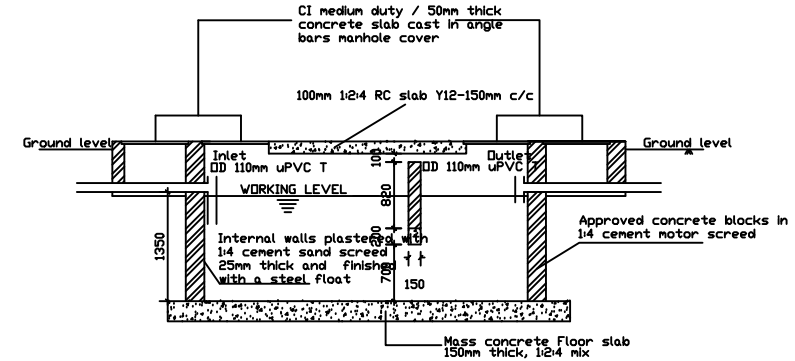
SECTION B-B



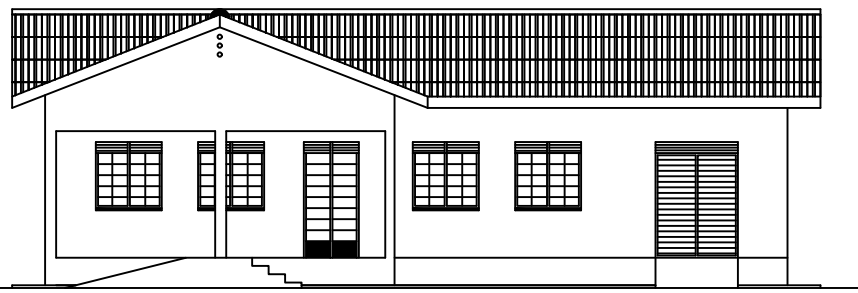
LONGITUDINAL SECTION



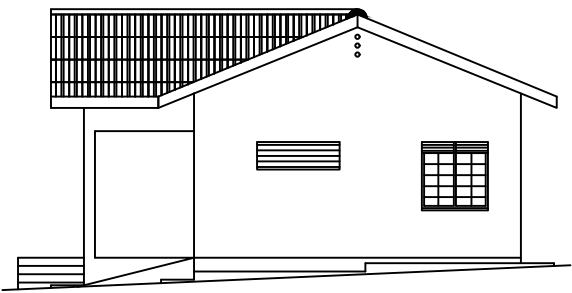
SOAK PIT



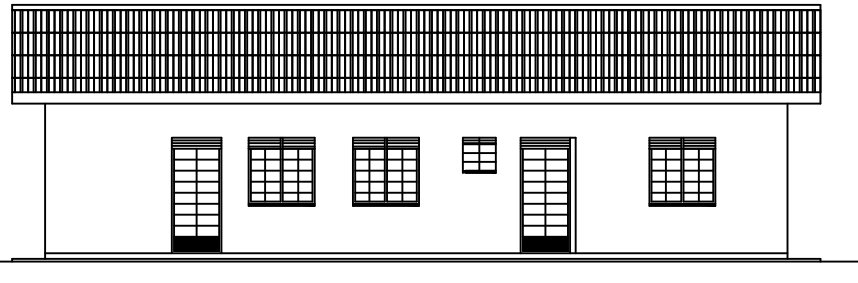
ALTERNATE MANHOLE COVER
 Handles made of 10mm mild steel bars with 3 protective coats of paint
 Angle bar: 50 x 50 mm & 4mm thick
 Wire mesh and anchors embedded in concrete
 600 x 450mm, 50mm thick concrete slab cast in angle bar: 50 x 50 mm & 4mm thick, for use as manhole covers



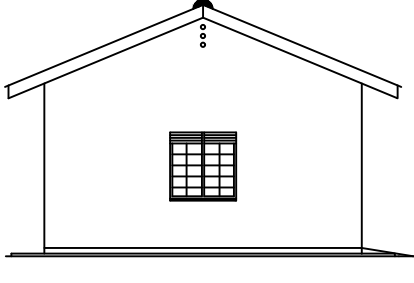
FRONT ELEVATION



RIGHT SIDE ELEVATION



REAR ELEVATION



LEFT SIDE ELEVATION

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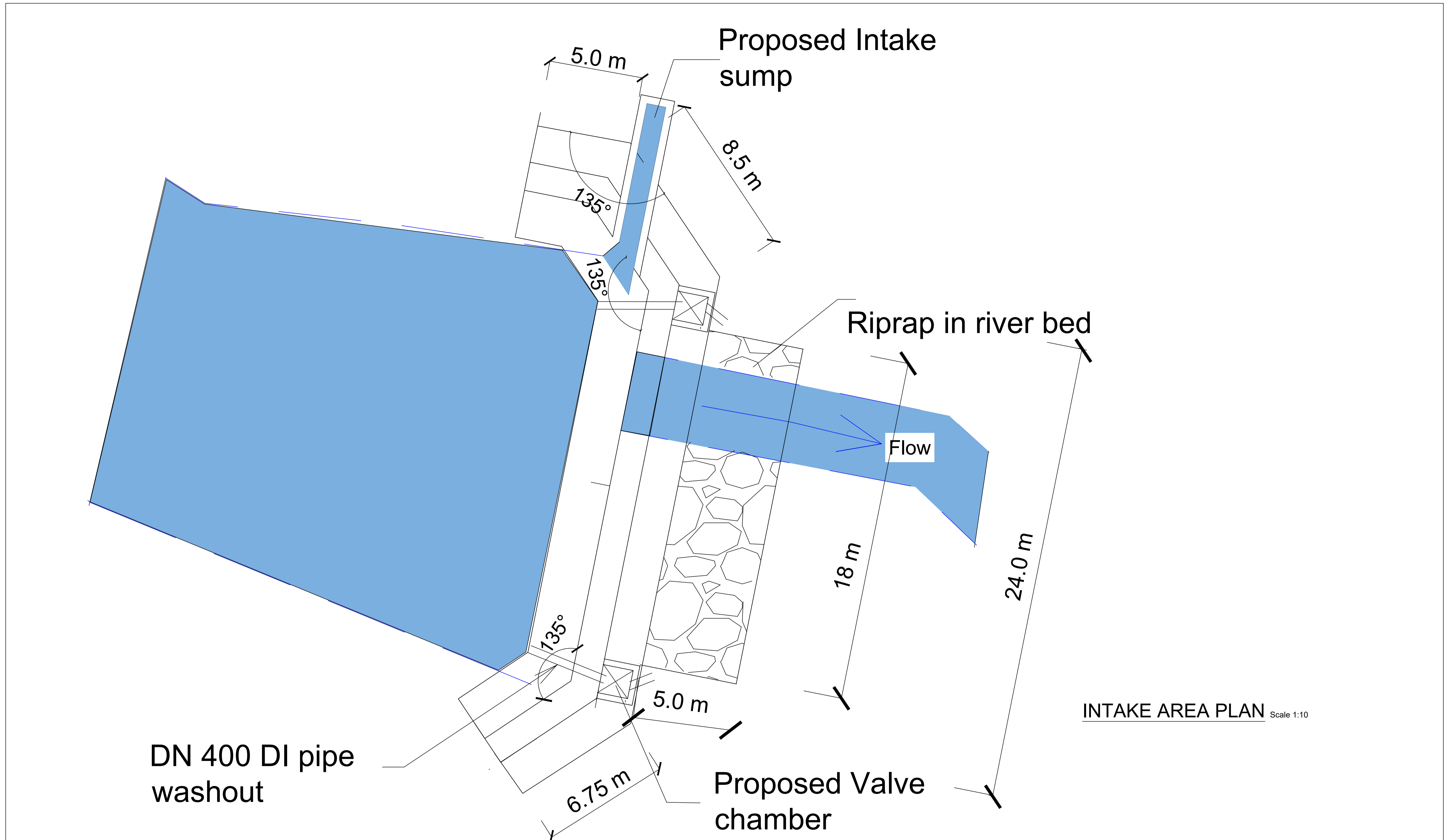
PROJECT: CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM
DWG. TITLE: WATER OFFICE DETAILS

REVISIONS
DATE:
DRAWN BY: A.A
CHECKED BY: GS
APPROVED BY: PJM

SCALE:
DATUM: Vertical: New Khartoum
 Horizontal: UTM ZONE 36N ARC 60

DWG. No. KP/BWS/SD/10

SHEET



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PROJECT:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND CONSTRUCTION SUPERVISION FOR BITSYA WATER SUPPLY AND SANITATION SYSTEM

DWG. TITLE

R C WEIR PLAN

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

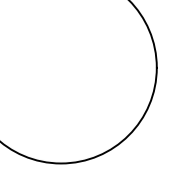
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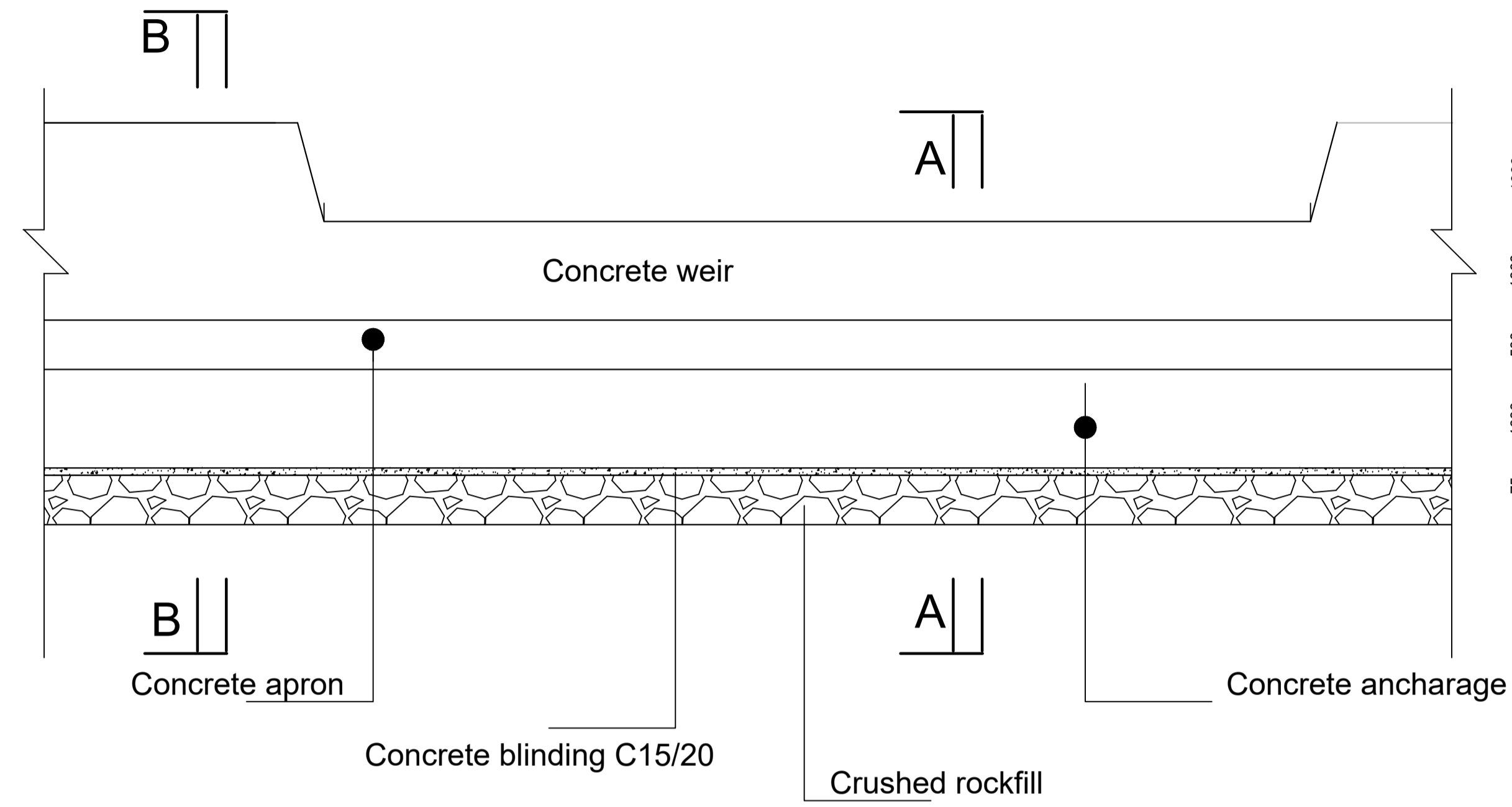
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DWG. No.

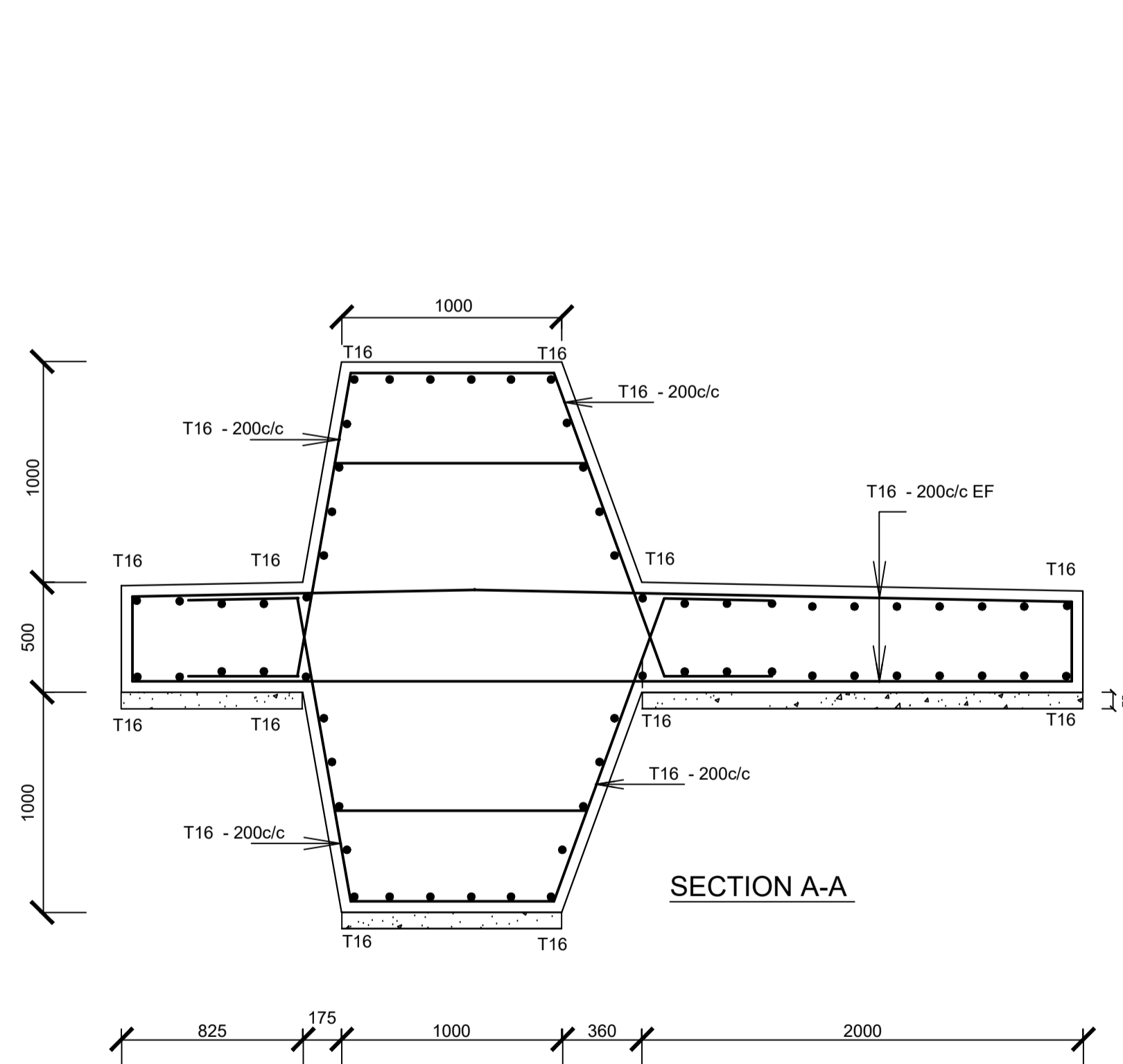
MWE/BWS/WTW/RCW-01

SHEET

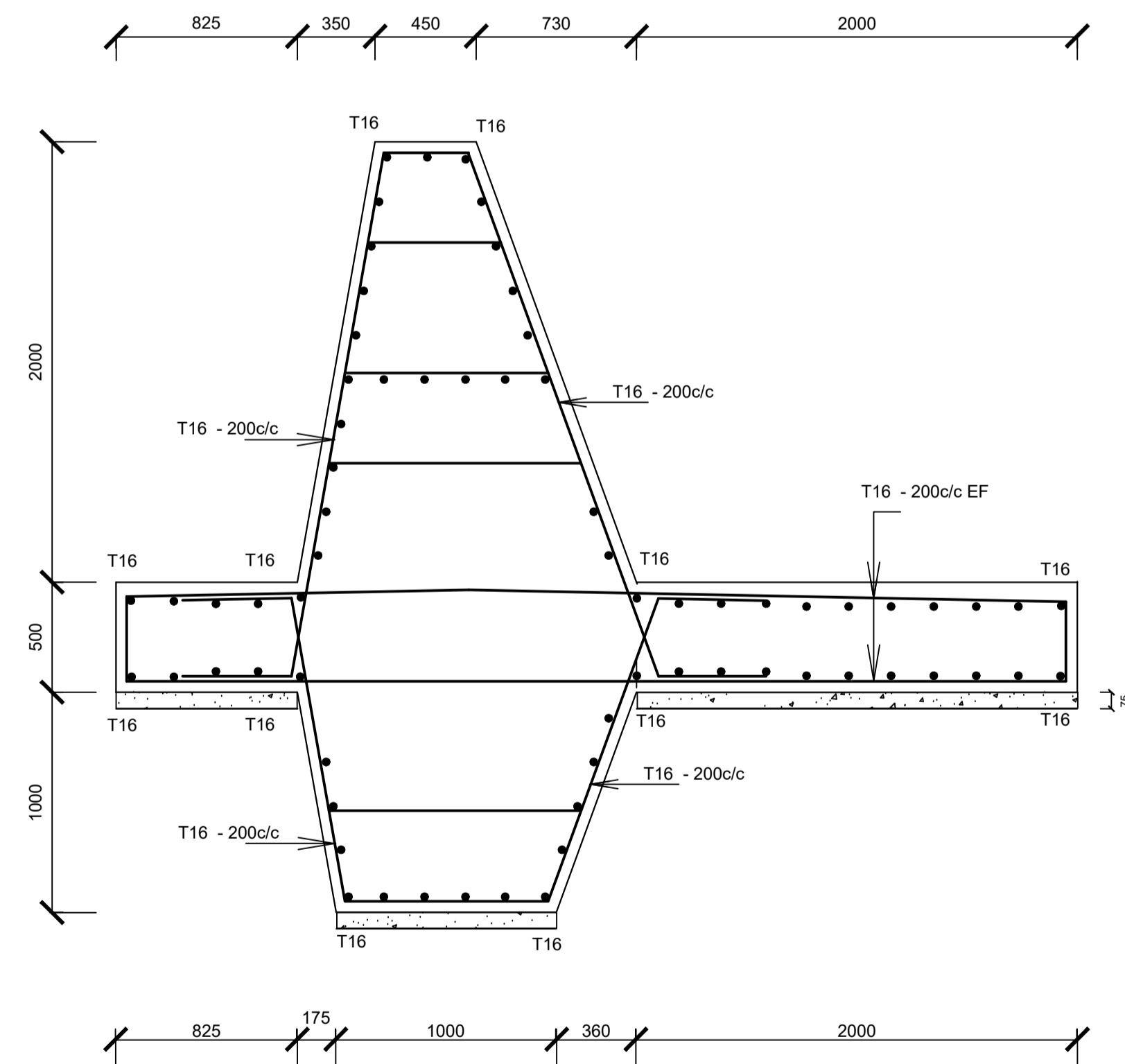




WEIR ELEVATION Scale 1:5



SECTION A - A Scale 1:2.5



SECTION B - B Scale 1:2.5



GOVERNMENT OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

KAGGA & PARTNERS



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DWG. TITLE

R C WEIR SECTIONS AND ELEVATIONS

REVISIONS

DATE:

DRAWN BY: A.A

CHECKED BY: GS

APPROVED BY: PJM

SCALE:

DATUM

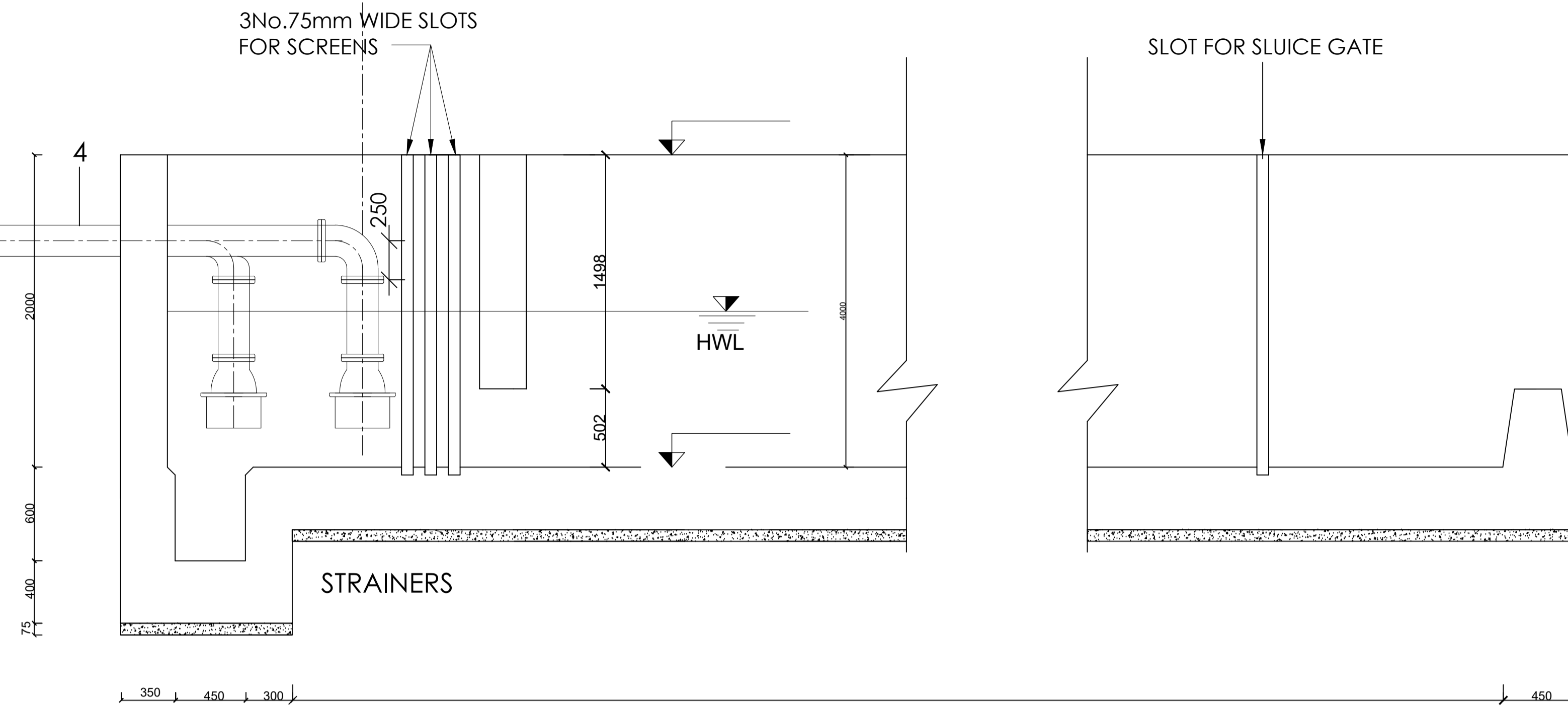
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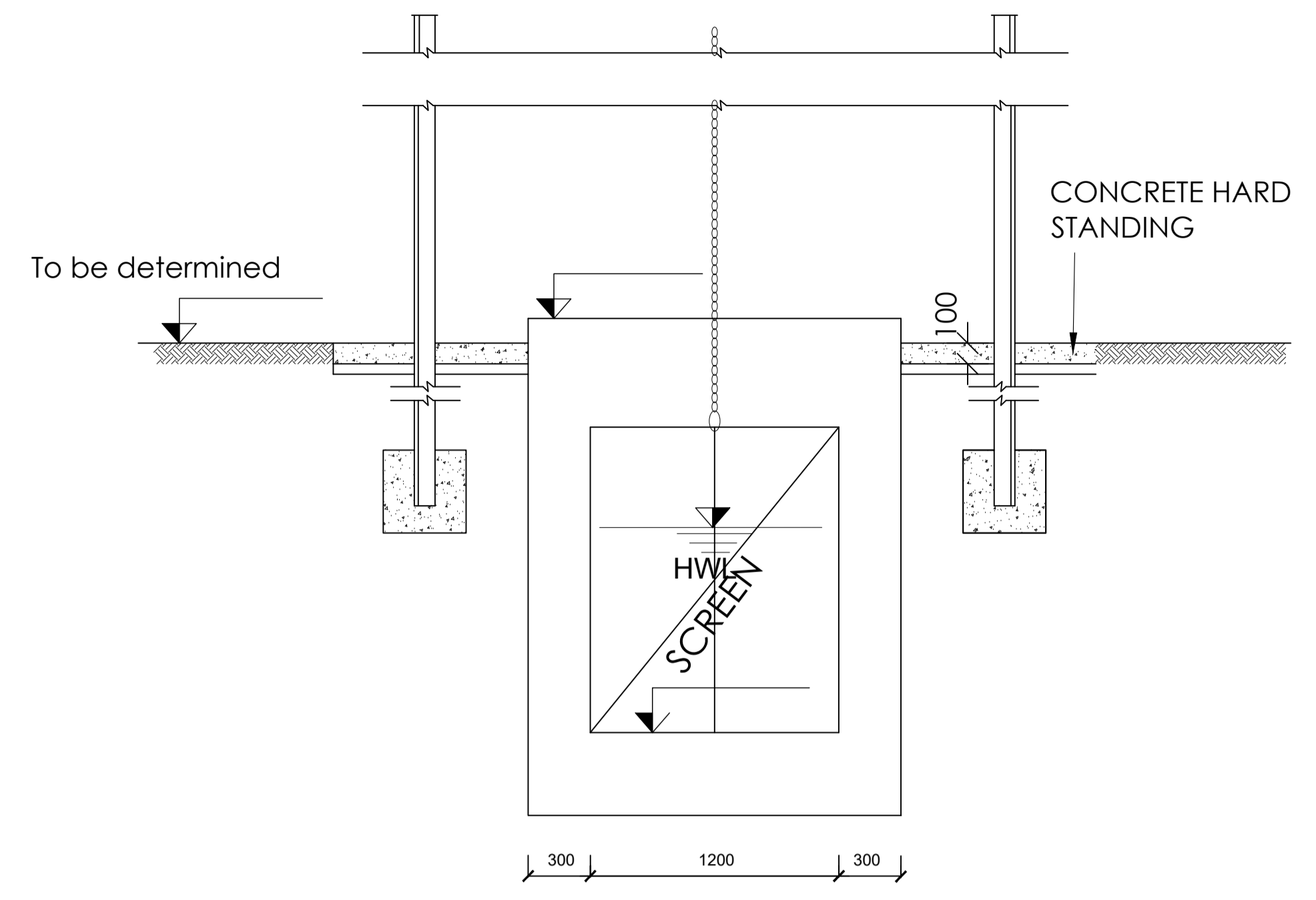
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MWE/BWS/WTW/RCW-02

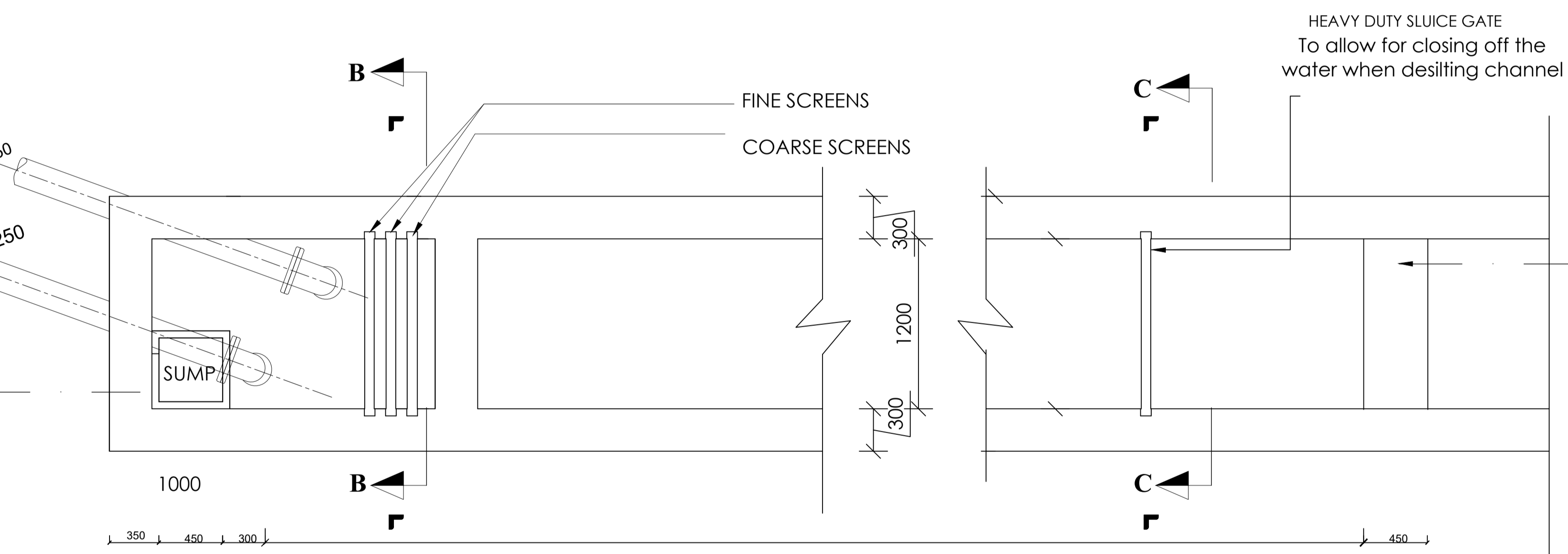
SHEET



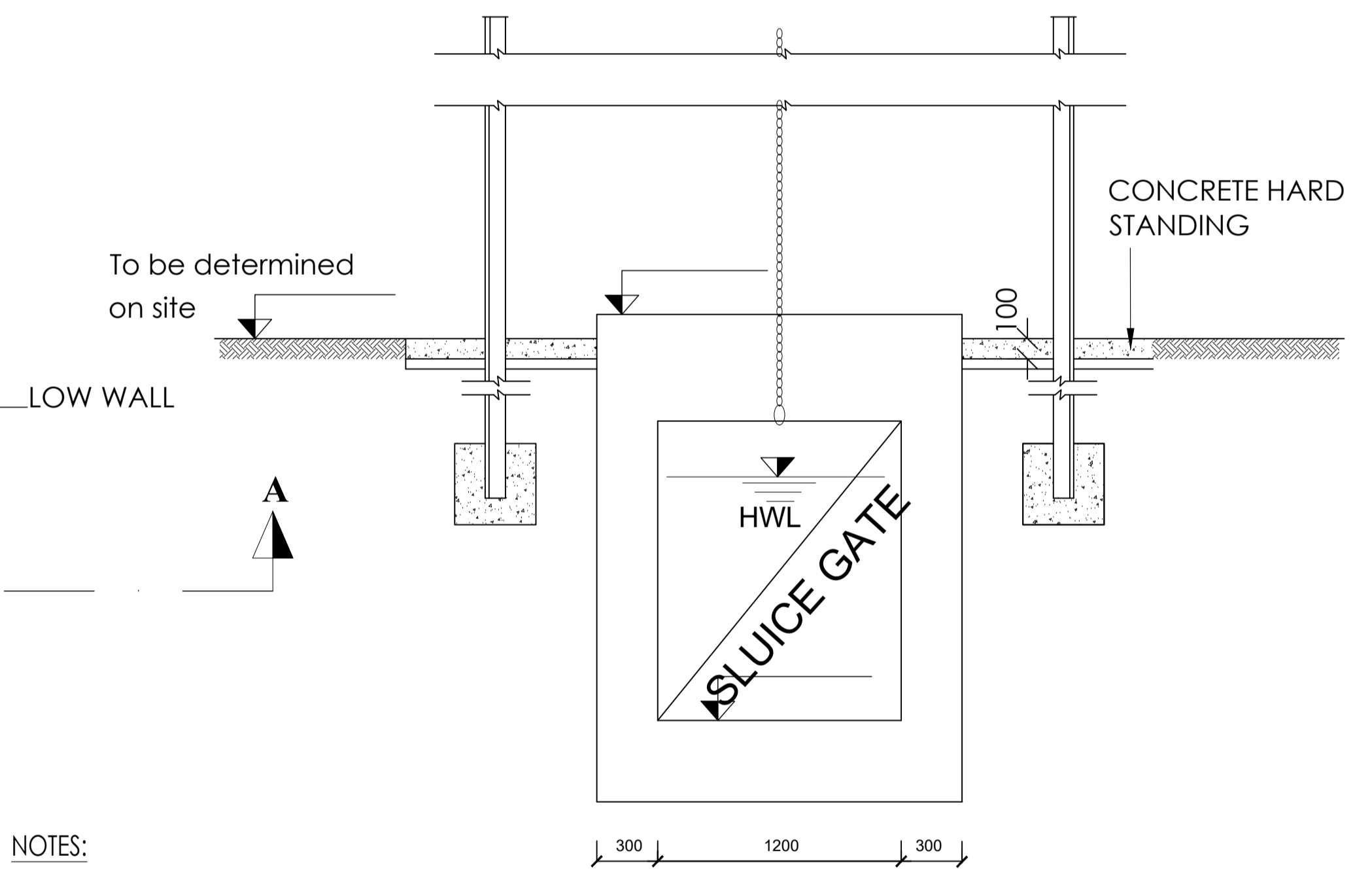
SECTION A - A Scale 1:2.5



SECTION B-B

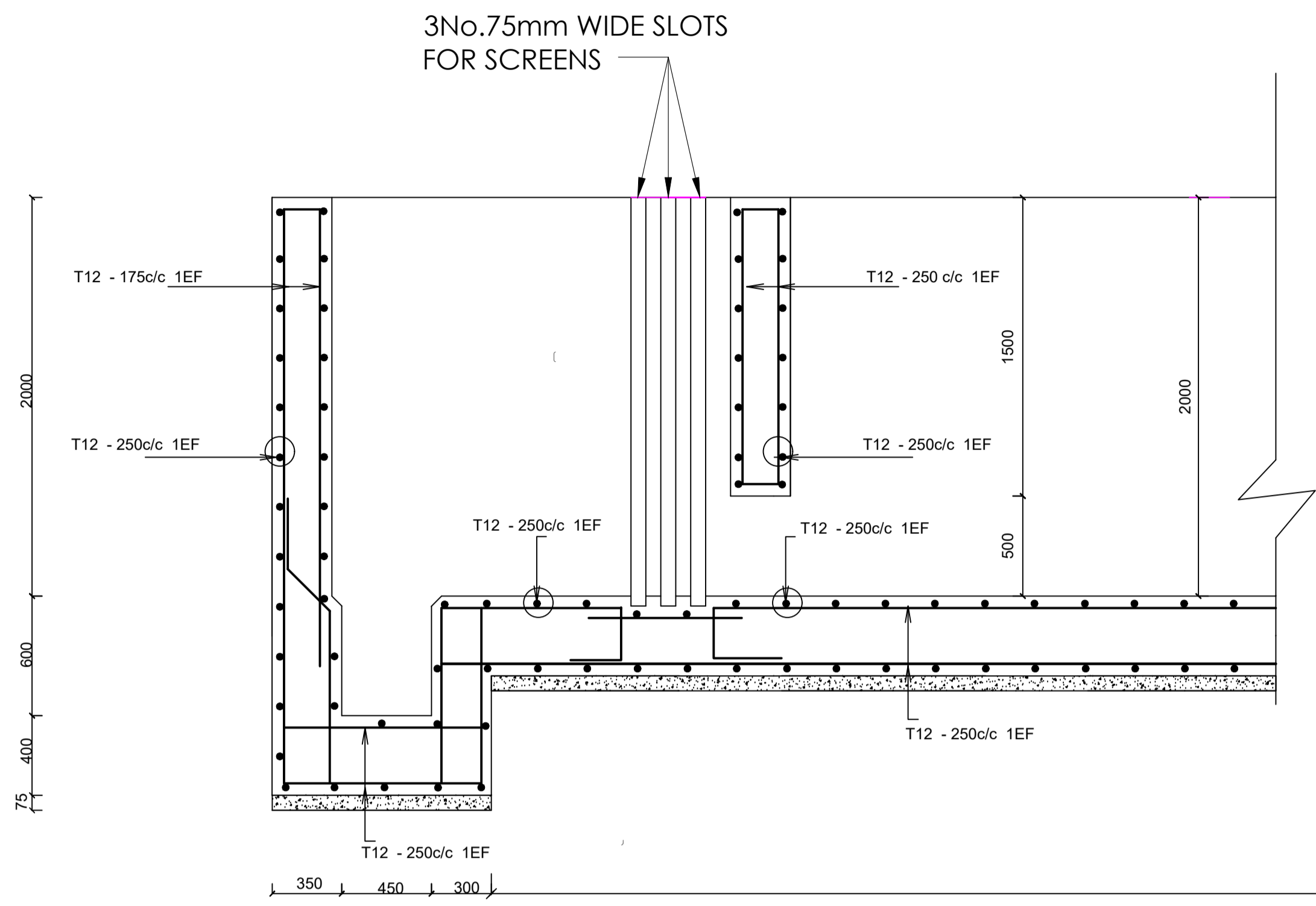


BASE SLAB PLAN Scale 1:2.5

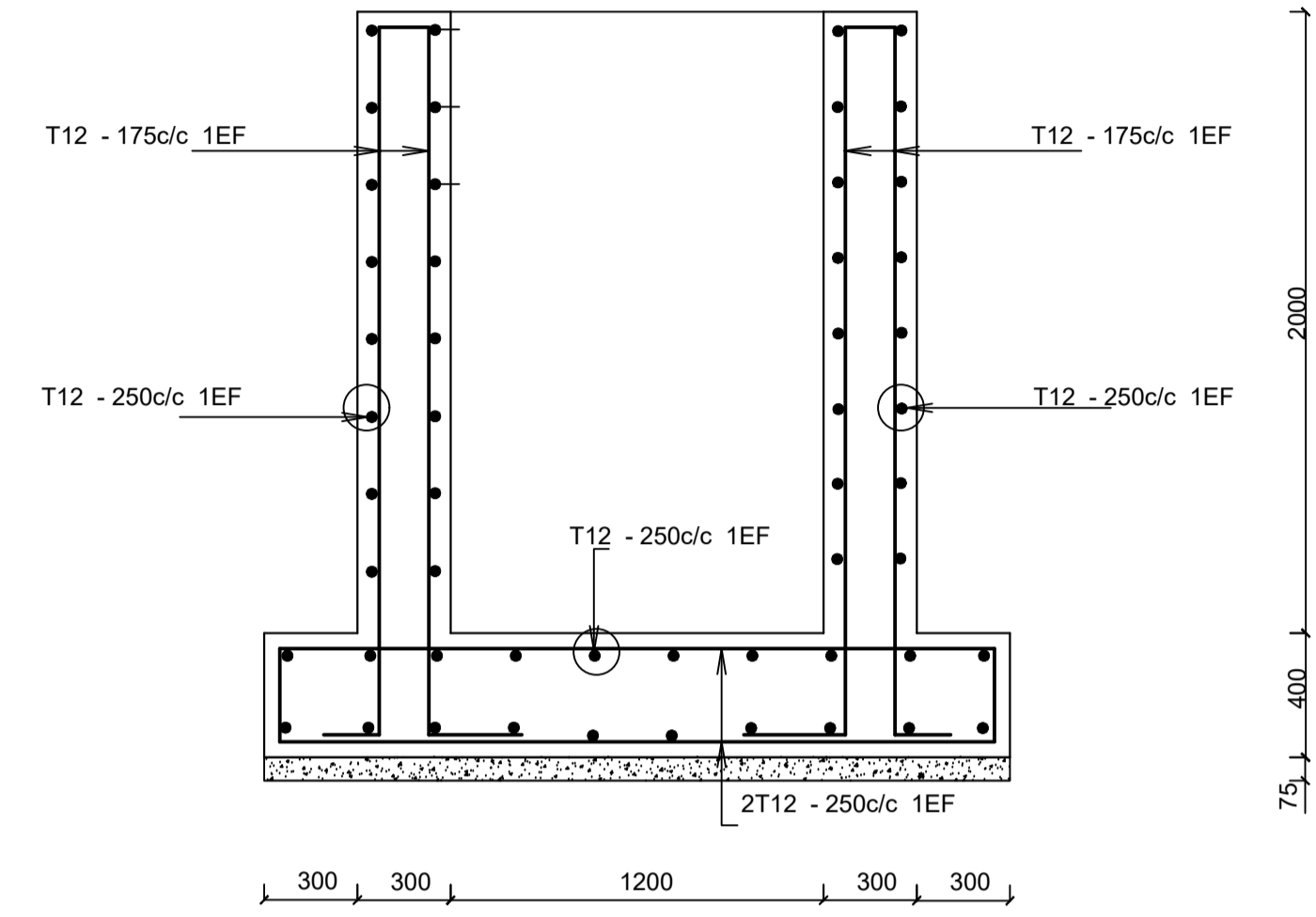
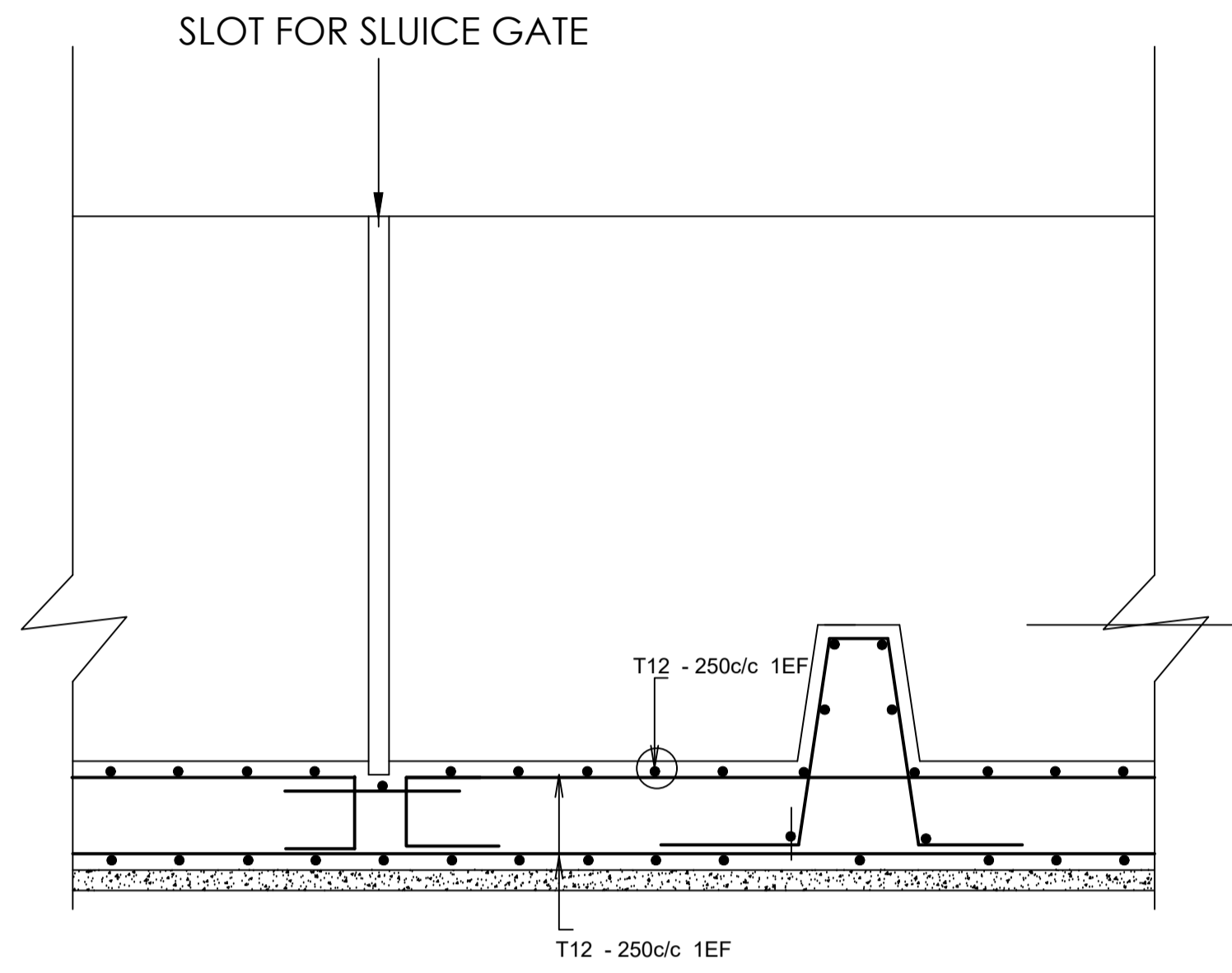


SECTION C-C

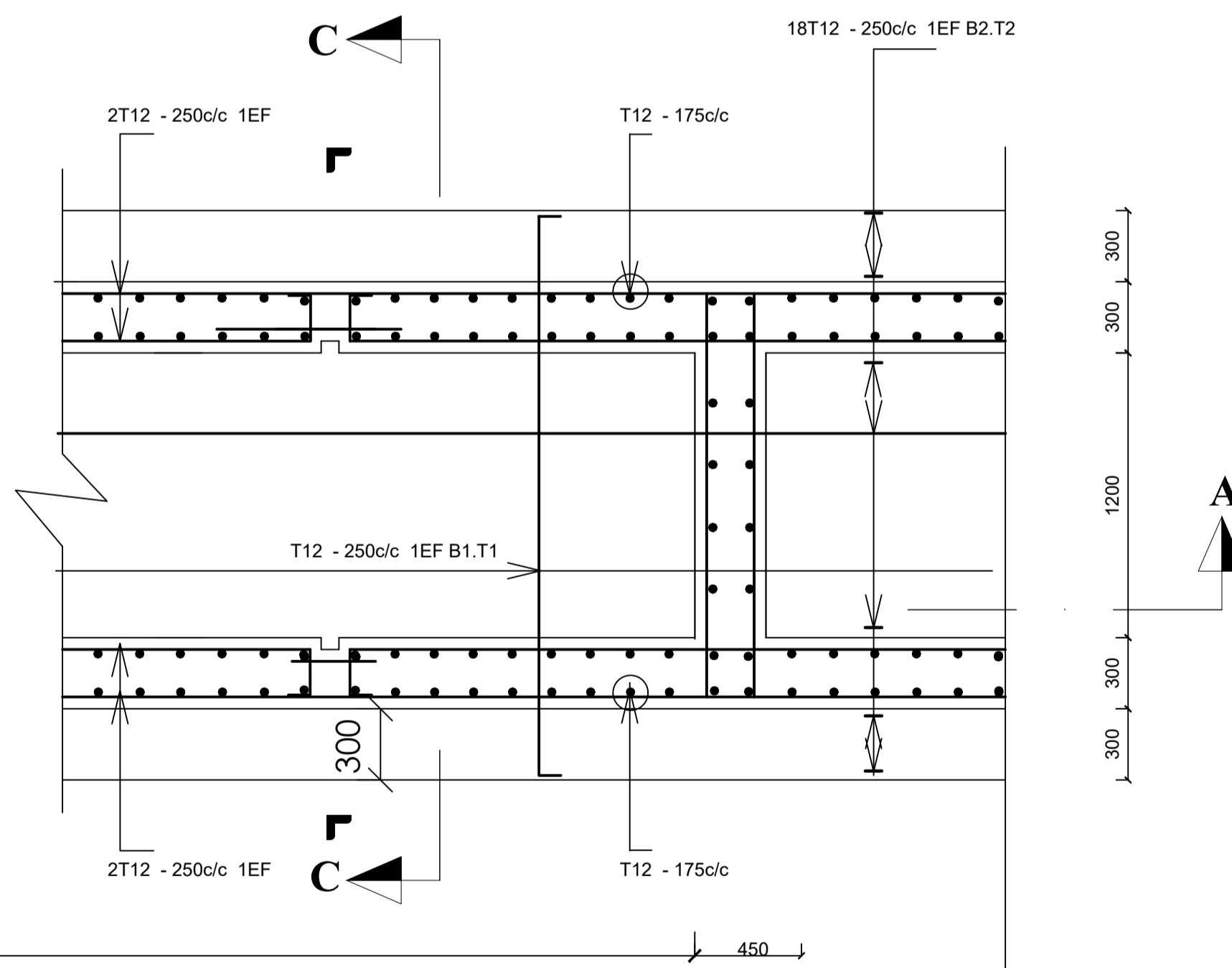
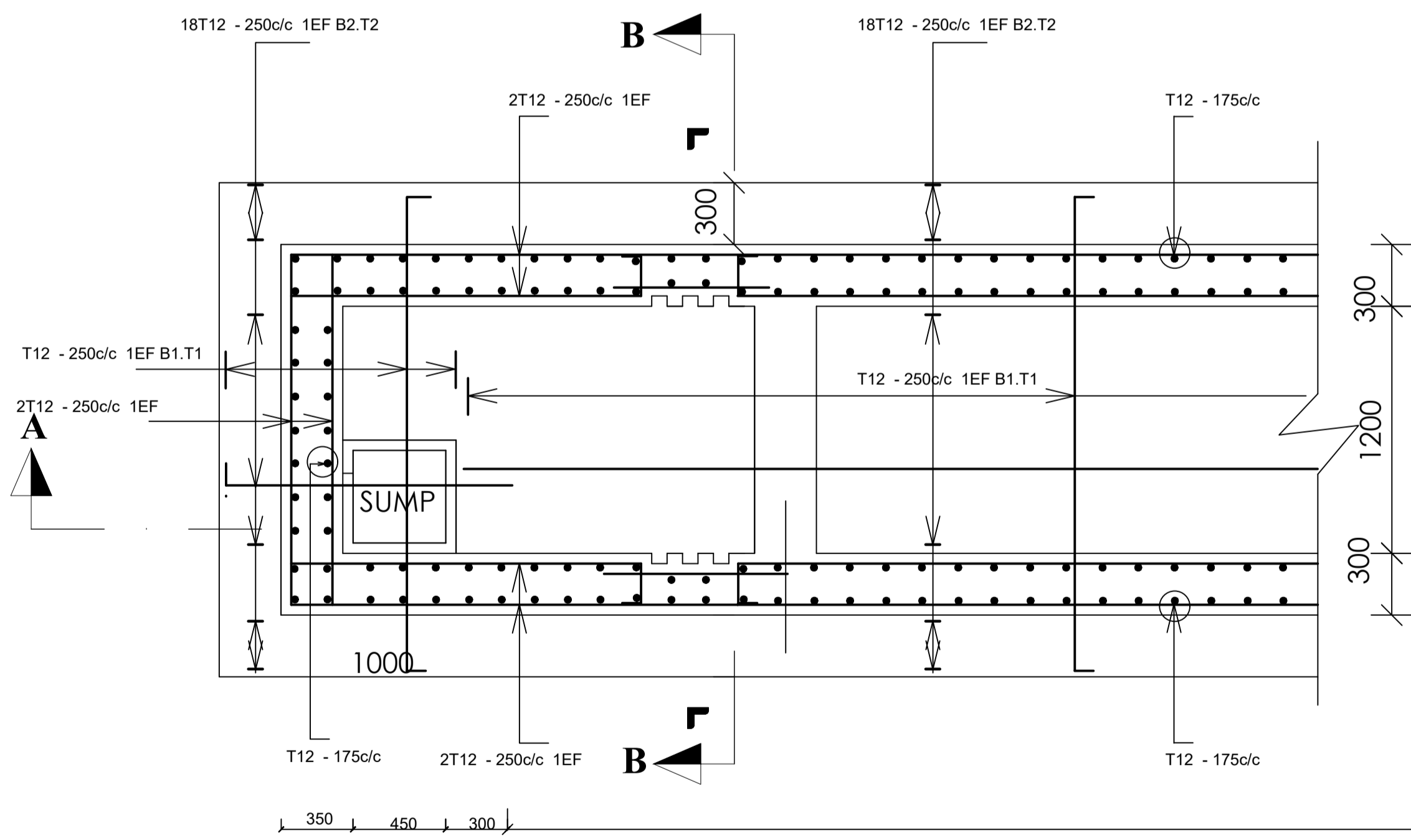
- NOTES:**
- SIZES OF SCREENS TO BE CHECKED ON SITE BEFORE ORDER.
 - ALL DIMENSIONS IN mm.



SECTION A - A Scale 1:50



SECTION B - B Scale 1:50



BASE SLAB R C DETAILS Scale 1:50



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P.O. BOX 6583,
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DWG. TITLE

INTAKE CHANNEL -PLAN AND SECTION

REVISIONS

DATE:

DRAWN BY: A.A
CHECKED BY: GS
APPROVED BY: PJM

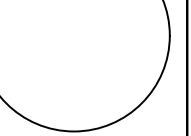
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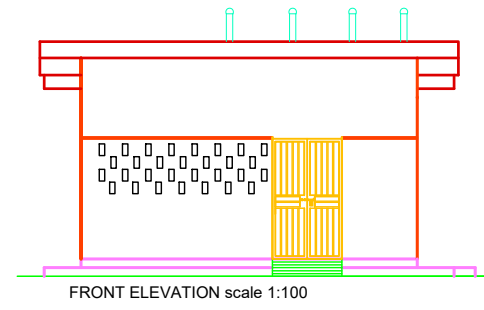
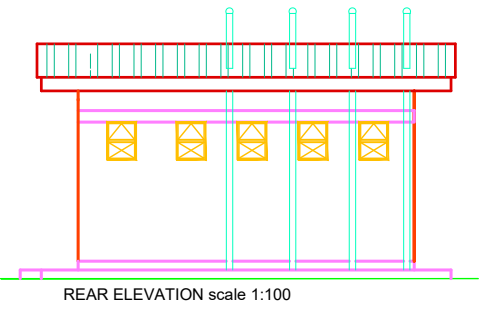
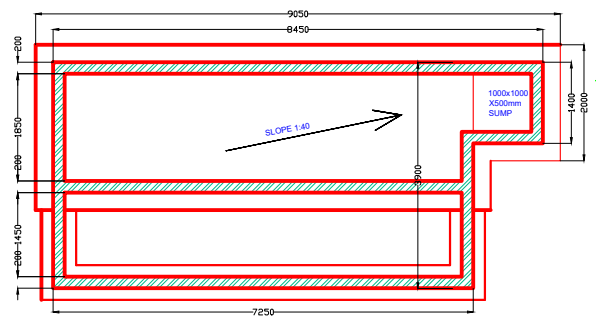
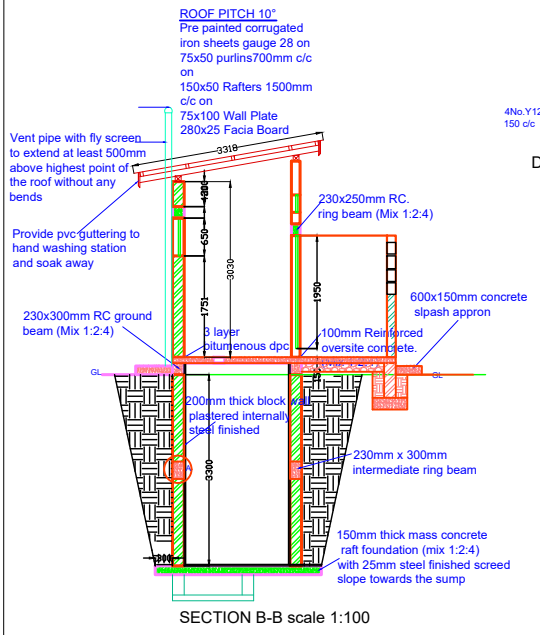
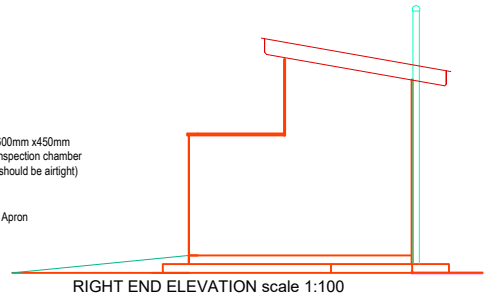
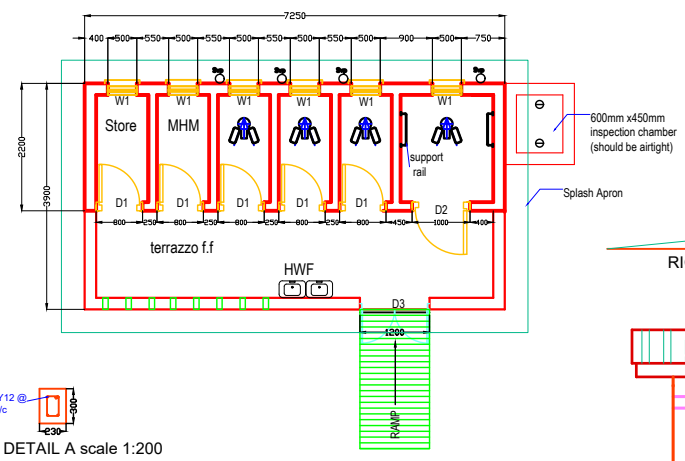
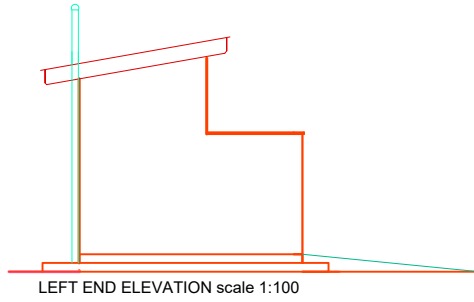
DATUM
Vertical: New Khartoum
Horizontal: UTM ZONE 36N ARC 60

DWG. No.

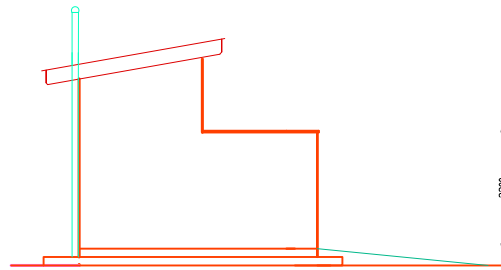
MWE/BWS/WTW/IC-02

SHEET

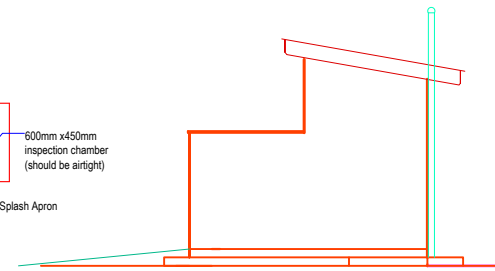
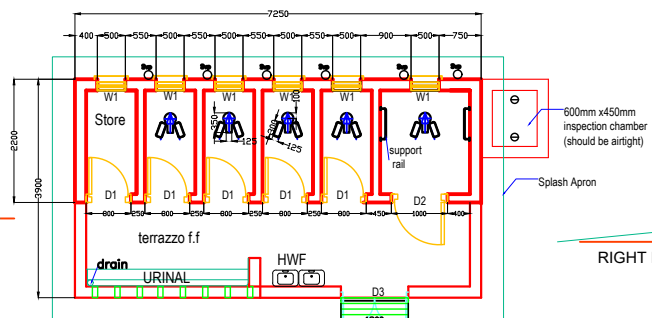




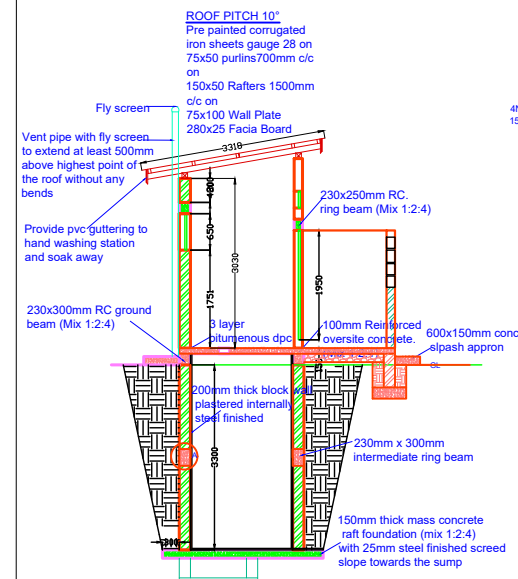
<p>THE REPUBLIC OF UGANDA MINISTRY OF HEALTH</p>	<p>BISTYA WATER SUPPLY AND SANITATION PROJECT</p>	DRAWN BY:	JSS	DRAWING TITLE: LINED VIP LATRINE DETAILS FOR FEMALES	DATE	SCALE: NTS
		CHECKED BY:	PJM	DRAWING NO: WVE/BVS/VIP/01	DATE: JUL. 21	SHEET 1 OF 4



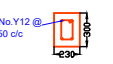
LEFT END ELEVATION scale 1:100



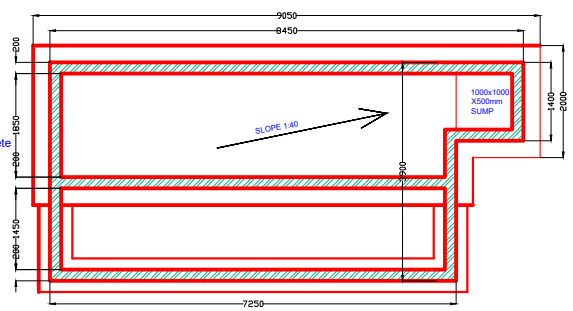
RIGHT END ELEVATION scale 1:100



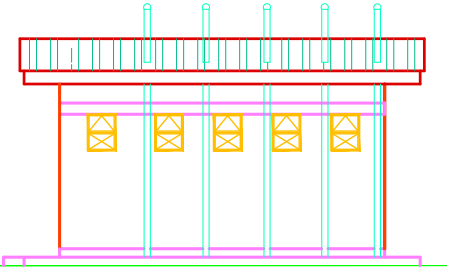
SECTION B-B scale 1:100



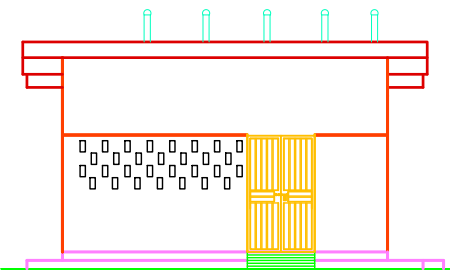
DETAIL A scale 1:200




RAFT AND STRIP FOUNDATION PLAN scale 1:100

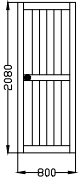
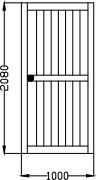

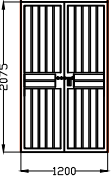


REAR ELEVATION scale 1:100



FRONT ELEVATION scale 1:100

 THE REPUBLIC OF UGANDA MINISTRY OF WATER AND ENVIRONMENT	BISTYA WATER SUPPLY AND SANITATION PROJECT	DRAWN BY: JSS	DRAWING TITLE: LINED VIP LATRINE DETAILS FOR MALES	DATE:	SCALE: NTS
		CHECKED BY: PJM	DRAWING NO: HVE/BWS/VIP/02	DATE:	SHEET 2 OF 4

MARK	ELEVATION	DESCRIPTION	NUMBER REQUIRED
D1		Framed, ledged and braced external door 800 x 2080 x 25mm thick Ironmongery: Butt hinges 100mm 150mm barrel bolts	5
D2		Framed, ledged and braced external door 1000 x 2080 x 25mm thick Ironmongery: Butt hinges 100mm Three lever mortice lock	1
W1		Framed, ledged and braced window 650mm x 500mm Ironmongery: Butt hinges 75mm 150mm barrel bolts	6
D3		1200mm x 2075 x 4mm thick plate metallic door 50 x 50 x 4mm angles Ironmongery: Butt hinges 100mm Pull handles 150mm Approved heavy duty padlocks	1



THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

BISTYA WATER SUPPLY AND SANITATION PROJECT

DRAWN BY: JSS
CHECKED BY: PJM

DRAWING TITLE: WINDOW AND DOOR SCHEDULE FOR THE FEMALES VIP LATRINE
DRAWING NO: MWE/BWS/VIP/03

DATE: JUL. 21

SCALE: NTS
SHEET 3 OF 4