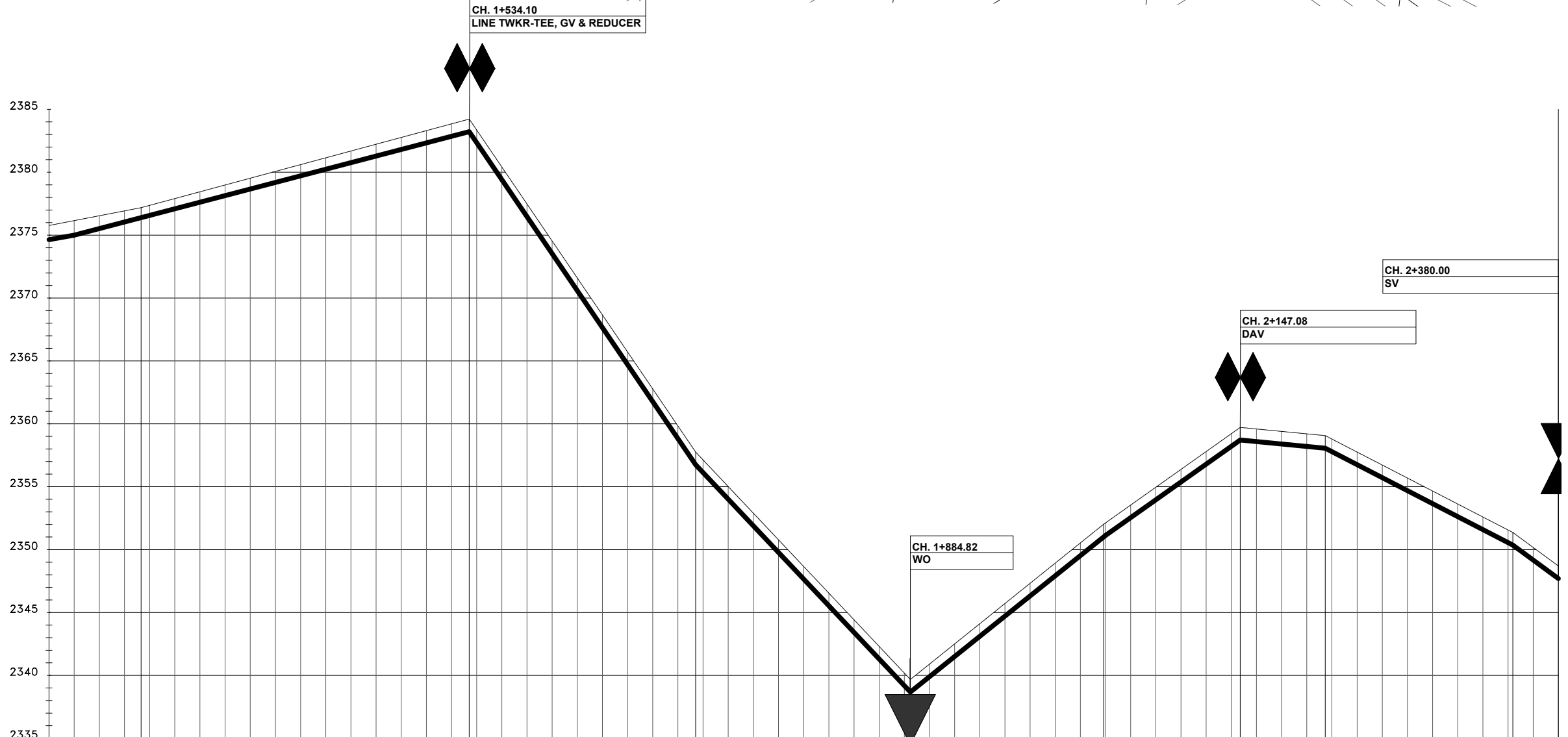
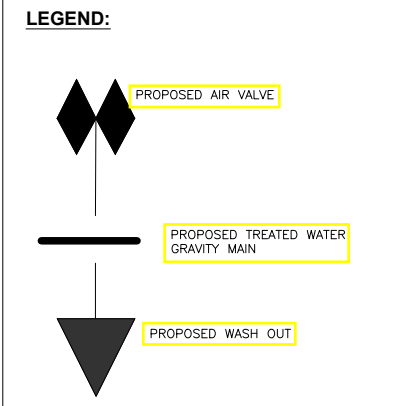


- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
1+220.00	2376.15	2376.52	0.37	2389.55	160MM OD PVC EXISTING PL	RED LOAM	1:56.04
1+240.00	2376.54	2376.52	0.02	2389.55	160MM OD PVC EXISTING PL	RED LOAM	1:38.18
1+260.00	2376.93	2376.05	0.88	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:6.80
1+280.00	2377.37	2376.57	0.80	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:9.44
1+300.00	2377.91	2377.10	0.81	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+320.00	2378.45	2377.62	0.83	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+340.00	2378.99	2378.14	0.84	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+360.00	2379.53	2378.67	0.86	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+380.00	2380.07	2379.19	0.88	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+400.00	2380.61	2379.71	0.89	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+420.00	2381.15	2380.24	0.91	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+440.00	2381.69	2380.76	0.92	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+460.00	2382.23	2381.29	0.94	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+480.00	2382.77	2381.81	0.96	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+500.00	2383.31	2382.33	0.97	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+520.00	2383.85	2382.86	0.99	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+540.00	2384.39	2383.39	1.00	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+560.00	2384.93	2383.92	1.01	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+580.00	2385.47	2384.45	1.02	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+600.00	2386.01	2384.98	1.03	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+620.00	2386.55	2385.51	1.04	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+640.00	2387.09	2386.04	1.05	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+660.00	2387.63	2386.57	1.06	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+680.00	2388.17	2387.10	1.07	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+700.00	2388.71	2387.63	1.08	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+720.00	2389.25	2388.16	1.09	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+740.00	2389.79	2388.69	1.10	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+760.00	2390.33	2389.22	1.11	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+780.00	2390.87	2389.75	1.12	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+800.00	2391.41	2390.28	1.13	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+820.00	2391.95	2390.81	1.14	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+840.00	2392.49	2391.34	1.15	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+860.00	2393.03	2391.87	1.16	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+880.00	2393.57	2392.40	1.17	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+900.00	2394.11	2392.93	1.18	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+920.00	2394.65	2393.46	1.19	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+940.00	2395.19	2393.99	1.20	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+960.00	2395.73	2394.52	1.21	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
1+980.00	2396.27	2395.05	1.22	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+000.00	2396.81	2395.58	1.23	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+020.00	2397.35	2396.11	1.24	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+040.00	2397.89	2396.64	1.25	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+060.00	2398.43	2397.17	1.26	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+080.00	2398.97	2397.70	1.27	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+100.00	2399.51	2398.23	1.28	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+120.00	2400.05	2398.76	1.29	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+140.00	2400.59	2399.29	1.30	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+160.00	2401.13	2399.82	1.31	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+180.00	2401.67	2400.35	1.32	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+200.00	2402.21	2400.88	1.33	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+220.00	2402.75	2401.41	1.34	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+240.00	2403.29	2401.94	1.35	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+260.00	2403.83	2402.47	1.36	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+280.00	2404.37	2403.00	1.37	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+300.00	2404.91	2403.53	1.38	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+320.00	2405.45	2404.06	1.39	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+340.00	2405.99	2404.59	1.40	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+360.00	2406.53	2405.12	1.41	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44
2+380.00	2407.07	2405.65	1.42	2389.55	160MM OD PVC EXISTING PL	RED LOAM	-1:19.44

ISSUED FOR CONSTRUCTION

REVISIONS	SIGN	DATE	APPROVED

EMPLOYER: **THE CHIEF EXECUTIVE OFFICER TANA WATER WORKS DEVELOPMENT AGENCY**
 P.O BOX 1292 - 10100, NYERI, KENYA

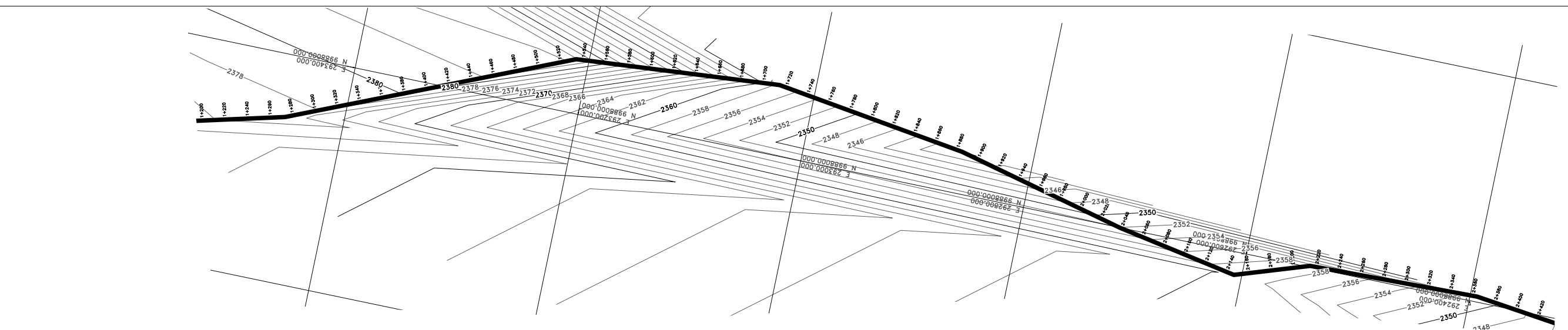
ENGINEER: **THE CHIEF MANAGER TECHNICAL SERVICES TANA WATER WORKS DEVELOPMENT AGENCY**
 P.O BOX 1292 - 10100, NYERI, KENYA

PROJECT TITLE: **REHABILITATION AND EXTENSION OF GURAGU WATER PROJECT**

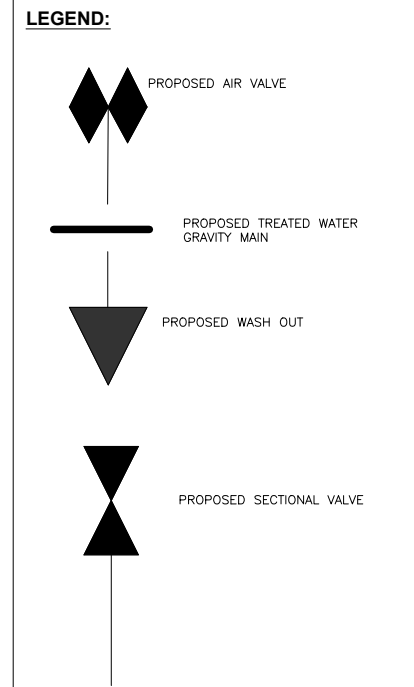
DRAWING TITLE: **TREATED WATER GRAVITY MAIN - PLAN & LONGITUDINAL SECTION**

CH. 0+000.00 - 1+200.00
 SHEET 1 OF 11
 Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H- 1:4000, V- 1:400 Date: MAY 2023
 DRG No. **GUR/RWM/01**

LONGITUDINAL SECTION



- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



ISSUED FOR CONSTRUCTION

REVISIONS	SIGN	DATE	APPROVED
BY	V.K.K.	15/01	
CHECKED			
BY			
CHECKED			
BY			
CHECKED			
BY			
CHECKED			

EMPLOYER:

THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

ENGINEER:

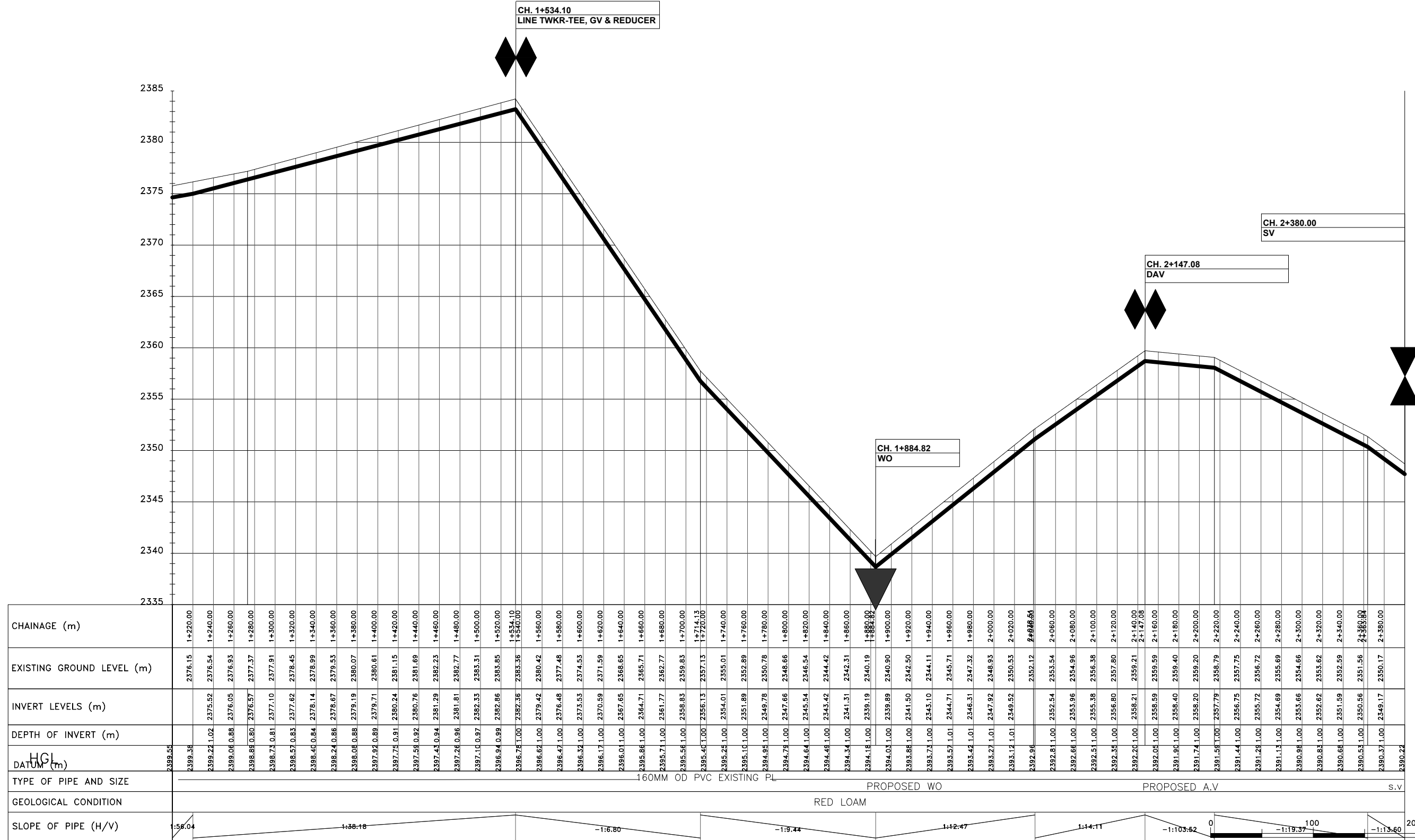
THE CHIEF MANAGER TECHNICAL
SERVICES
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

PROJECT TITLE:
REHABILITATION AND EXTENSION OF
GURAGA WATER PROJECT

DRAWING TITLE:
TREATED WATER GRAVITY MAIN -
PLAN & LONGITUDINAL SECTION

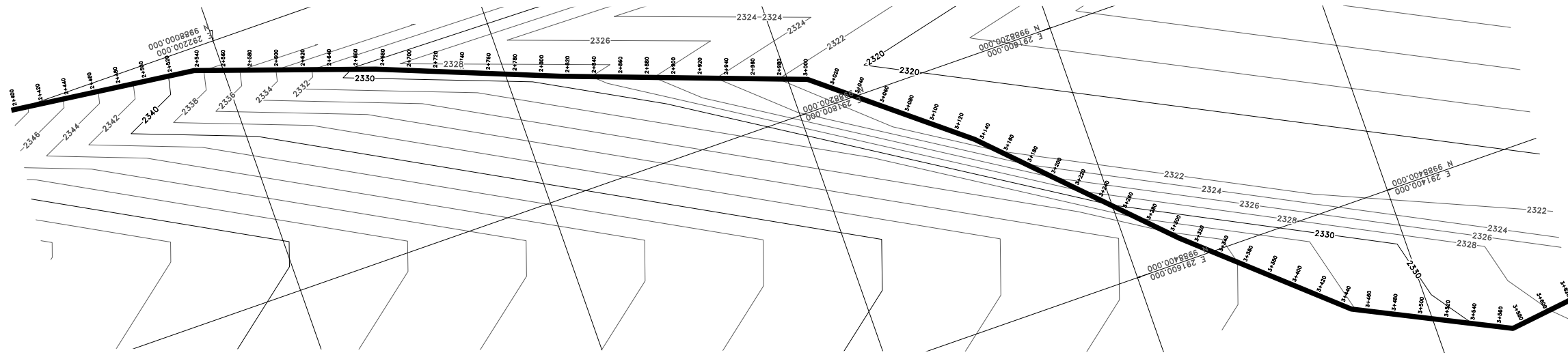
CH. 1+200.00 - 2+400.00
SHEET 2 OF 11

Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H- 1:4000, V- 1:400 Date: MAY 2023
 DRG No. **GUR/RWM/01**



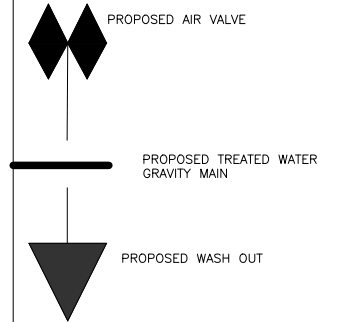
CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
1+220.00	2376.15	2399.36	0.81	2399.55	160MM OD PVC EXISTING PL		1:56.04
1+240.00	2376.54	2399.22	0.82	2399.36	160MM OD PVC EXISTING PL		1:58.18
1+260.00	2376.93	2399.06	0.83	2399.06	160MM OD PVC EXISTING PL		-1:6.80
1+280.00	2377.37	2398.88	0.80	2398.88	160MM OD PVC EXISTING PL		-1:9.44
1+300.00	2377.91	2398.73	0.81	2398.73	160MM OD PVC EXISTING PL		1:12.47
1+320.00	2378.45	2398.57	0.83	2398.57	160MM OD PVC EXISTING PL		1:14.11
1+340.00	2378.99	2398.40	0.84	2398.40	160MM OD PVC EXISTING PL		-1:103.62
1+360.00	2379.53	2398.24	0.86	2398.24	160MM OD PVC EXISTING PL		0
1+380.00	2380.07	2398.08	0.88	2398.08	160MM OD PVC EXISTING PL		-1:19.37
1+400.00	2380.61	2397.92	0.89	2397.92	160MM OD PVC EXISTING PL		100
1+420.00	2381.15	2397.75	0.81	2397.75	160MM OD PVC EXISTING PL		-1:13.60
1+440.00	2381.69	2397.58	0.92	2397.58	160MM OD PVC EXISTING PL		
1+460.00	2382.23	2397.43	0.94	2397.43	160MM OD PVC EXISTING PL		
1+480.00	2382.77	2397.26	0.96	2397.26	160MM OD PVC EXISTING PL		
1+500.00	2383.31	2397.10	0.97	2397.10	160MM OD PVC EXISTING PL		
1+520.00	2383.85	2396.94	0.99	2396.94	160MM OD PVC EXISTING PL		
1+540.00	2384.39	2396.78	1.00	2396.78	160MM OD PVC EXISTING PL		
1+560.00	2384.92	2396.62	1.00	2396.62	160MM OD PVC EXISTING PL		
1+580.00	2385.46	2396.47	1.00	2396.47	160MM OD PVC EXISTING PL		
1+600.00	2386.00	2396.32	1.00	2396.32	160MM OD PVC EXISTING PL		
1+620.00	2386.54	2396.17	1.00	2396.17	160MM OD PVC EXISTING PL		
1+640.00	2387.08	2396.01	1.00	2396.01	160MM OD PVC EXISTING PL		
1+660.00	2387.62	2395.86	1.00	2395.86	160MM OD PVC EXISTING PL		
1+680.00	2388.16	2395.71	1.00	2395.71	160MM OD PVC EXISTING PL		
1+700.00	2388.70	2395.56	1.00	2395.56	160MM OD PVC EXISTING PL		
1+720.00	2389.24	2395.40	1.00	2395.40	160MM OD PVC EXISTING PL		
1+740.00	2389.78	2395.25	1.00	2395.25	160MM OD PVC EXISTING PL		
1+760.00	2390.32	2395.10	1.00	2395.10	160MM OD PVC EXISTING PL		
1+780.00	2390.86	2394.95	1.00	2394.95	160MM OD PVC EXISTING PL		
1+800.00	2391.40	2394.79	1.00	2394.79	160MM OD PVC EXISTING PL		
1+820.00	2391.94	2394.64	1.00	2394.64	160MM OD PVC EXISTING PL		
1+840.00	2392.48	2394.48	1.00	2394.48	160MM OD PVC EXISTING PL		
1+860.00	2393.02	2394.33	1.00	2394.33	160MM OD PVC EXISTING PL		
1+880.00	2393.56	2394.17	1.00	2394.17	160MM OD PVC EXISTING PL		
1+900.00	2394.10	2394.02	1.00	2394.02	160MM OD PVC EXISTING PL		
1+920.00	2394.64	2393.86	1.00	2393.86	160MM OD PVC EXISTING PL		
1+940.00	2395.18	2393.70	1.00	2393.70	160MM OD PVC EXISTING PL		
1+960.00	2395.72	2393.54	1.00	2393.54	160MM OD PVC EXISTING PL		
1+980.00	2396.26	2393.38	1.00	2393.38	160MM OD PVC EXISTING PL		
2+000.00	2396.80	2393.22	1.00	2393.22	160MM OD PVC EXISTING PL		
2+020.00	2397.34	2393.06	1.00	2393.06	160MM OD PVC EXISTING PL		
2+040.00	2397.88	2392.90	1.00	2392.90	160MM OD PVC EXISTING PL		
2+060.00	2398.42	2392.74	1.00	2392.74	160MM OD PVC EXISTING PL		
2+080.00	2398.96	2392.58	1.00	2392.58	160MM OD PVC EXISTING PL		
2+100.00	2399.50	2392.42	1.00	2392.42	160MM OD PVC EXISTING PL		
2+120.00	2400.04	2392.26	1.00	2392.26	160MM OD PVC EXISTING PL		
2+140.00	2400.58	2392.10	1.00	2392.10	160MM OD PVC EXISTING PL		
2+160.00	2401.12	2391.94	1.00	2391.94	160MM OD PVC EXISTING PL		
2+180.00	2401.66	2391.78	1.00	2391.78	160MM OD PVC EXISTING PL		
2+200.00	2402.20	2391.62	1.00	2391.62	160MM OD PVC EXISTING PL		
2+220.00	2402.74	2391.46	1.00	2391.46	160MM OD PVC EXISTING PL		
2+240.00	2403.28	2391.30	1.00	2391.30	160MM OD PVC EXISTING PL		
2+260.00	2403.82	2391.14	1.00	2391.14	160MM OD PVC EXISTING PL		
2+280.00	2404.36	2390.98	1.00	2390.98	160MM OD PVC EXISTING PL		
2+300.00	2404.90	2390.82	1.00	2390.82	160MM OD PVC EXISTING PL		
2+320.00	2405.44	2390.66	1.00	2390.66	160MM OD PVC EXISTING PL		
2+340.00	2405.98	2390.50	1.00	2390.50	160MM OD PVC EXISTING PL		
2+360.00	2406.52	2390.34	1.00	2390.34	160MM OD PVC EXISTING PL		
2+380.00	2407.06	2390.18	1.00	2390.18	160MM OD PVC EXISTING PL		
2+390.00	2407.60	2390.02	1.00	2390.02	160MM OD PVC EXISTING PL		

LONGITUDINAL SECTION



- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

LEGEND:



ISSUED FOR CONSTRUCTION

REVISIONS				
NO.	DESCRIPTION	BY	CHKD	DATE
1	CHECKED	V.K.		15/01
2	CHECKED			
3	CHECKED			
4	CHECKED			
5	CHECKED			

EMPLOYER:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

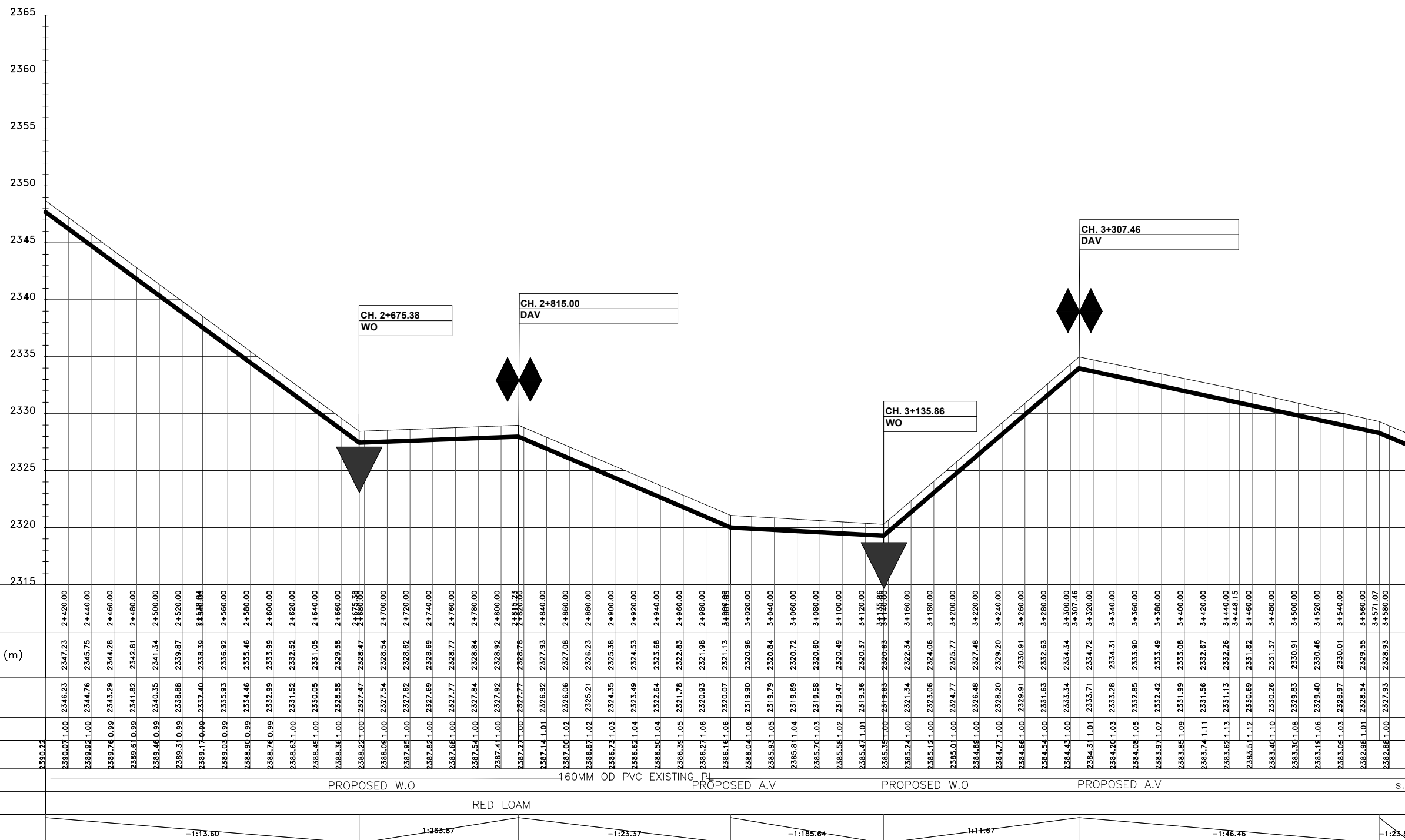
ENGINEER:
THE CHIEF MANAGER TECHNICAL
SERVICES
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

PROJECT TITLE:
REHABILITATION AND EXTENSION OF
GURAGA WATER PROJECT

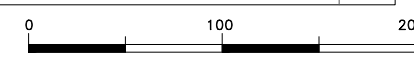
DRAWING TITLE:
RAW WATER GRAVITY MAIN - PLAN
& LONGITUDINAL SECTION

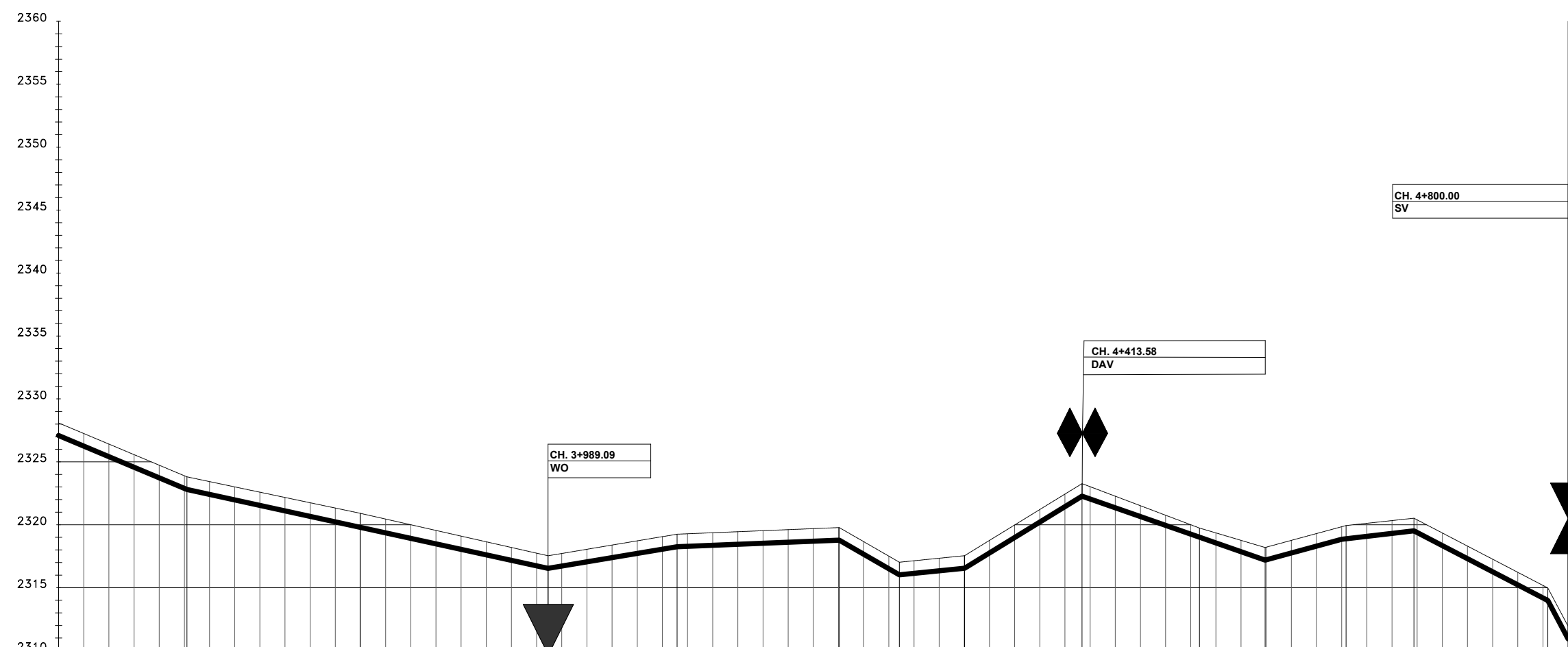
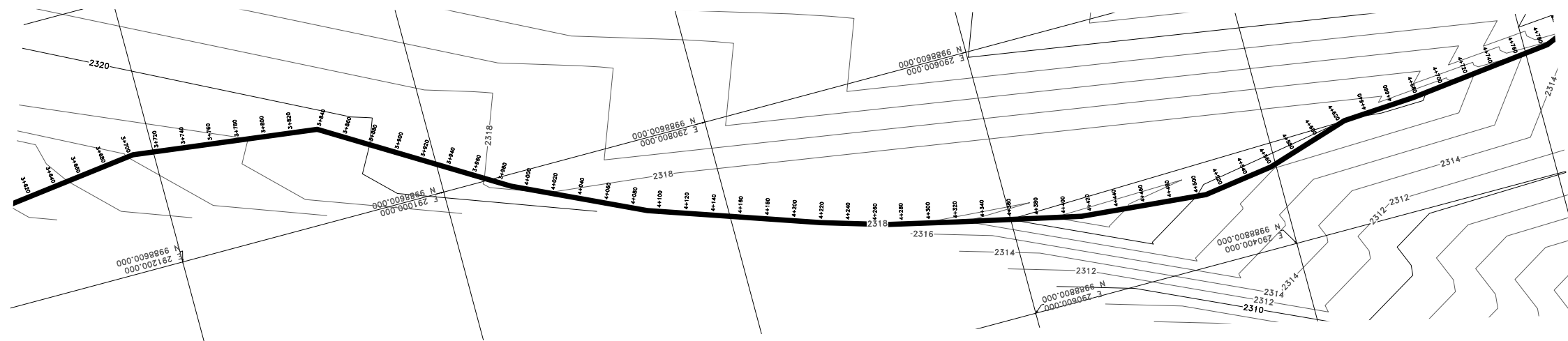
CH. 2+400.00 - 3+600.00
SHEET 3 OF 11

Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H- 1:4000, V- 1:400 Date: MAY 2023
 DRG No. **GUR/RWM/03**



LONGITUDINAL SECTION

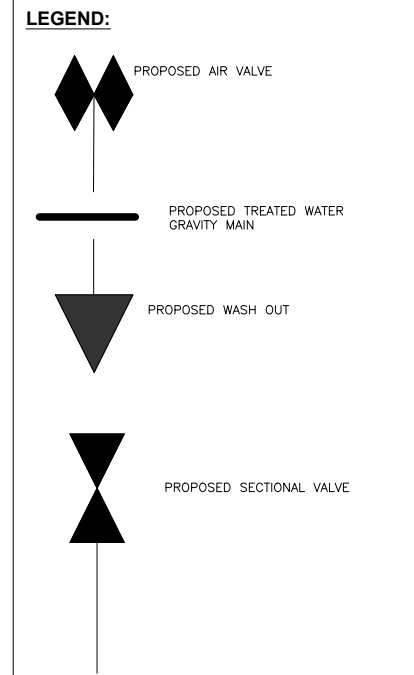




CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	HGL DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
3+620.00	2327.25	2326.25	1.00	2382.77	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+640.00	2326.41	2325.41	1.00	2382.67	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+660.00	2325.57	2324.57	1.00	2382.56	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+680.00	2324.73	2323.73	1.00	2382.45	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+700.00	2323.89	2322.89	1.00	2382.35	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+720.00	2323.43	2322.42	1.01	2382.24	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+740.00	2323.01	2321.98	1.03	2382.14	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+760.00	2322.59	2321.54	1.05	2382.03	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+780.00	2322.17	2321.11	1.06	2381.93	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+800.00	2321.75	2320.67	1.08	2381.82	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+820.00	2321.33	2320.23	1.10	2381.74	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+840.00	2320.91	2319.79	1.11	2381.61	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+860.00	2320.46	2319.36	1.10	2381.51	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+880.00	2320.00	2318.92	1.08	2381.40	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+900.00	2319.55	2318.48	1.07	2381.28	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+920.00	2319.10	2318.05	1.05	2381.15	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+940.00	2318.65	2317.61	1.04	2381.05	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+960.00	2318.19	2317.17	1.02	2380.98	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
3+980.00	2317.74	2316.74	1.01	2380.87	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+000.00	2317.72	2316.72	1.00	2380.77	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+020.00	2318.05	2317.05	1.00	2380.66	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+040.00	2318.39	2317.39	1.00	2380.56	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+060.00	2318.72	2317.72	1.00	2380.45	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+080.00	2319.06	2318.06	1.00	2380.35	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+091.66	2319.06	2318.06	1.00	2380.24	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+100.00	2319.29	2318.29	1.00	2380.14	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+120.00	2319.37	2318.37	1.00	2380.03	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+140.00	2319.45	2318.45	1.00	2379.92	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+160.00	2319.53	2318.53	1.00	2379.81	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+180.00	2319.61	2318.61	1.00	2379.71	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+200.00	2319.69	2318.69	1.00	2379.61	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+220.66	2319.78	2318.78	1.00	2379.50	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+240.00	2318.66	2317.66	1.00	2379.40	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+260.00	2317.51	2316.51	1.00	2379.29	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+280.00	2317.14	2316.14	1.00	2379.18	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+300.00	2317.34	2316.34	1.00	2379.08	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+320.00	2317.54	2316.54	1.00	2378.98	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+340.00	2318.76	2317.76	1.00	2378.87	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+360.00	2319.98	2318.98	1.00	2378.77	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+380.00	2321.21	2320.21	1.00	2378.66	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+400.00	2322.44	2321.44	1.00	2378.55	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+413.58	2323.03	2322.05	0.98	2378.44	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+420.00	2323.03	2322.05	0.98	2378.34	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+440.00	2322.27	2321.35	0.92	2378.23	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+460.00	2321.51	2320.65	0.86	2378.12	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+480.00	2320.76	2319.85	0.80	2378.01	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+500.00	2320.00	2319.26	0.75	2377.90	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+520.00	2319.35	2318.56	0.79	2377.79	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+540.00	2318.76	2317.86	0.90	2377.68	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+560.00	2318.22	2317.22	1.00	2377.57	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+580.00	2318.76	2317.76	1.00	2377.46	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+600.00	2319.30	2318.30	1.00	2377.35	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+620.00	2319.84	2318.84	1.00	2377.24	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+640.00	2320.12	2319.08	1.04	2377.13	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+660.00	2320.33	2319.32	1.02	2377.02	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+680.00	2320.38	2319.39	1.00	2376.91	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+700.00	2319.35	2318.35	1.00	2376.80	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+720.00	2318.31	2317.31	1.00	2376.69	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+740.00	2317.26	2316.26	1.00	2376.58	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+760.00	2316.22	2315.22	1.00	2376.47	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+780.00	2315.18	2314.18	1.00	2376.36	100 MM OD PVC EXISTING PL	RED LOAM	-1:100
4+780.00	2315.18	2314.18	1.00	2376.25	100 MM OD PVC EXISTING PL	RED LOAM	-1:100

LONGITUDINAL SECTION

- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



ISSUED FOR CONSTRUCTION

REVISIONS		SIGN	DATE	APPROVED
BY	VJK		15/01	
CHECKED				
BY				
CHECKED				
BY				
CHECKED				

EMPLOYER:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

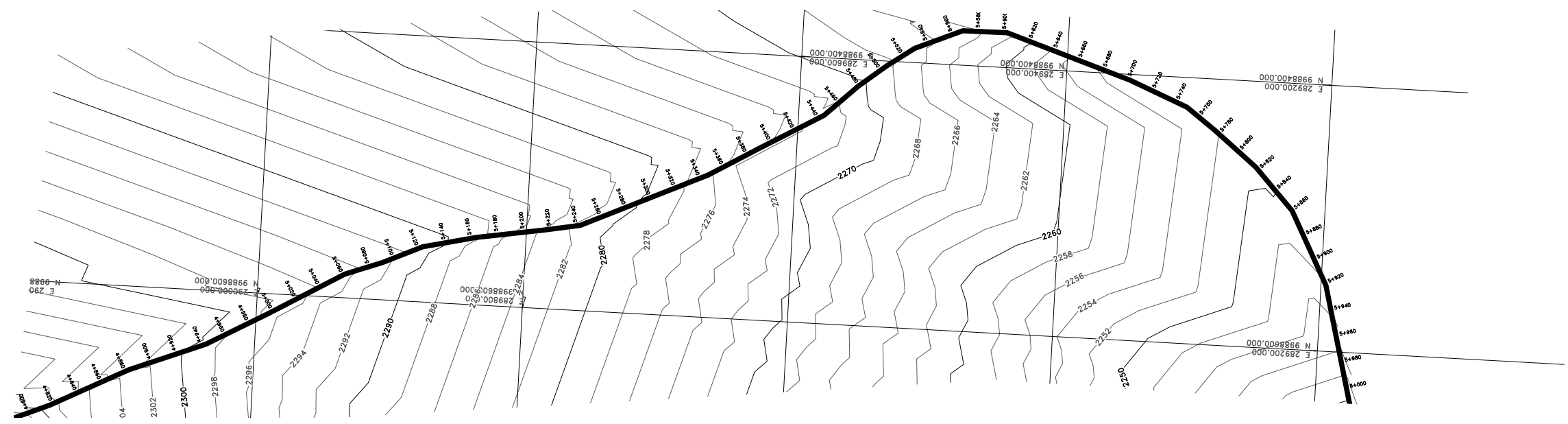
ENGINEER:
THE CHIEF MANAGER TECHNICAL
SERVICES
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

PROJECT TITLE:
REHABILITATION AND EXTENSION OF
GURAGA WATER PROJECT

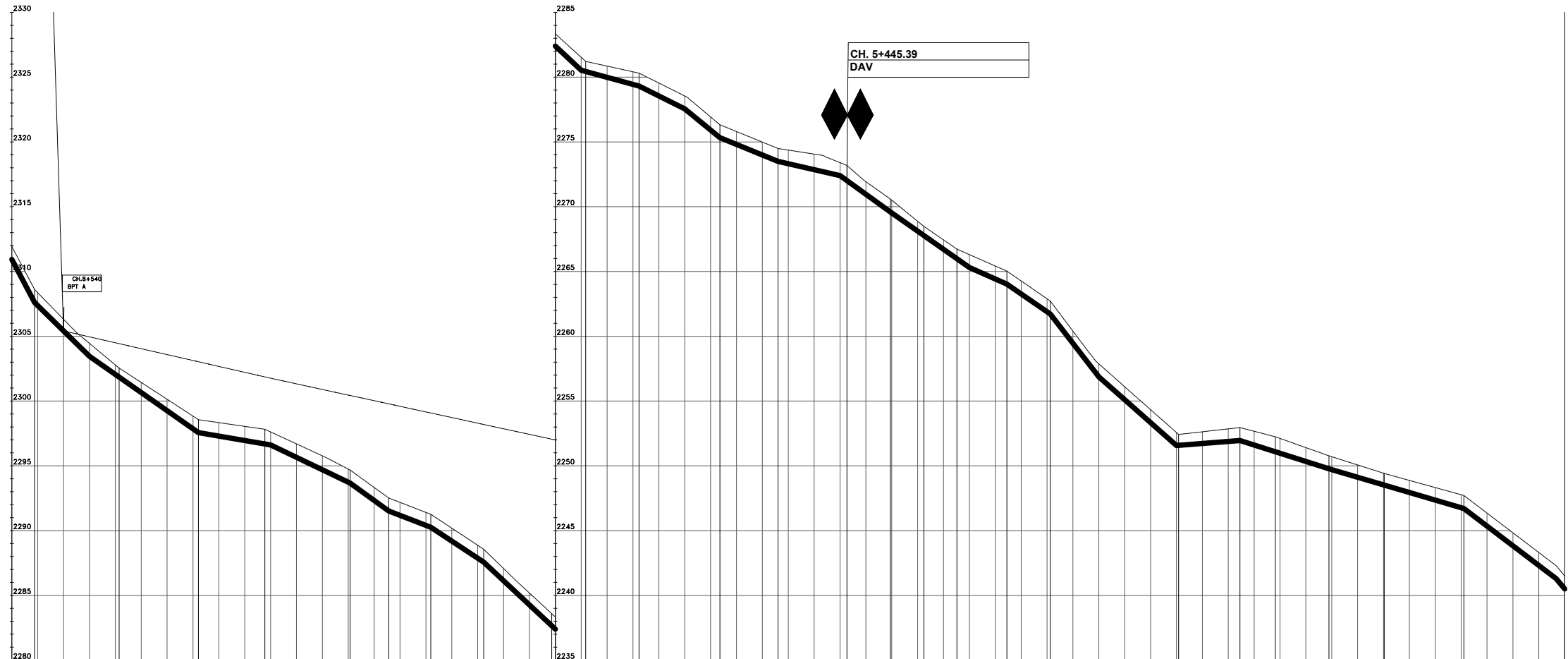
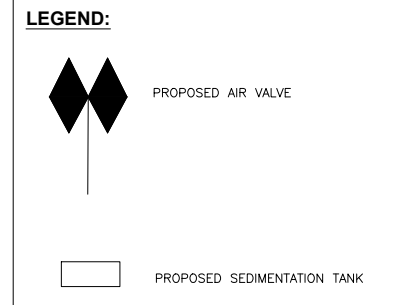
DRAWING TITLE:
RAW WATER GRAVITY MAIN - PLAN
& LONGITUDINAL SECTION

CH. 3+600.00 - 4+800.00
SHEET 4 OF 11

Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H- 1:4000, V- 1:400 Date: MAY 2023
 DRG No. **GUR/RWM/04**



- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	DATUM HGL (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
4+820.00	2308.56	2307.37	0.99	2309.07	110MM OD PVC PL EXISTING A.V	RED LOAM	-1:5.30
4+840.00	2306.31	2305.41	1.00	2305.41			-1:10.21
4+860.00	2304.45	2304.95	0.88	2304.95			-1:14.50
4+880.00	2302.79	2302.05	1.03	2304.50			-1:15.87
4+900.00	2301.44	2300.65	1.04	2304.04			-1:20.88
4+920.00	2299.26	2299.26	0.88	2303.58			-1:13.82
4+940.00	2298.84	2297.86	0.98	2303.13			-1:25.86
4+960.00	2298.33	2297.29	1.04	2302.67			-1:15.16
4+980.00	2298.04	2296.95	1.09	2302.22			-1:10.72
5+000.00	2297.61	2297.61	0.87	2301.76			-1:36.62
5+020.00	2296.69	2296.69	1.03	2301.33			-1:20.05
5+040.00	2295.77	2294.70	1.07	2300.88			-1:12.23
5+060.00	2294.75	2293.74	1.01	2300.46			-1:24.53
5+080.00	2293.33	2292.33	1.00	2300.03			-1:43.77
5+100.00	2292.18	2291.18	1.00	2299.58			-1:13.86
5+120.00	2291.40	2290.40	1.00	2299.16			-1:14.24
5+140.00	2290.19	2289.19	1.00	2298.73			-1:22.72
5+160.00	2288.87	2287.87	1.00	2298.29			-1:14.52
5+180.00	2287.07	2286.13	0.94	2297.86			-1:7.74
5+200.00	2285.18	2284.26	0.92	2297.43			-1:11.81
5+220.00	2283.34	2282.40	0.94	2296.99			1:127.23
5+240.00	2281.53	2280.59	0.94	2296.56			-1:31.55
5+260.00	2280.85	2279.98	0.87	2296.13			-1:34.16
5+280.00	2280.41	2279.44	0.97	2295.68			-1:13.16
5+300.00	2279.54	2278.54	1.00	2295.57			-1:8.30
5+320.00	2278.55	2277.55	1.00	2295.28			
5+340.00	2276.93	2275.91	1.02	2295.01			
5+360.00	2275.80	2274.80	1.00	2294.73			
5+380.00	2274.99	2273.99	1.00	2294.45			
5+400.00	2274.37	2273.31	1.06	2294.17			
5+420.00	2274.06	2272.86	1.20	2293.88			
5+440.00	2273.40	2272.61	0.79	2293.61			
5+460.00	2271.93	2270.96	0.98	2293.33			
5+480.00	2270.50	2269.51	0.99	2293.05			
5+500.00	2268.87	2268.11	0.76	2292.76			
5+520.00	2267.44	2266.71	0.73	2292.48			
5+540.00	2266.30	2265.30	1.00	2292.36			
5+560.00	2265.42	2264.42	1.00	2292.28			
5+580.00	2264.27	2263.27	1.00	2292.18			
5+600.00	2262.89	2261.89	1.00	2292.08			
5+620.00	2260.40	2259.45	0.94	2291.98			
5+640.00	2257.87	2257.87	0.00	2291.88			
5+660.00	2256.10	2255.10	1.00	2291.78			
5+680.00	2254.33	2253.33	1.00	2291.68			
5+700.00	2252.57	2251.57	1.00	2291.58			
5+720.00	2252.63	2251.72	0.91	2291.48			
5+740.00	2252.85	2251.88	0.97	2291.38			
5+760.00	2252.67	2251.60	1.07	2291.28			
5+780.00	2252.11	2251.14	0.97	2291.17			
5+800.00	2251.40	2250.34	1.07	2291.07			
5+820.00	2250.70	2249.12	1.58	2290.97			
5+840.00	2250.07	2248.53	1.54	2290.87			
5+860.00	2249.43	2247.94	1.49	2290.77			
5+880.00	2248.87	2247.36	1.51	2290.67			
5+900.00	2248.32	2246.77	1.55	2290.57			
5+920.00	2247.77	2246.18	1.59	2290.47			
5+940.00	2246.35	2245.35	1.00	2290.37			
5+960.00	2244.83	2243.83	1.00	2290.27			
5+980.00	2243.31	2242.31	1.00	2290.17			
5+993.43	2242.31	2241.31	1.00	2290.07			

ISSUED FOR CONSTRUCTION

REVISIONS	SIGN	DATE	APPROVED
BY VGK		15/01	
CHECKED			
BY			
CHECKED			
BY			
CHECKED			
BY			
CHECKED			

EMPLOYER: **THE CHIEF EXECUTIVE OFFICER TANA WATER WORKS DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100, NYERI, KENYA

ENGINEER: **THE CHIEF MANAGET TECHNICAL SERVICES TANA WATER WORKS DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100, NYERI, KENYA

PROJECT TITLE: **REHABILITATION AND EXTENSION OF GURAGU WATER PROJECT**

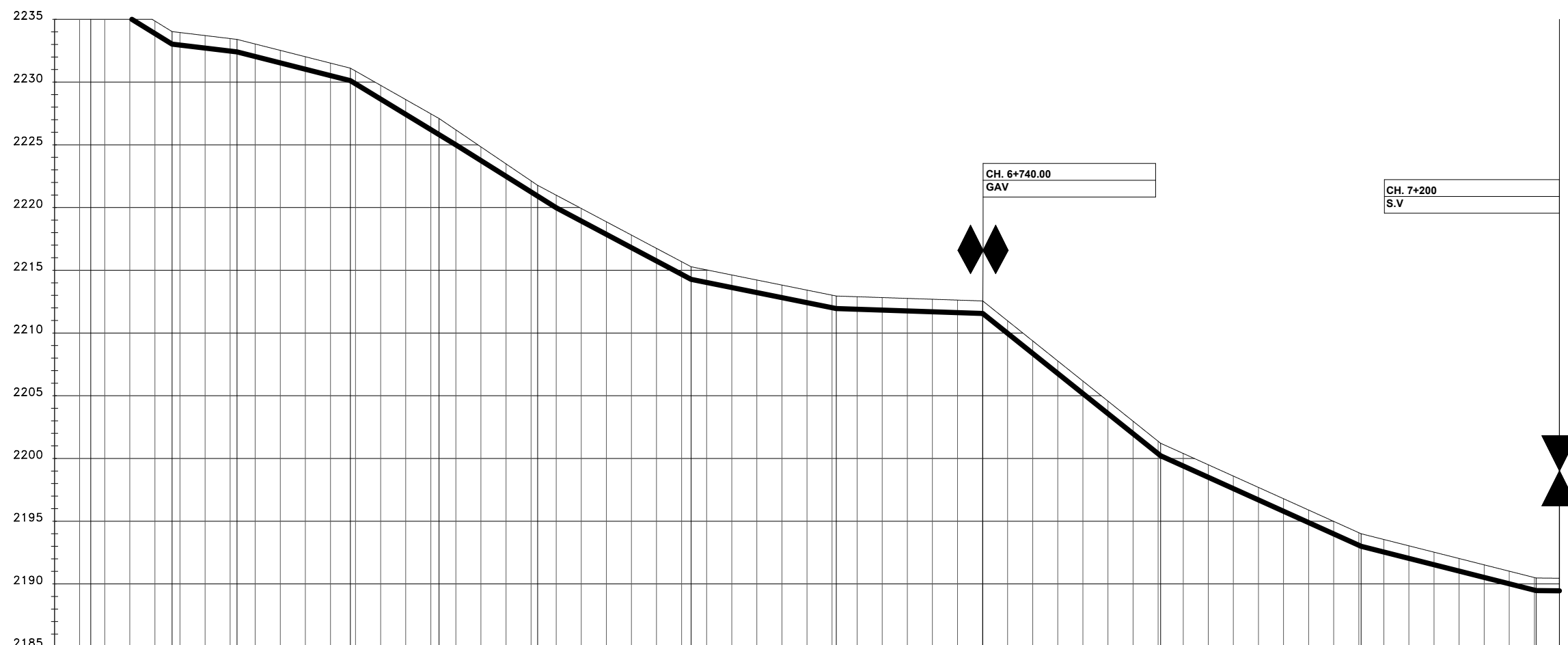
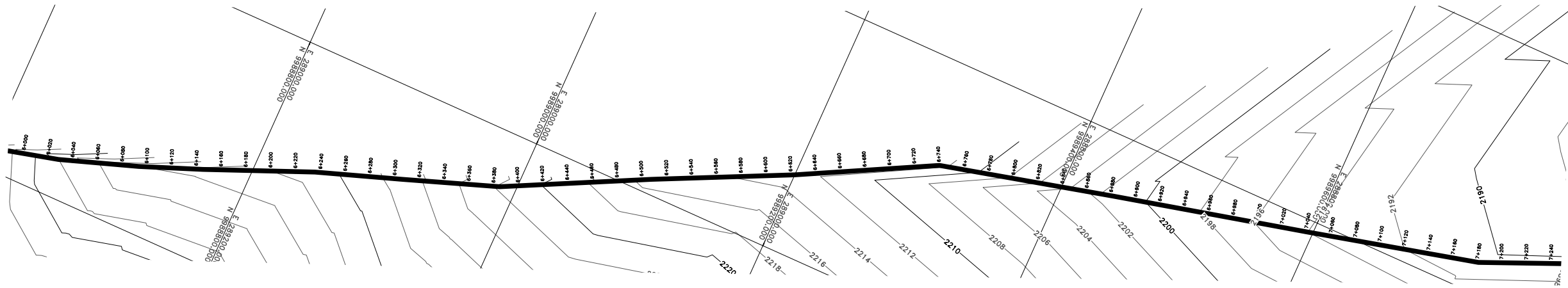
DRAWING TITLE: **RAW WATER GRAVITY MAIN - PLAN & LONGITUDINAL SECTION**

CH. 4+800.00 - 6+000.00
SHEET 5 OF 11

Designed by: K.N.G	Drawn by: A.M.M
Checked by: J.M.M	Approved by: D.N.M
Scale: H- 1:4000, V- 1:400	Date: MAY 2023
DRG No. GUR/RWM/05	

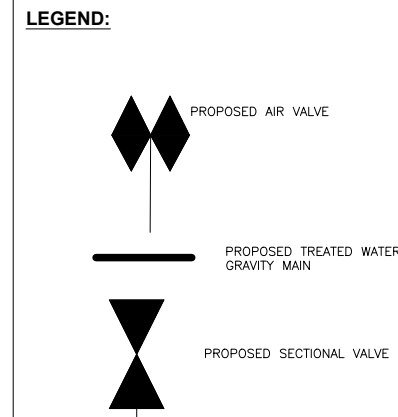


LONGITUDINAL SECTION



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	HGL DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
6+000.00	2239.09	2235.09	1.00	2289.96	150mm PVC PIPE	RED LOAM	-1:8.30
6+040.00	2237.33	2236.33	1.00	2289.86	150mm PVC PIPE	RED LOAM	-1:16.23
6+080.00	2236.10	2235.10	1.00	2289.76	150mm PVC PIPE	RED LOAM	-1:83.27
6+100.00	2234.87	2233.87	1.00	2289.66	150mm PVC PIPE	RED LOAM	-1:39.43
6+120.00	2233.95	2232.95	1.00	2289.56	150mm PVC PIPE	RED LOAM	-1:16.46
6+140.00	2233.71	2232.71	1.00	2289.46	150mm PVC PIPE	RED LOAM	-1:15.96
6+160.00	2233.47	2232.47	1.00	2289.36	150mm PVC PIPE	RED LOAM	-1:18.86
6+180.00	2233.03	2232.03	1.00	2289.26	150mm PVC PIPE	RED LOAM	-1:49.65
6+200.00	2232.53	2231.53	1.00	2289.16	150mm PVC PIPE	RED LOAM	-1:298.64
6+220.00	2232.02	2231.02	1.00	2289.06	150mm PVC PIPE	RED LOAM	-1:12.50
6+240.00	2231.51	2230.51	1.00	2288.96	150mm PVC PIPE	RED LOAM	-1:22.17
6+260.00	2230.88	2229.88	1.00	2288.86	150mm PVC PIPE	RED LOAM	-1:39.57
6+280.00	2228.61	2227.61	1.00	2288.75	150mm PVC PIPE	RED LOAM	-1:915.63
6+300.00	2227.47	2226.47	1.00	2288.65	150mm PVC PIPE	RED LOAM	
6+320.00	2226.19	2225.19	1.00	2288.55	150mm PVC PIPE	RED LOAM	
6+340.00	2224.83	2223.83	1.00	2288.45	150mm PVC PIPE	RED LOAM	
6+360.00	2223.48	2222.48	1.00	2288.35	150mm PVC PIPE	RED LOAM	
6+380.00	2222.12	2221.12	1.00	2288.25	150mm PVC PIPE	RED LOAM	
6+400.00	2220.99	2220.00	1.00	2288.15	150mm PVC PIPE	RED LOAM	
6+420.00	2219.93	2219.00	1.00	2288.05	150mm PVC PIPE	RED LOAM	
6+440.00	2218.87	2218.00	1.00	2287.95	150mm PVC PIPE	RED LOAM	
6+460.00	2217.81	2217.00	1.00	2287.85	150mm PVC PIPE	RED LOAM	
6+480.00	2216.74	2216.00	1.00	2287.75	150mm PVC PIPE	RED LOAM	
6+500.00	2215.68	2215.00	1.00	2287.65	150mm PVC PIPE	RED LOAM	
6+520.00	2215.03	2214.00	1.00	2287.54	150mm PVC PIPE	RED LOAM	
6+540.00	2214.63	2213.63	1.00	2287.44	150mm PVC PIPE	RED LOAM	
6+560.00	2214.22	2213.22	1.00	2287.34	150mm PVC PIPE	RED LOAM	
6+580.00	2213.82	2212.82	1.00	2287.24	150mm PVC PIPE	RED LOAM	
6+600.00	2213.42	2212.42	1.00	2287.14	150mm PVC PIPE	RED LOAM	
6+620.00	2213.02	2212.02	1.00	2287.04	150mm PVC PIPE	RED LOAM	
6+640.00	2212.89	2211.89	1.00	2286.94	150mm PVC PIPE	RED LOAM	
6+660.00	2212.82	2211.82	1.00	2286.84	150mm PVC PIPE	RED LOAM	
6+680.00	2212.76	2211.76	1.00	2286.74	150mm PVC PIPE	RED LOAM	
6+700.00	2212.69	2211.69	1.00	2286.64	150mm PVC PIPE	RED LOAM	
6+720.00	2212.62	2211.62	1.00	2286.54	150mm PVC PIPE	RED LOAM	
6+740.00	2212.56	2211.56	1.00	2286.44	150mm PVC PIPE	RED LOAM	
6+760.00	2210.97	2209.97	1.00	2286.34	150mm PVC PIPE	RED LOAM	
6+780.00	2209.37	2208.37	1.00	2286.23	150mm PVC PIPE	RED LOAM	
6+800.00	2207.77	2206.77	1.00	2286.13	150mm PVC PIPE	RED LOAM	
6+820.00	2206.17	2205.17	1.00	2286.03	150mm PVC PIPE	RED LOAM	
6+840.00	2204.57	2203.57	1.00	2285.93	150mm PVC PIPE	RED LOAM	
6+860.00	2202.97	2201.97	1.00	2285.83	150mm PVC PIPE	RED LOAM	
6+880.00	2201.37	2200.37	1.00	2285.73	150mm PVC PIPE	RED LOAM	
6+900.00	2200.40	2199.40	1.00	2285.63	150mm PVC PIPE	RED LOAM	
6+920.00	2199.50	2198.50	1.00	2285.53	150mm PVC PIPE	RED LOAM	
6+940.00	2198.60	2197.60	1.00	2285.43	150mm PVC PIPE	RED LOAM	
6+960.00	2197.69	2196.69	1.00	2285.33	150mm PVC PIPE	RED LOAM	
6+980.00	2196.79	2195.79	1.00	2285.23	150mm PVC PIPE	RED LOAM	
7+000.00	2195.89	2194.89	1.00	2285.13	150mm PVC PIPE	RED LOAM	
7+020.00	2194.99	2193.99	1.00	2285.02	150mm PVC PIPE	RED LOAM	
7+040.00	2194.08	2193.08	1.00	2284.92	150mm PVC PIPE	RED LOAM	
7+060.00	2193.54	2192.54	1.00	2284.82	150mm PVC PIPE	RED LOAM	
7+080.00	2193.04	2192.04	1.00	2284.72	150mm PVC PIPE	RED LOAM	
7+100.00	2192.53	2191.53	1.00	2284.62	150mm PVC PIPE	RED LOAM	
7+120.00	2192.03	2191.03	1.00	2284.52	150mm PVC PIPE	RED LOAM	
7+140.00	2191.52	2190.52	1.00	2284.42	150mm PVC PIPE	RED LOAM	
7+160.00	2191.02	2190.02	1.00	2284.32	150mm PVC PIPE	RED LOAM	
7+180.00	2189.51	2189.51	1.00	2284.22	150mm PVC PIPE	RED LOAM	
7+200.00	2189.00	2189.00	1.00	2284.12	150mm PVC PIPE	RED LOAM	

- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



ISSUED FOR CONSTRUCTION

REVISIONS	SIGN	DATE	APPROVED
BY	V.K.K.	15/01	
CHECKED			
BY			
CHECKED			
BY			
CHECKED			

EMPLOYER:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
 DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

ENGINEER:
THE CHIEF MANAGET TECHNICAL
SERVICES
TANA WATER WORKS
 DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

PROJECT TITLE:
REHABILITATION AND EXTENSION OF
GURAGU WATER PROJECT

DRAWING TITLE:
TREATED WATER GRAVITY MAIN -
PLAN & LONGITUDINAL SECTION

CH. 6+000.00 - 7+200.00
SHEET 6 OF 11

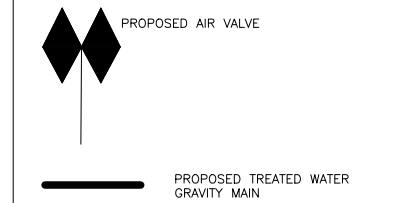
Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H: 1:4000, V: 1:400 Date: MAY 2023
 DRG No. **GUR/RWM/06**



LONGITUDINAL SECTION

- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

LEGEND:



ISSUED FOR CONSTRUCTION

REVISIONS		SIGN	DATE	APPROVED
BY	VJK		15/01	
CHECKED				
BY				
CHECKED				
BY				
CHECKED				

EMPLOYER: **THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100,
NYERI, KENYA

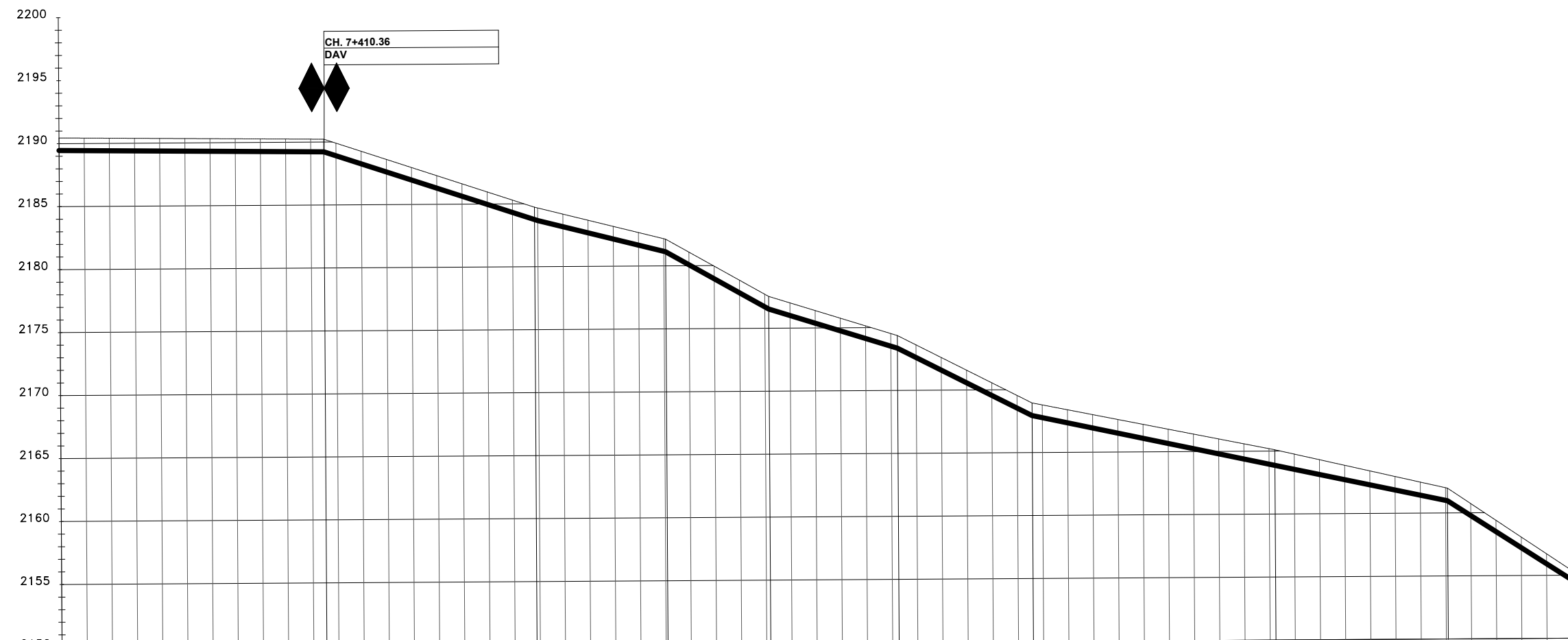
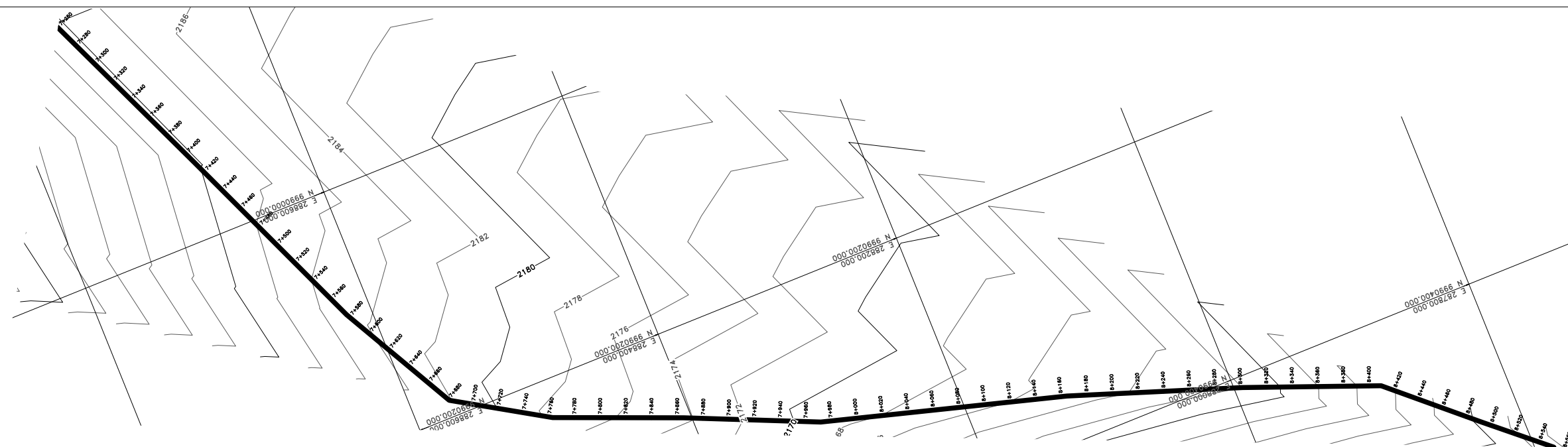
ENGINEER: **THE CHIEF MANAGER TECHNICAL
SERVICES
TANA WATER WORKS
DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100,
NYERI, KENYA

PROJECT TITLE:
**REHABILITATION AND EXTENSION OF
GURAGU WATER PROJECT**

DRAWING TITLE:
**TREATED WATER GRAVITY MAIN -
PLAN & LONGITUDINAL SECTION**

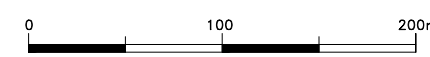
**CH. 7+200.00 - 8+400.00
SHEET 7 OF 11**

Designed by: K.N.G Drawn by: A.M.M
Checked by: J.M.M Approved by: D.N.M
Scale: H: 1:4000, V: 1:400 Date: MAY 2023
DRG No. **GUR/RWM/07**

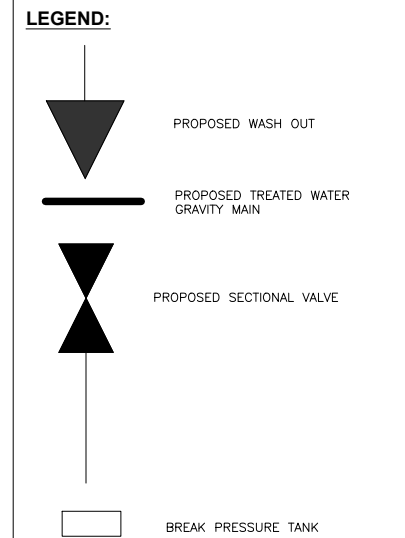


CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	DATUM HGL (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
7+220.00	2190.43	2189.43	1.00	2284.02	100MM UP VC PL EXISTING		-1:915.63
7+240.00	2190.41	2189.41	1.00	2283.81	100MM UP VC PL EXISTING		-1:915.63
7+260.00	2190.39	2189.39	1.00	2283.71	100MM UP VC PL EXISTING		-1:915.63
7+280.00	2190.37	2189.37	1.00	2283.61	100MM UP VC PL EXISTING		-1:915.63
7+300.00	2190.34	2189.34	1.00	2283.51	100MM UP VC PL EXISTING		-1:915.63
7+320.00	2190.32	2189.32	1.00	2283.41	100MM UP VC PL EXISTING		-1:915.63
7+340.00	2190.30	2189.30	1.00	2283.31	100MM UP VC PL EXISTING		-1:915.63
7+360.00	2190.28	2189.28	1.00	2283.21	100MM UP VC PL EXISTING		-1:915.63
7+380.00	2190.26	2189.26	1.00	2283.11	100MM UP VC PL EXISTING		-1:915.63
7+400.00	2190.23	2189.23	1.00	2283.01	100MM UP VC PL EXISTING		-1:915.63
7+410.36	2189.91	2188.91	1.00	2282.91	100MM UP VC PL EXISTING		-1:915.63
7+420.00	2189.25	2188.25	1.00	2282.81	100MM UP VC PL EXISTING		-1:915.63
7+440.00	2188.59	2187.59	1.00	2282.71	100MM UP VC PL EXISTING		-1:915.63
7+460.00	2187.93	2186.94	1.00	2282.60	100MM UP VC PL EXISTING		-1:915.63
7+480.00	2187.27	2186.28	1.00	2282.50	100MM UP VC PL EXISTING		-1:915.63
7+500.00	2186.61	2185.63	1.00	2282.40	100MM UP VC PL EXISTING		-1:915.63
7+520.00	2185.96	2184.97	1.00	2282.30	100MM UP VC PL EXISTING		-1:915.63
7+540.00	2185.30	2184.32	1.00	2282.20	100MM UP VC PL EXISTING		-1:915.63
7+560.00	2184.66	2183.66	1.00	2282.10	100MM UP VC PL EXISTING		-1:915.63
7+600.00	2184.16	2183.16	1.00	2282.00	100MM UP VC PL EXISTING		-1:915.63
7+620.00	2183.66	2182.66	1.00	2281.90	100MM UP VC PL EXISTING		-1:915.63
7+640.00	2183.16	2182.16	1.00	2281.80	100MM UP VC PL EXISTING		-1:915.63
7+660.00	2182.66	2181.66	1.00	2281.70	100MM UP VC PL EXISTING		-1:915.63
7+680.00	2182.16	2181.16	1.00	2281.60	100MM UP VC PL EXISTING		-1:915.63
7+700.00	2181.08	2180.08	1.00	2281.50	100MM UP VC PL EXISTING		-1:915.63
7+720.00	2179.95	2178.95	1.00	2281.40	100MM UP VC PL EXISTING		-1:915.63
7+740.00	2178.83	2177.83	1.00	2281.28	100MM UP VC PL EXISTING		-1:915.63
7+760.00	2177.70	2176.70	1.00	2281.15	100MM UP VC PL EXISTING		-1:915.63
7+780.00	2177.00	2176.00	1.00	2281.05	100MM UP VC PL EXISTING		-1:915.63
7+800.00	2176.38	2175.38	1.00	2280.95	100MM UP VC PL EXISTING		-1:915.63
7+820.00	2175.76	2174.76	1.00	2280.85	100MM UP VC PL EXISTING		-1:915.63
7+840.00	2175.14	2174.14	1.00	2280.75	100MM UP VC PL EXISTING		-1:915.63
7+860.00	2174.52	2173.52	1.00	2280.65	100MM UP VC PL EXISTING		-1:915.63
7+880.00	2173.60	2172.60	1.00	2280.55	100MM UP VC PL EXISTING		-1:915.63
7+900.00	2172.59	2171.59	1.00	2280.45	100MM UP VC PL EXISTING		-1:915.63
7+920.00	2171.57	2170.57	1.00	2280.35	100MM UP VC PL EXISTING		-1:915.63
7+940.00	2170.56	2169.56	1.00	2280.25	100MM UP VC PL EXISTING		-1:915.63
7+960.00	2169.54	2168.54	1.00	2280.15	100MM UP VC PL EXISTING		-1:915.63
7+971.88	2168.78	2167.77	1.01	2280.05	100MM UP VC PL EXISTING		-1:915.63
7+980.00	2168.38	2167.35	1.03	2279.95	100MM UP VC PL EXISTING		-1:915.63
8+000.00	2167.98	2166.92	1.06	2279.85	100MM UP VC PL EXISTING		-1:915.63
8+020.00	2167.58	2166.50	1.08	2279.75	100MM UP VC PL EXISTING		-1:915.63
8+040.00	2167.18	2166.08	1.11	2279.65	100MM UP VC PL EXISTING		-1:915.63
8+060.00	2166.79	2165.65	1.13	2279.55	100MM UP VC PL EXISTING		-1:915.63
8+080.00	2166.39	2165.23	1.16	2279.45	100MM UP VC PL EXISTING		-1:915.63
8+100.00	2165.99	2164.81	1.18	2279.35	100MM UP VC PL EXISTING		-1:915.63
8+120.00	2165.59	2164.39	1.20	2279.25	100MM UP VC PL EXISTING		-1:915.63
8+140.00	2165.19	2163.96	1.23	2279.15	100MM UP VC PL EXISTING		-1:915.63
8+160.00	2164.75	2163.54	1.21	2279.05	100MM UP VC PL EXISTING		-1:915.63
8+180.00	2164.29	2163.12	1.17	2278.95	100MM UP VC PL EXISTING		-1:915.63
8+200.00	2163.83	2162.70	1.14	2278.85	100MM UP VC PL EXISTING		-1:915.63
8+220.00	2163.38	2162.27	1.11	2278.75	100MM UP VC PL EXISTING		-1:915.63
8+240.00	2162.92	2161.85	1.07	2278.65	100MM UP VC PL EXISTING		-1:915.63
8+260.00	2162.46	2161.43	1.04	2278.55	100MM UP VC PL EXISTING		-1:915.63
8+280.00	2162.01	2161.00	1.00	2278.45	100MM UP VC PL EXISTING		-1:915.63
8+300.00	2161.59	2160.58	0.95	2278.35	100MM UP VC PL EXISTING		-1:915.63
8+340.00	2159.39	2158.50	0.90	2278.25	100MM UP VC PL EXISTING		-1:915.63
8+360.00	2158.05	2157.21	0.84	2278.15	100MM UP VC PL EXISTING		-1:915.63
8+380.00	2156.71	2155.92	0.79	2278.05	100MM UP VC PL EXISTING		-1:915.63
8+400.00	2155.92	2155.92	0.00	2277.95	100MM UP VC PL EXISTING		-1:915.63

LONGITUDINAL SECTION



- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



ISSUED FOR CONSTRUCTION

REVISIONS		SIGN	DATE	APPROVED
BY	V.G.K.		15/01	
CHECKED				
BY				
CHECKED				
BY				
CHECKED				

EMPLOYER: **THE CHIEF EXECUTIVE OFFICER TANA WATER WORKS DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100, NYERI, KENYA

ENGINEER: **THE CHIEF MANAGER TECHNICAL SERVICES TANA WATER WORKS DEVELOPMENT AGENCY**
P.O BOX 1292 - 10100, NYERI, KENYA

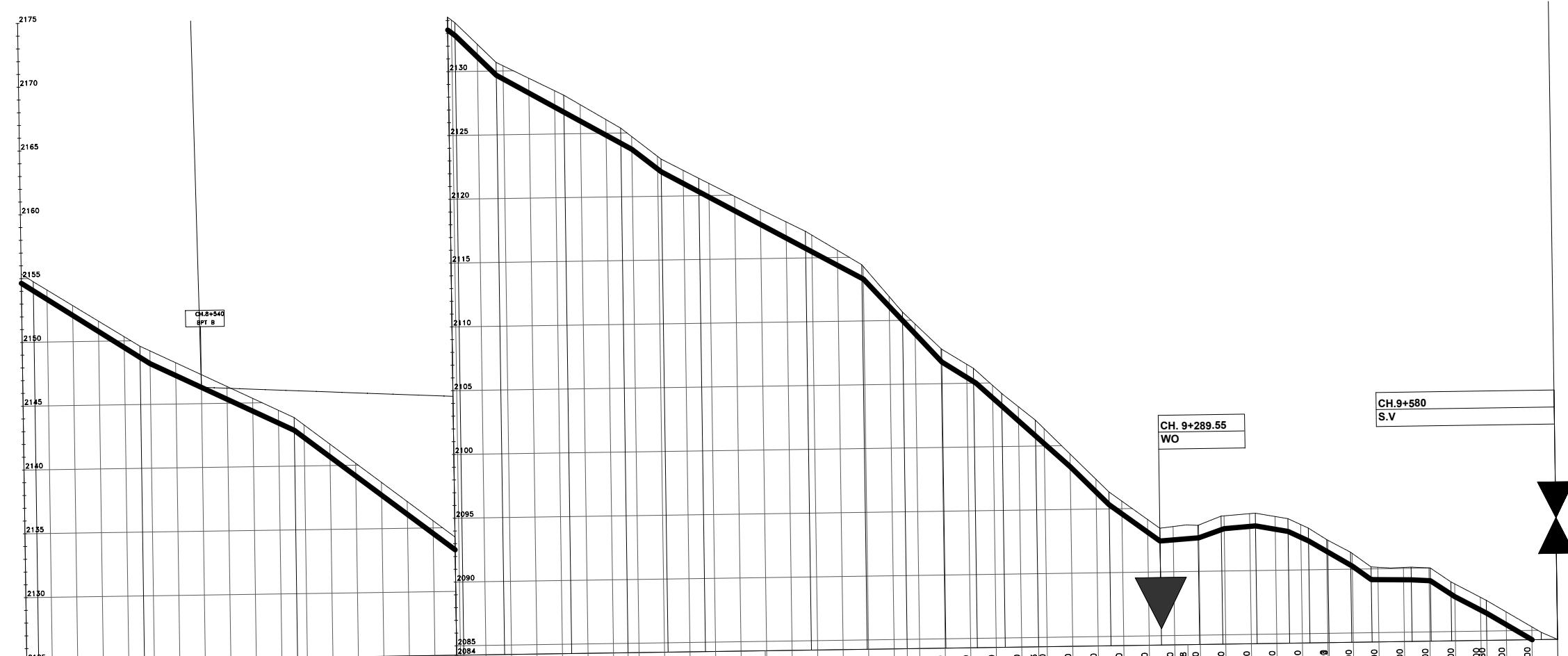
PROJECT TITLE: **REHABILITATION AND EXTENSION OF GURAGA WATER PROJECT**

DRAWING TITLE: **RAW WATER GRAVITY MAIN - PLAN & LONGITUDINAL SECTION**

CH. 8+400.00 - 9+600.00
SHEET 8 OF 11

Designed by: K.N.G Drawn by: A.M.M
Checked by: J.M.M Approved by: D.N.M
Scale: H: 1:4000, V: 1:400 Date: MAY 2023

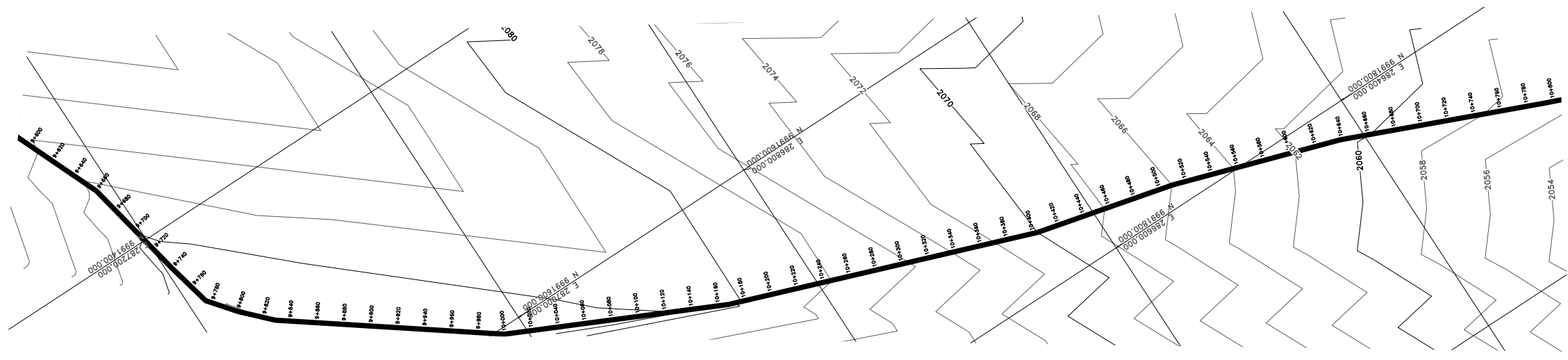
DRG No. **GUR/RWM/08**



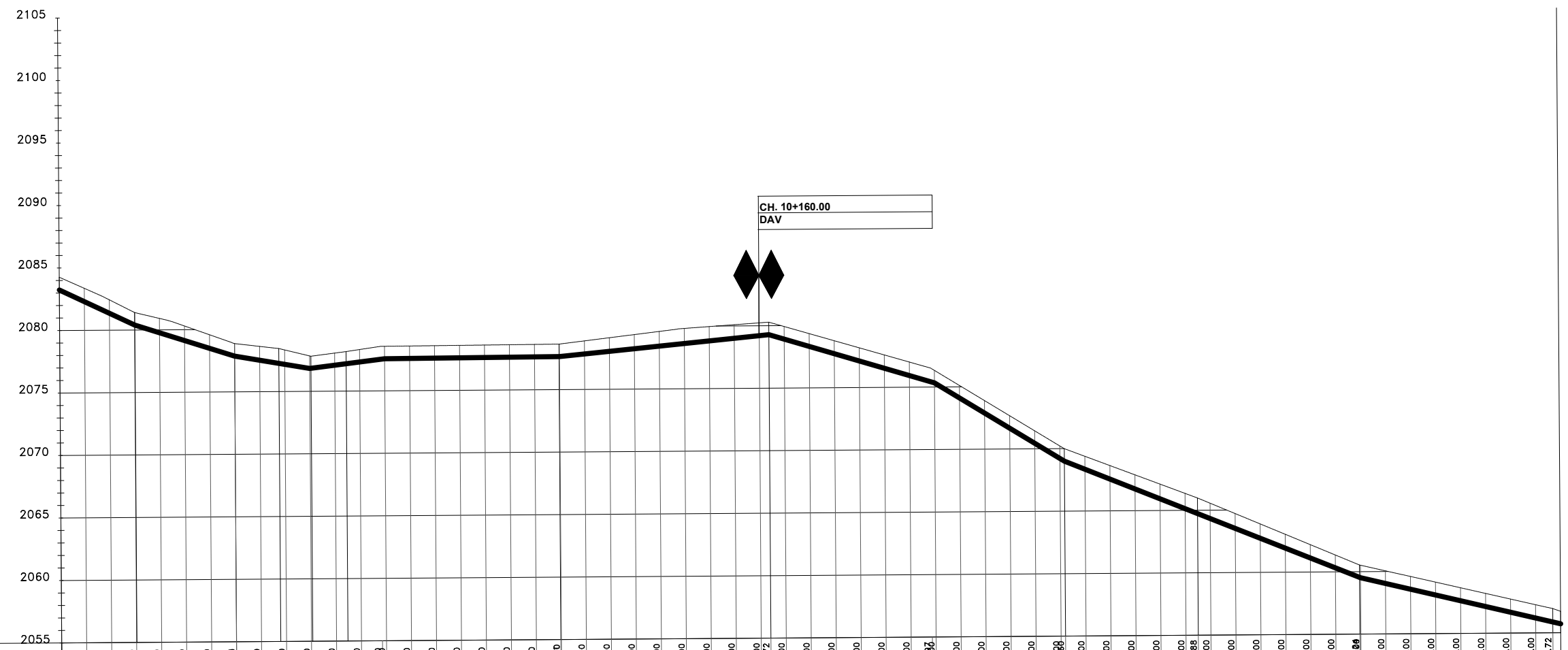
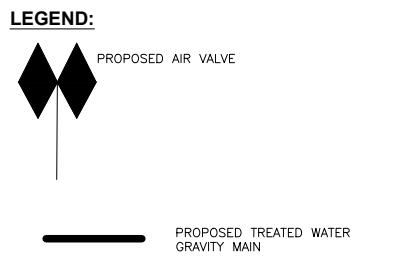
CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
8+420.00	2154.08	2153.35	0.73	2277.97		RED LOAM	-1:11
8+440.00	2152.83	2152.06	0.77	2277.77		RED LOAM	-1:11
8+460.00	2151.58	2150.77	0.81	2277.66		RED LOAM	-1:11
8+480.00	2150.33	2149.49	0.85	2277.56		RED LOAM	-1:11
8+500.00	2149.20	2148.24	0.96	2277.46		RED LOAM	-1:11
8+520.00	2148.24	2147.24	1.00	2277.36		RED LOAM	-1:11
8+540.00	2147.28	2146.28	1.00	2146.28		RED LOAM	-1:11
8+560.00	2146.32	2145.32	1.00	2146.18		RED LOAM	-1:11
8+580.00	2145.36	2144.36	1.00	2146.08		RED LOAM	-1:11
8+600.00	2144.40	2143.40	1.00	2145.98		RED LOAM	-1:11
8+612.32	2143.22	2142.22	1.00	2145.88		RED LOAM	-1:11
8+640.00	2141.69	2140.69	1.00	2145.78		RED LOAM	-1:11
8+660.00	2140.16	2139.16	1.00	2145.68		RED LOAM	-1:11
8+680.00	2138.63	2137.63	1.00	2145.57		RED LOAM	-1:11
8+700.00	2137.10	2136.10	1.00	2145.47		RED LOAM	-1:11
8+720.00	2135.57	2134.57	1.00	2145.37		RED LOAM	-1:11
8+748.88	2134.04	2133.04	1.00	2145.27		RED LOAM	-1:11
8+760.00	2132.12	2131.12	1.00	2145.17		RED LOAM	-1:11
8+780.00	2130.40	2129.37	1.03	2145.07		RED LOAM	-1:11
8+800.00	2129.40	2128.24	1.16	2144.97		RED LOAM	-1:11
8+820.00	2128.39	2127.10	1.29	2144.87		RED LOAM	-1:11
8+840.00	2127.27	2125.97	1.30	2144.77		RED LOAM	-1:11
8+860.00	2126.07	2124.84	1.23	2144.67		RED LOAM	-1:11
8+871.44	2124.71	2123.41	1.30	2144.57		RED LOAM	-1:11
8+880.00	2123.14	2122.14	1.00	2144.47		RED LOAM	-1:11
8+900.00	2122.00	2120.97	1.03	2144.36		RED LOAM	-1:11
8+920.00	2120.95	2119.87	1.08	2144.26		RED LOAM	-1:11
8+940.00	2119.91	2118.77	1.14	2144.16		RED LOAM	-1:11
8+960.00	2118.87	2117.67	1.19	2144.06		RED LOAM	-1:11
9+000.00	2117.85	2116.57	1.28	2143.96		RED LOAM	-1:11
9+020.00	2116.79	2115.46	1.33	2143.86		RED LOAM	-1:11
9+040.00	2115.57	2114.38	1.19	2143.76		RED LOAM	-1:11
9+060.00	2114.28	2113.28	1.00	2143.66		RED LOAM	-1:11
9+080.00	2111.10	2111.10	0.00	2143.56		RED LOAM	-1:11
9+090.23	2109.71	2109.71	0.00	2143.46		RED LOAM	-1:11
9+100.00	2107.75	2106.76	0.99	2143.36		RED LOAM	-1:11
9+120.00	2106.49	2105.45	1.04	2143.26		RED LOAM	-1:11
9+140.00	2104.81	2103.82	0.99	2143.15		RED LOAM	-1:11
9+160.00	2103.11	2101.99	1.12	2143.05		RED LOAM	-1:11
9+180.00	2101.35	2100.17	1.18	2142.95		RED LOAM	-1:11
9+200.00	2099.34	2098.34	1.00	2142.85		RED LOAM	-1:11
9+220.00	2097.34	2096.34	1.00	2142.75		RED LOAM	-1:11
9+240.00	2095.59	2094.59	1.00	2142.65		RED LOAM	-1:11
9+260.00	2094.13	2093.13	1.00	2142.55		RED LOAM	-1:11
9+280.00	2093.54	2092.49	1.05	2142.45		RED LOAM	-1:11
9+300.00	2093.63	2092.63	1.00	2142.35		RED LOAM	-1:11
9+320.00	2094.32	2093.32	1.00	2142.25		RED LOAM	-1:11
9+340.00	2094.46	2093.46	1.00	2142.15		RED LOAM	-1:11
9+360.00	2094.21	2093.21	1.00	2142.05		RED LOAM	-1:11
9+380.00	2093.55	2092.55	1.00	2141.94		RED LOAM	-1:11
9+400.00	2092.36	2091.43	0.93	2141.84		RED LOAM	-1:11
9+420.00	2091.24	2090.12	1.12	2141.74		RED LOAM	-1:11
9+440.00	2090.12	2089.14	0.98	2141.64		RED LOAM	-1:11
9+460.00	2089.11	2088.11	1.00	2141.54		RED LOAM	-1:11
9+480.00	2089.01	2088.01	1.00	2141.44		RED LOAM	-1:11
9+500.00	2088.73	2087.65	1.08	2141.34		RED LOAM	-1:11
9+520.00	2087.65	2086.65	1.00	2141.24		RED LOAM	-1:11
9+540.00	2086.48	2085.48	1.00	2141.14		RED LOAM	-1:11
9+560.00	2085.28	2084.28	1.00	2141.04		RED LOAM	-1:11
9+580.00	2084.28	2083.28	1.00	2140.94		RED LOAM	-1:11

LONGITUDINAL SECTION





- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	HGL DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION	SLOPE OF PIPE (H/V)
9+620.00	2083.36	2082.29	1.07	2140.84	100MM HDPE	SOFT SOIL	-1:21.18
9+640.00	2082.43	2081.35	1.08	2140.74	100MM HDPE	SOFT SOIL	-1:31.47
9+660.00	2081.41	2080.40	1.01	2140.63	100MM HDPE	SOFT SOIL	-1:58.40
9+680.00	2080.91	2079.77	1.15	2140.53	100MM HDPE	SOFT SOIL	1:82.31
9+700.00	2080.29	2079.13	1.16	2140.43	100MM HDPE	SOFT SOIL	1:1653.85
9+720.00	2079.58	2078.49	1.08	2140.33	100MM HDPE	SOFT SOIL	1:102.38
9+740.00	2078.86	2077.86	1.00	2140.23	100MM HDPE	SOFT SOIL	-1:33.51
9+760.00	2078.62	2077.52	1.11	2140.13	100MM HDPE	SOFT SOIL	-1:16.35
9+780.00	2078.33	2077.17	1.15	2140.03	100MM HDPE	SOFT SOIL	-1:24.93
9+800.00	2077.83	2076.67	1.16	2139.93	100MM HDPE	SOFT SOIL	-1:42.10
9+820.00	2078.04	2077.08	0.97	2139.83	100MM HDPE	SOFT SOIL	-1:27
9+840.00	2078.32	2077.32	1.00	2139.73	100MM HDPE	SOFT SOIL	
9+860.00	2078.56	2077.56	1.00	2139.63	100MM HDPE	SOFT SOIL	
9+880.00	2078.57	2077.57	1.00	2139.53	100MM HDPE	SOFT SOIL	
9+900.00	2078.58	2077.59	1.00	2139.43	100MM HDPE	SOFT SOIL	
9+920.00	2078.60	2077.60	1.00	2139.33	100MM HDPE	SOFT SOIL	
9+940.00	2078.61	2077.61	1.00	2139.23	100MM HDPE	SOFT SOIL	
9+960.00	2078.62	2077.62	1.00	2139.13	100MM HDPE	SOFT SOIL	
9+980.00	2078.63	2077.63	1.00	2139.03	100MM HDPE	SOFT SOIL	
10+000.00	2078.65	2077.65	1.00	2138.93	100MM HDPE	SOFT SOIL	
10+020.00	2078.88	2077.84	1.04	2138.82	100MM HDPE	SOFT SOIL	
10+040.00	2079.12	2078.04	1.09	2138.72	100MM HDPE	SOFT SOIL	
10+060.00	2079.36	2078.23	1.13	2138.62	100MM HDPE	SOFT SOIL	
10+080.00	2079.60	2078.43	1.17	2138.52	100MM HDPE	SOFT SOIL	
10+100.00	2079.85	2078.62	1.21	2138.42	100MM HDPE	SOFT SOIL	
10+120.00	2079.96	2078.82	1.14	2138.32	100MM HDPE	SOFT SOIL	
10+140.00	2080.10	2079.01	1.08	2138.21	100MM HDPE	SOFT SOIL	
10+160.00	2080.23	2079.21	1.02	2138.11	100MM HDPE	SOFT SOIL	
10+180.00	2079.95	2078.92	1.01	2138.01	100MM HDPE	SOFT SOIL	
10+200.00	2079.34	2078.32	1.02	2137.91	100MM HDPE	SOFT SOIL	
10+220.00	2078.76	2077.72	1.04	2137.81	100MM HDPE	SOFT SOIL	
10+240.00	2078.18	2077.13	1.05	2137.71	100MM HDPE	SOFT SOIL	
10+260.00	2077.60	2076.53	1.07	2137.61	100MM HDPE	SOFT SOIL	
10+280.00	2077.02	2075.93	1.08	2137.51	100MM HDPE	SOFT SOIL	
10+300.00	2076.34	2075.25	1.09	2137.41	100MM HDPE	SOFT SOIL	
10+320.00	2075.11	2074.11	1.00	2137.31	100MM HDPE	SOFT SOIL	
10+340.00	2073.89	2072.89	1.00	2137.21	100MM HDPE	SOFT SOIL	
10+360.00	2072.67	2071.67	1.00	2137.11	100MM HDPE	SOFT SOIL	
10+380.00	2071.44	2070.44	1.00	2137.01	100MM HDPE	SOFT SOIL	
10+400.00	2070.22	2069.22	1.00	2136.91	100MM HDPE	SOFT SOIL	
10+420.00	2069.38	2068.34	1.04	2136.81	100MM HDPE	SOFT SOIL	
10+440.00	2068.62	2067.54	1.09	2136.71	100MM HDPE	SOFT SOIL	
10+460.00	2067.87	2066.74	1.13	2136.61	100MM HDPE	SOFT SOIL	
10+480.00	2067.11	2065.93	1.18	2136.51	100MM HDPE	SOFT SOIL	
10+500.00	2066.36	2065.13	1.23	2136.41	100MM HDPE	SOFT SOIL	
10+520.00	2065.56	2064.33	1.23	2136.31	100MM HDPE	SOFT SOIL	
10+540.00	2064.72	2063.53	1.19	2136.21	100MM HDPE	SOFT SOIL	
10+560.00	2063.87	2062.72	1.15	2136.11	100MM HDPE	SOFT SOIL	
10+580.00	2063.03	2061.92	1.11	2136.01	100MM HDPE	SOFT SOIL	
10+600.00	2062.19	2061.12	1.07	2135.91	100MM HDPE	SOFT SOIL	
10+620.00	2061.34	2060.32	1.03	2135.81	100MM HDPE	SOFT SOIL	
10+640.00	2060.52	2060.52	0.00	2135.66	100MM HDPE	SOFT SOIL	
10+660.00	2060.05	2059.04	1.01	2135.55	100MM HDPE	SOFT SOIL	
10+680.00	2059.59	2058.57	1.02	2135.45	100MM HDPE	SOFT SOIL	
10+700.00	2059.12	2058.09	1.03	2135.35	100MM HDPE	SOFT SOIL	
10+720.00	2058.66	2057.62	1.04	2135.25	100MM HDPE	SOFT SOIL	
10+740.00	2058.19	2057.14	1.05	2135.15	100MM HDPE	SOFT SOIL	
10+760.00	2057.73	2056.67	1.06	2135.05	100MM HDPE	SOFT SOIL	
10+780.00	2057.26	2056.19	1.07	2134.95	100MM HDPE	SOFT SOIL	
10+800.00	2056.72	2055.72	1.00	2134.85	100MM HDPE	SOFT SOIL	

ISSUED FOR CONSTRUCTION

REVISIONS	SIGN	DATE	APPROVED
BY VGK		15/01	
CHECKED			
BY			
CHECKED			
BY			
CHECKED			

EMPLOYER:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

ENGINEER:
CHIEF MANAGER TECHNICAL
SERVICES
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

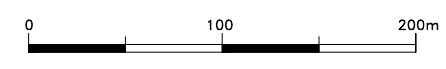
PROJECT TITLE:
REHABILITATION AND EXTENSION OF
GURAGU WATER PROJECT

DRAWING TITLE:
RAW WATER GRAVITY MAIN -
PLAN & LONGITUDINAL SECTION

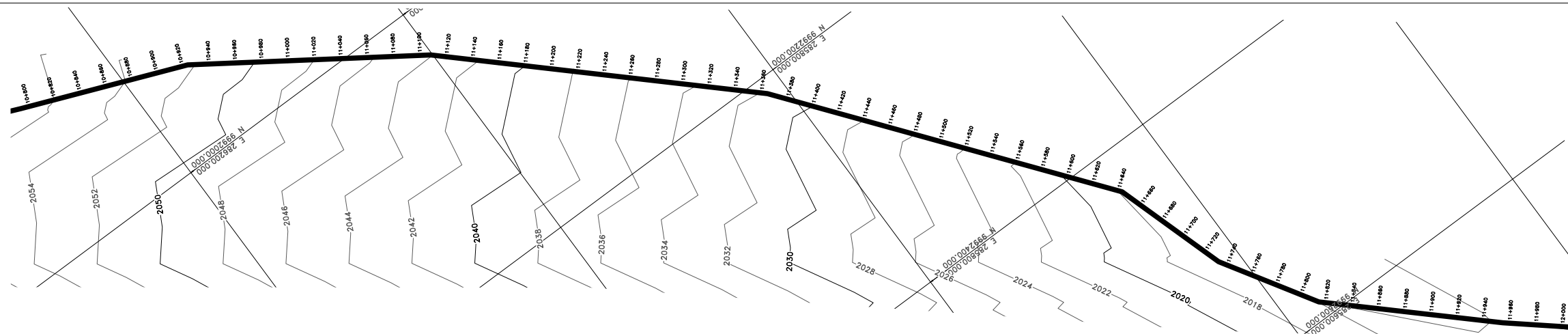
CH. 9+600.00 - 10+800.00
SHEET 9 OF 11

Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H: 1:4000, V: 1:400 Date: MAY 2023

DRG No. **GUR/RWM/09**

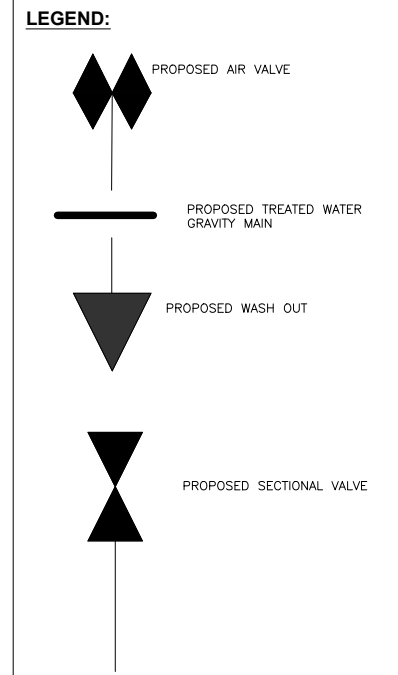


LONGITUDINAL SECTION



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	HGL DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION
10+820.00	2056.00	2055.00	1.00	2134.86		
10+840.00	2055.28	2054.28	1.00	2134.79		
10+860.00	2054.56	2053.56	1.00	2134.69		
10+880.00	2053.84	2052.84	1.00	2134.58		
10+900.00	2053.12	2052.12	1.00	2134.48		
10+920.00	2052.40	2051.40	1.00	2134.38		
10+940.00	2051.68	2050.68	1.00	2134.28		
10+960.00	2050.96	2049.96	1.00	2134.18		
10+980.00	2050.24	2049.24	1.00	2134.08		
11+000.00	2049.52	2048.52	1.00	2133.98		
11+020.00	2048.80	2047.80	1.00	2133.88		
11+040.00	2048.08	2047.08	1.00	2133.78		
11+060.00	2047.36	2046.36	1.00	2133.68		
11+080.00	2046.64	2045.64	1.00	2133.58		
11+100.00	2045.92	2044.92	1.00	2133.48		
11+120.00	2045.20	2044.20	1.00	2133.38		
11+140.00	2044.48	2043.48	1.00	2133.28		
11+160.00	2043.76	2042.76	1.00	2133.18		
11+180.00	2043.04	2042.04	1.00	2133.08		
11+200.00	2042.32	2041.32	1.00	2132.98		
11+220.00	2041.60	2040.60	1.00	2132.88		
11+240.00	2040.88	2039.88	1.00	2132.78		
11+260.00	2040.16	2039.16	1.00	2132.68		
11+280.00	2039.44	2038.44	1.00	2132.58		
11+300.00	2038.72	2037.72	1.00	2132.48		
11+320.00	2038.00	2037.00	1.00	2132.38		
11+340.00	2037.28	2036.28	1.00	2132.28		
11+360.00	2036.56	2035.56	1.00	2132.18		
11+380.00	2035.84	2034.84	1.00	2132.08		
11+400.00	2035.12	2034.12	1.00	2131.98		
11+420.00	2034.40	2033.40	1.00	2131.88		
11+440.00	2033.68	2032.68	1.00	2131.78		
11+460.00	2032.96	2031.96	1.00	2131.68		
11+480.00	2032.24	2031.24	1.00	2131.58		
11+500.00	2031.52	2030.52	1.00	2131.48		
11+520.00	2030.80	2029.80	1.00	2131.38		
11+540.00	2030.08	2029.08	1.00	2131.28		
11+560.00	2029.36	2028.36	1.00	2131.18		
11+580.00	2028.64	2027.64	1.00	2131.08		
11+600.00	2027.92	2026.92	1.00	2130.98		
11+620.00	2027.20	2026.20	1.00	2130.88		
11+640.00	2026.48	2025.48	1.00	2130.78		
11+660.00	2025.76	2024.76	1.00	2130.68		
11+680.00	2025.04	2024.04	1.00	2130.58		
11+700.00	2024.32	2023.32	1.00	2130.48		
11+720.00	2023.60	2022.60	1.00	2130.38		
11+740.00	2022.88	2021.88	1.00	2130.28		
11+760.00	2022.16	2021.16	1.00	2130.18		
11+780.00	2021.44	2020.44	1.00	2130.08		
11+800.00	2020.72	2019.72	1.00	2129.98		
11+820.00	2020.00	2019.00	1.00	2129.88		
11+840.00	2019.28	2018.28	1.00	2129.78		
11+860.00	2018.56	2017.56	1.00	2129.68		
11+880.00	2017.84	2016.84	1.00	2129.58		
11+900.00	2017.12	2016.12	1.00	2129.48		
11+920.00	2016.40	2015.40	1.00	2129.38		
11+940.00	2015.68	2014.68	1.00	2129.28		
11+960.00	2014.96	2013.96	1.00	2129.18		
11+980.00	2014.24	2013.24	1.00	2129.08		
12+000.00	2013.52	2012.52	1.00	2128.98		

- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



ISSUED FOR CONSTRUCTION

REVISIONS	SIGN	DATE	APPROVED
BY VGK		15/01	
CHECKED			
BY			
CHECKED			
BY			
CHECKED			

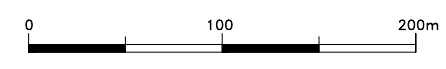
EMPLOYER:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS
DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

PROJECT TITLE:
REHABILITATION AND EXTENSION OF
GURAGA WATER PROJECT

DRAWING TITLE:
RAW WATER GRAVITY MAIN - PLAN
& LONGITUDINAL SECTION

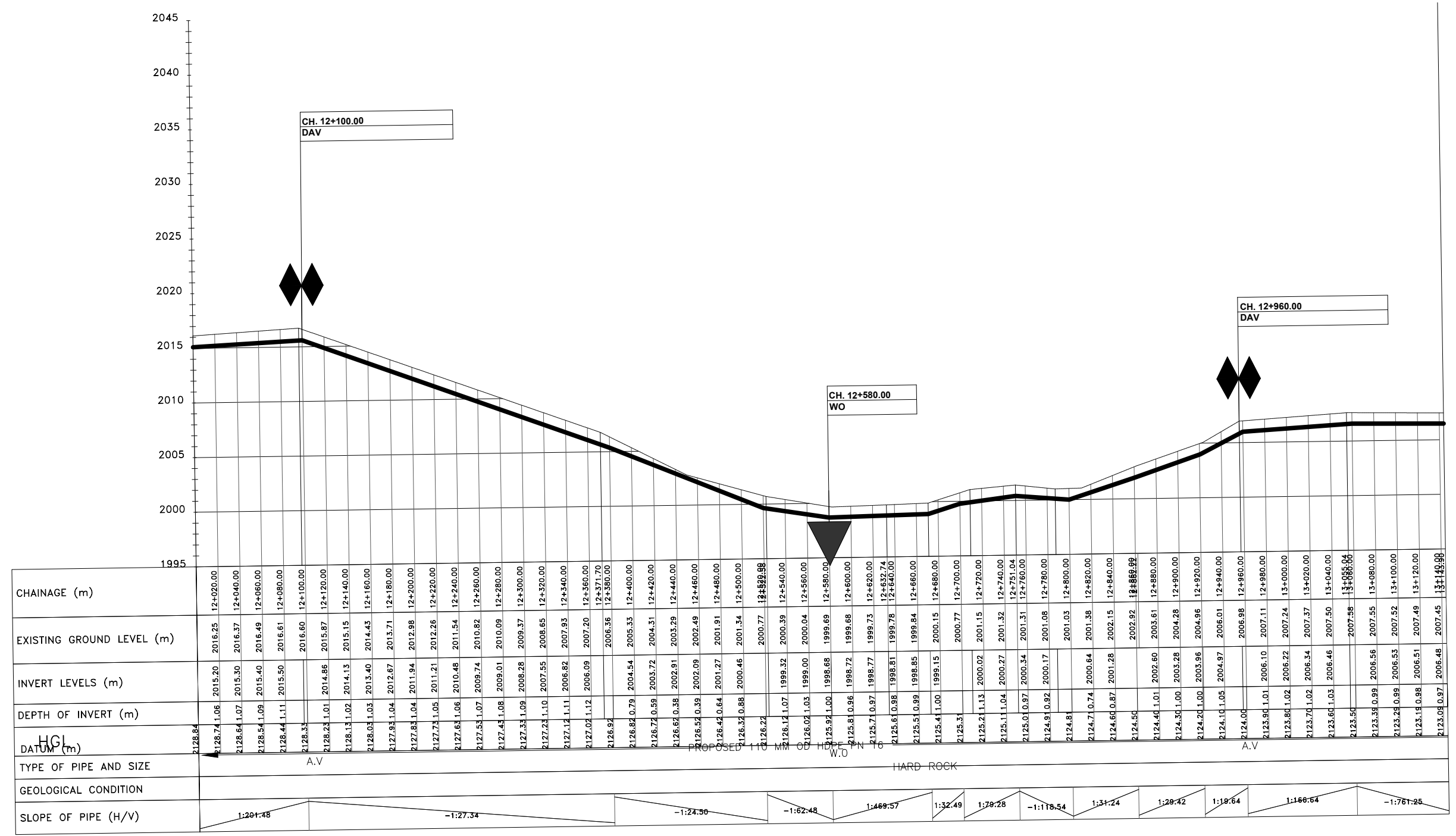
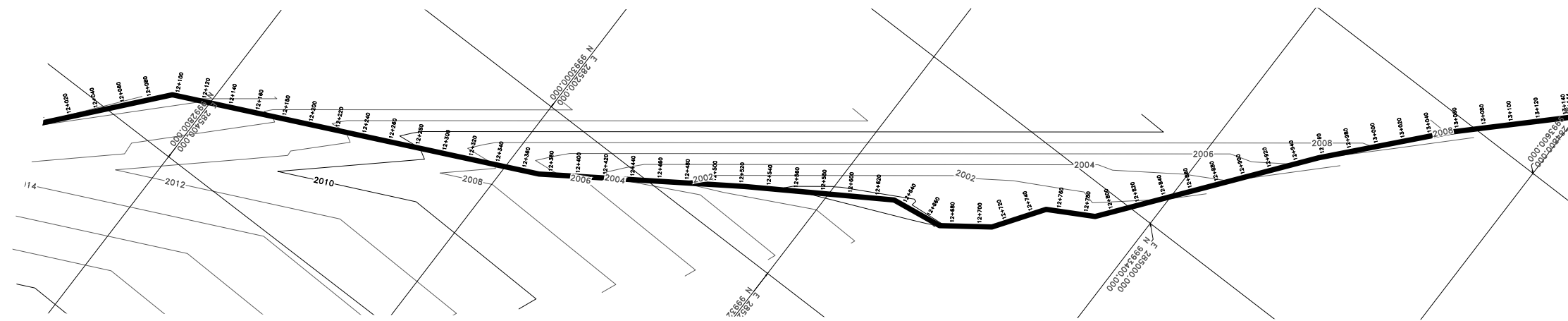
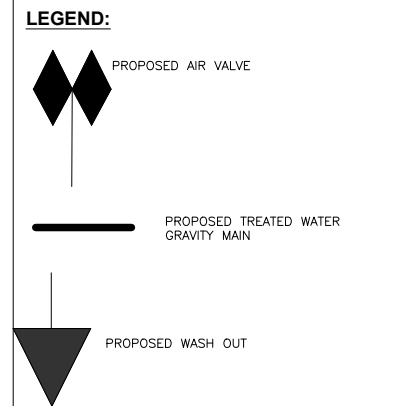
CH. 10+800.00 - 12+000.00
SHEET 10 OF 11

Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H: 1:4000, V: 1:400 Date: MAY 2023
 DRG No. **GUR/RWM/10**



LONGITUDINAL SECTION

- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
 2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
 3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
 4. MINIMUM PIPELINE SLOPES TO BE 1:500
 5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS



ISSUED FOR CONSTRUCTION

REVISIONS	SIGN	DATE	APPROVED
CHECKED	VJK	15/01	
CHECKED			
CHECKED			
CHECKED			

EMPLOYER:
 THE CHIEF EXECUTIVE OFFICER
 TANA WATER SERVICES BOARD
 P.O BOX 1292 - 10100,
 NYERI, KENYA

ENGINEER:
 CHIEF MANAGER TECHNICAL
 SERVICES
 TANA WATER WORKS
 DEVELOPMENT AGENCY
 P.O BOX 1292 - 10100,
 NYERI, KENYA

PROJECT TITLE:
 REHABILITATION AND EXTENSION OF
 GURAGA WATER PROJECT

DRAWING TITLE:
 TREATED WATER GRAVITY MAIN -
 PLAN & LONGITUDINAL SECTION

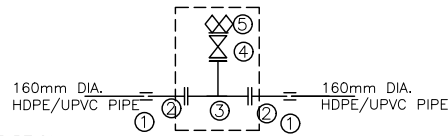
CH. 12+000.00 - 13+143.00
SHEET 11 OF 11

Designed by: K.N.G Drawn by: A.M.M
 Checked by: J.M.M Approved by: D.N.M
 Scale: H: 1:4000, V: 1:400 Date: MAY 2023
 DRG No. **GUR/RWM/10**



LONGITUDINAL SECTION

DAV ARRANGEMENT(160MM PIPELINE)

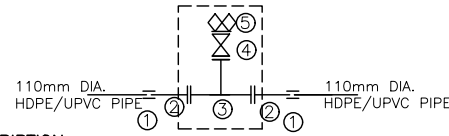


DESCRIPTION

5 Nos. REQUIRED

- ① 2 Nos. 160X150mm DIA. V.J. STEPPED COUPLING
- ② 2 Nos. 150mm DIA. FLANGED SPIGOT FERROUS PIPE 1200mm LONG
- ③ 1 Nos. 150x80mm DIA. ALL FLANGED FERROUS TEE
- ④ 1 No. 80mm DIA. ALL FLANGED GATE VALVE
- ⑤ 1 No. 80mm DIA. DOUBLE ORIFICE AIR VALVE

DAV ARRANGEMENT(110MM PIPELINE)



DESCRIPTION

8 Nos. REQUIRED

- ① 2 Nos. 110X100mm DIA. V.J. STEPPED COUPLING
- ② 2 Nos. 100mm DIA. FLANGED SPIGOT FERROUS PIPE 1200mm LONG
- ③ 1 Nos. 100x80mm DIA. ALL FLANGED FERROUS TEE
- ④ 1 No. 80mm DIA. ALL FLANGED GATE VALVE
- ⑤ 1 No. 80mm DIA. DOUBLE ORIFICE AIR VALVE

SV ARRANGEMENT(160MM PIPELINE)

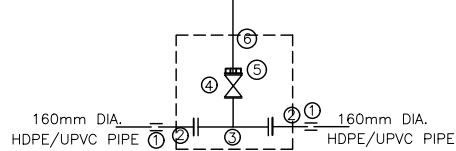


DESCRIPTION

1 No. REQUIRED

- ① 2 Nos. 160X150mm DIA. V.J. STEPPED COUPLING
- ② 2 Nos. 150mm DIA. FLANGED SPIGOT FERROUS PIPE 1200mm LONG
- ③ 1 No. 150mm DIA. ALL FLANGED GATE VALVE

WO ARRANGEMENT(160MM PIPELINE)

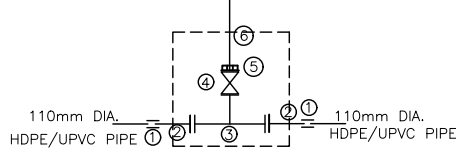


DESCRIPTION

5 No. REQUIRED

- ① 2 Nos. 160mm DIA. V.J. STEPPED COUPLING
- ② 2 Nos. 150mm DIA. FLANGED SPIGOT FERROUS PIPE 1200mm LONG
- ③ 1 Nos. 150x80mm DIA. ALL FLANGED FERROUS INVERTED TEE
- ④ 1 No. 80mm DIA. ALL FLANGED GATE VALVE
- ⑤ 1 No. 80mm DIA. V.J FLANGE ADAPTOR
- ⑥ 1 No. 80mm DIA. PLAIN ENDED uPVC PIPE TO DRAIN (CUT TO SUIT)

WO ARRANGEMENT(110MM PIPELINE)

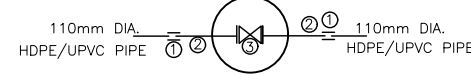


DESCRIPTION

3 No. REQUIRED

- ① 2 Nos. 110mm DIA. V.J. STEPPED COUPLING
- ② 2 Nos. 100mm DIA. FLANGED SPIGOT FERROUS PIPE 1200mm LONG
- ③ 1 Nos. 100x80mm DIA. ALL FLANGED FERROUS INVERTED TEE
- ④ 1 No. 80mm DIA. ALL FLANGED GATE VALVE
- ⑤ 1 No. 80mm DIA. V.J FLANGE ADAPTOR
- ⑥ 1 No. 80mm DIA. PLAIN ENDED uPVC PIPE TO DRAIN (CUT TO SUIT)

WO ARRANGEMENT(110MM PIPELINE)



DESCRIPTION

4 No. REQUIRED

- ① 2 Nos. 110X100mm DIA. V.J. STEPPED COUPLING
- ② 2 Nos. 100mm DIA. FLANGED SPIGOT FERROUS PIPE 1200mm LONG
- ③ 1 No. 100mm DIA. ALL FLANGED GATE VALVE

NOTES:

1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
2. GRID VALUES ARE IN METERS AT 200 METER INTERVALS
3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
4. MINIMUM PIPELINE SLOPES TO BE 1:500
5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS
6. FOR FITTING DETAILS AT 1+220.00, 1+560.00, 1+615.00, 1+840.00 & 1+860.00, SEE DRG. NO. M407/CG/TWK/03

LEGEND:

- ROAD (TARMAC)
- ROAD / TRACK (EARTH / MURRAM)
- FENCE / HEDGE
- CONTOURS
- ELECTRIC POST
- CULVERT
- GATE
- TEMPORARY STRUCTURES
- BUILDINGS
- KeNHA / KeRRA ROAD BEACON
- PROPOSED TREATED WATER GRAVITY MAIN
- TP10 TRAVERSE POINT & No.
- TRIAL HOLE
- HORIZONTAL BEND (H) OR VERTICAL BEND (V) WITH ANGLE INDICATED
- RIVER/STREAM
- V.J. VIKING JOHNSON
- GV GATE VALVE
- SV-01 SECTIONAL VALVE & No.
- WO-01 WASHOUT VALVE & No.
- SAV-01 AIR VALVE & No.
- WM WATER METER
- PROPOSED MASONRY CHAMBER
- PROPOSED VALVE BOX
- PIPELINE GRADIENT WITH SLOPE DIRECTION (SLOPE MIN. OR 1 IN n)

ISSUED FOR CONSTRUCTION

REVISIONS		SIGN	DATE	APPROVED
D	INVERTS AT ROAD CROSSING	BY	VJK	15/01
		CHECKED		
		BY		
		CHECKED		
		BY		

CLIENT:

THE CHIEF EXECUTIVE OFFICER
TANA WATER SERVICES BOARD
 P.O BOX 1292 - 10100,
 NYERI, KENYA

CONSULTING ENGINEERS:

MANGAT I.B PATEL(MIBP) LIMITED
 P.O BOX 48674,00100-GPO,
 NAIROBI, KENYA
 E-MAIL: mibp.nairobi@mibpp.com
 TEL: +254-2-2710500

PROJECT TITLE:
KENYA TOWNS SUSTAINABLE WATER SUPPLY AND SANITATION PROGRAM

CONTRACT No.TWSB/ADB/004/2017-2018
CONSTRUCTION OF CHUKA AND CHOGORIA WATER SUPPLY AND SANITATION PROJECT

LOT 2: CHOGORIA WATER SUPPLY

DRAWING TITLE:
TREATED WATER GRAVITY MAIN - KAIRUNI TANK LINE
PLAN & LONGITUDINAL SECTION FITTINGS DETAILS
SHEET 6 OF 6

Designed by: A.M.I Drawn by: V.G.K

Checked by: N.J.N Approved by: N.J.N

Scale: H- 1:4000, V- 1:400 Date: JAN 2021

DRG No. **M407/CG/TWK/06** REV

