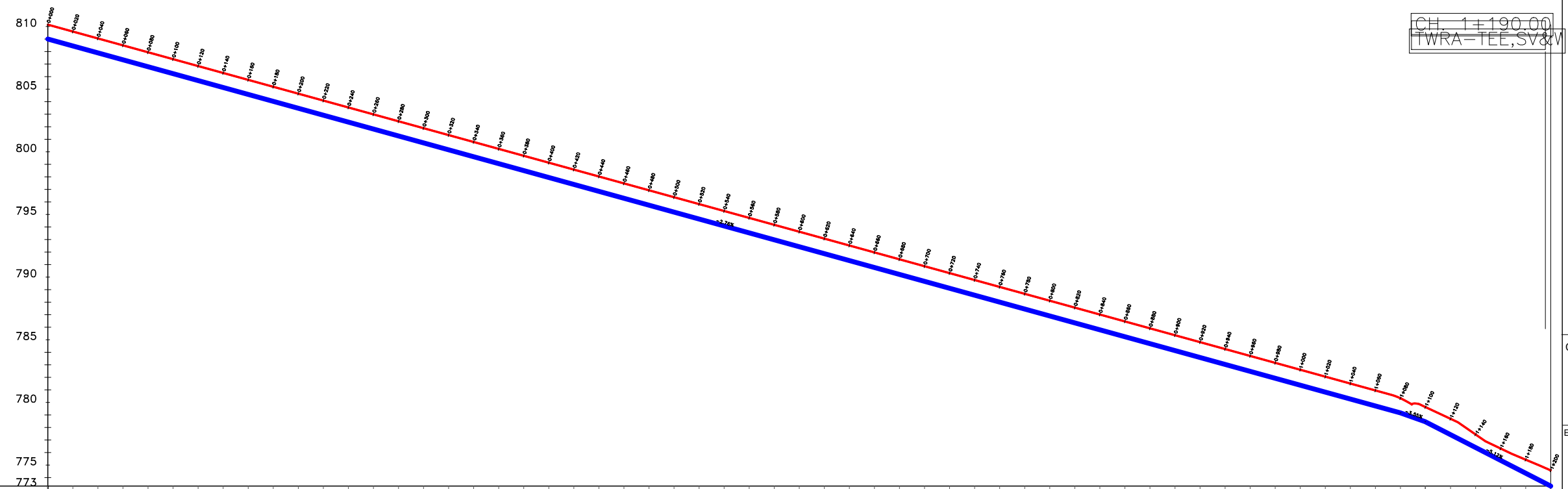


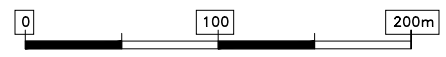
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - 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
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	FLOW PARAMETERS DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION
0+000.00	810.15	809.00	1.15			
0+020.00	809.60	808.45	1.15			
0+040.00	809.05	807.89	1.15			
0+060.00	808.50	807.34	1.15			
0+080.00	807.94	806.79	1.15			
0+100.00	807.39	806.24	1.16			
0+120.00	806.84	805.68	1.16			
0+140.00	806.29	805.13	1.16			
0+160.00	805.74	804.58	1.16			
0+180.00	805.19	804.03	1.16			
0+200.00	804.64	803.47	1.17			
0+220.00	804.09	802.92	1.17			
0+240.00	803.54	802.37	1.17			
0+260.00	802.99	801.82	1.17			
0+280.00	802.44	801.26	1.17			
0+300.00	801.89	800.71	1.17			
0+320.00	801.33	800.16	1.18			
0+340.00	800.78	799.61	1.18			
0+360.00	800.23	799.05	1.18			
0+380.00	799.68	798.50	1.18			
0+400.00	799.13	797.95	1.18			
0+420.00	798.58	797.40	1.18			
0+440.00	798.03	796.84	1.19			
0+460.00	797.48	796.29	1.19			
0+480.00	796.93	795.74	1.19			
0+500.00	796.38	795.19	1.19			
0+520.00	795.83	794.63	1.19			
0+540.00	795.28	794.08	1.19			
0+560.00	794.72	793.53	1.20			
0+580.00	794.17	792.98	1.20			
0+600.00	793.62	792.42	1.20			
0+620.00	793.07	791.87	1.20			
0+640.00	792.52	791.32	1.20			
0+660.00	791.97	790.77	1.20			
0+680.00	791.42	790.21	1.21			
0+700.00	790.87	789.66	1.21			
0+720.00	790.32	789.11	1.21			
0+740.00	789.77	788.56	1.21			
0+760.00	789.22	788.00	1.21			
0+780.00	788.67	787.45	1.21			
0+800.00	788.11	786.90	1.22			
0+820.00	787.56	786.35	1.22			
0+840.00	787.01	785.79	1.22			
0+860.00	786.46	785.24	1.22			
0+880.00	785.91	784.69	1.22			
0+900.00	785.36	784.14	1.22			
0+920.00	784.81	783.58	1.23			
0+940.00	784.26	783.03	1.23			
0+960.00	783.71	782.48	1.23			
0+980.00	783.16	781.93	1.23			
1+000.00	782.61	781.37	1.23			
1+020.00	782.06	780.82	1.23			
1+040.00	781.50	780.27	1.24			
1+060.00	780.95	779.72	1.24			
1+080.00	780.33	779.16	1.17			
1+099.69	779.68	778.48	1.18			
1+120.00	778.69	777.42	1.27			
1+140.00	777.44	776.40	1.04			
1+160.00	776.32	775.37	0.95			
1+180.00	775.43	774.35	1.08			
1+200.00	774.58	773.32	1.25			

**LONGITUDINAL SECTION**



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

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

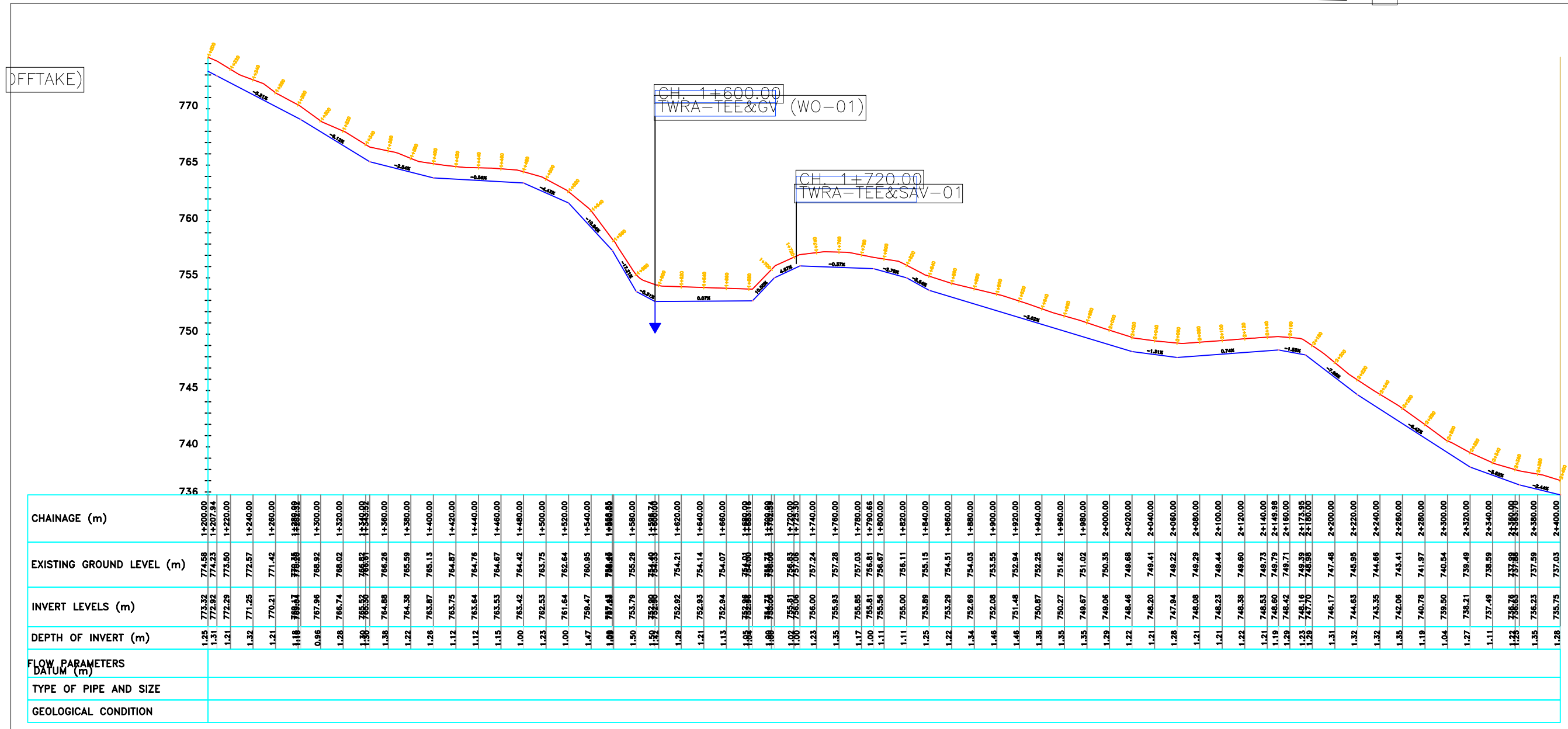
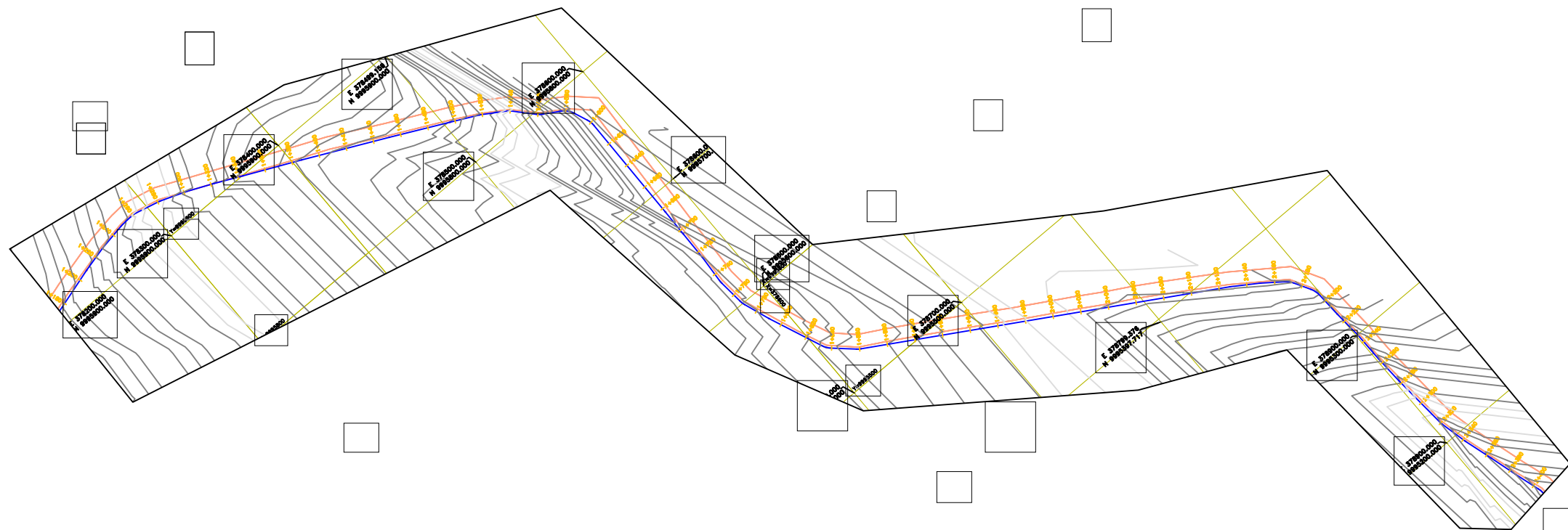
PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 0+000.00 - 1+200.00  
SHEET 1 OF 10**

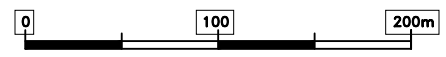
Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022

- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - 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
  - PROPOSED WATER LINE



**LONGITUDINAL SECTION**



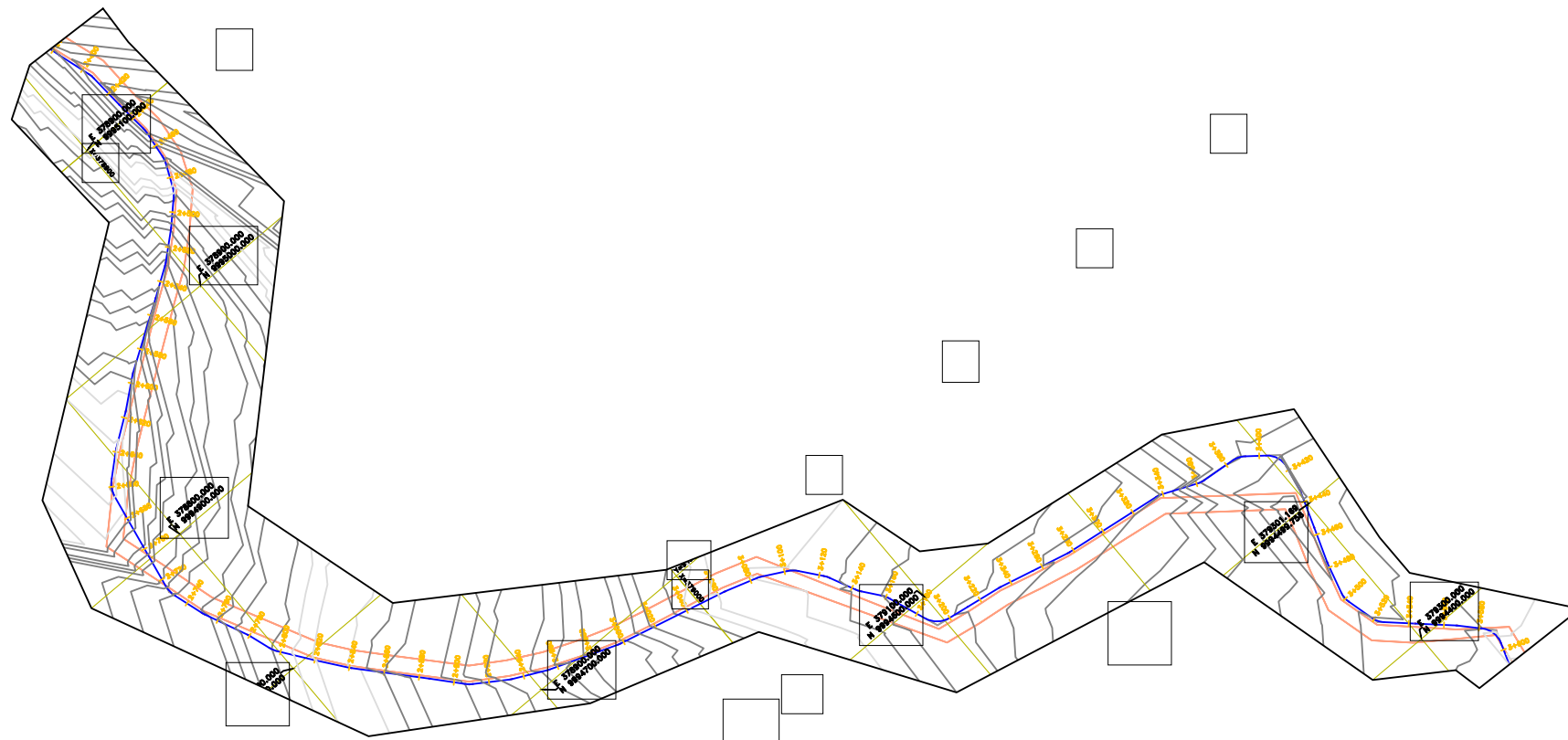
CLIENT: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

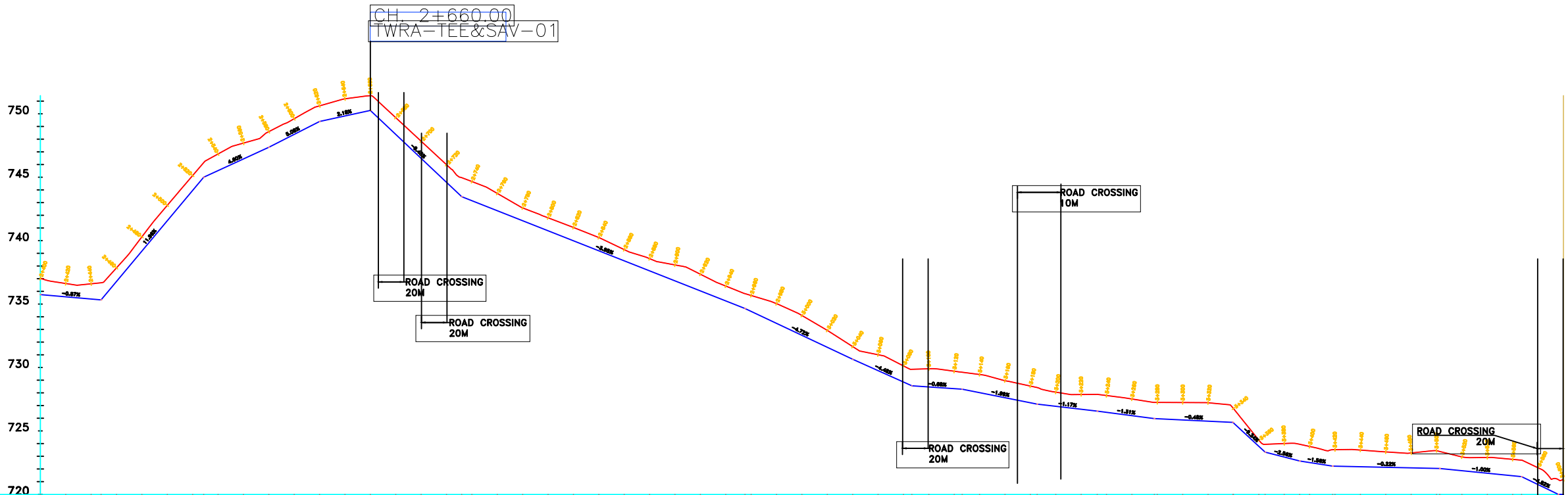
DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 1+200.00 - 2+400.00  
SHEET 2 OF 10**

Designed by: A.M.M      Drawn by: A.M.M  
Checked by: D.N.W      Approved by: D.N.W  
Scale: H- 1:4000, V- 1:400      Date: MAY 2022  
DRG No. **TWRA/02**



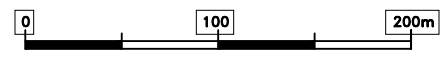
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - 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
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)
2+400.00	737.05	735.75	1.28
2+420.00	736.62	735.57	1.05
2+440.00	736.60	735.40	1.20
2+460.00	737.85	736.78	1.07
2+480.00	740.30	739.18	1.13
2+500.00	742.78	741.57	1.21
2+520.00	745.13	743.96	1.17
2+540.00	746.15	745.00	1.15
2+560.00	746.83	745.52	1.31
2+580.00	747.69	746.44	1.25
2+600.00	748.59	747.36	1.23
2+620.00	749.61	748.38	1.24
2+640.00	750.63	749.39	1.23
2+660.00	751.18	749.83	1.35
2+680.00	751.43	750.28	1.16
2+700.00	749.69	748.38	1.32
2+720.00	747.84	746.49	1.35
2+740.00	745.99	744.60	1.39
2+760.00	744.97	743.47	1.50
2+780.00	744.66	743.15	1.51
2+800.00	743.72	742.36	1.37
2+820.00	742.58	741.57	1.01
2+840.00	741.80	740.78	1.02
2+860.00	741.04	739.99	1.05
2+880.00	740.24	739.20	1.05
2+900.00	739.29	738.41	0.89
2+920.00	738.58	737.62	0.86
2+940.00	738.08	736.83	1.26
2+960.00	737.35	736.04	1.31
2+980.00	736.42	735.25	1.17
3+000.00	735.03	733.48	1.56
3+020.00	734.10	732.53	1.57
3+040.00	732.93	731.59	1.34
3+060.00	731.65	730.65	1.00
3+080.00	731.01	729.75	1.25
3+100.00	730.12	728.86	1.27
3+120.00	729.86	728.56	1.30
3+140.00	729.90	728.47	1.43
3+160.00	729.71	728.33	1.37
3+180.00	728.64	727.28	1.34
3+200.00	727.79	726.46	1.33
3+220.00	727.52	726.20	1.31
3+240.00	727.24	725.96	1.28
3+260.00	727.22	725.77	1.45
3+280.00	726.82	725.63	1.18
3+300.00	724.00	722.94	1.06
3+320.00	723.95	722.63	1.32
3+340.00	723.77	722.51	1.27
3+360.00	723.26	722.09	1.17
3+380.00	722.48	721.46	1.02
3+400.00	722.69	721.39	1.30
3+420.00	722.09	720.77	1.33
3+440.00	721.19	720.00	1.19

**LONGITUDINAL SECTION**



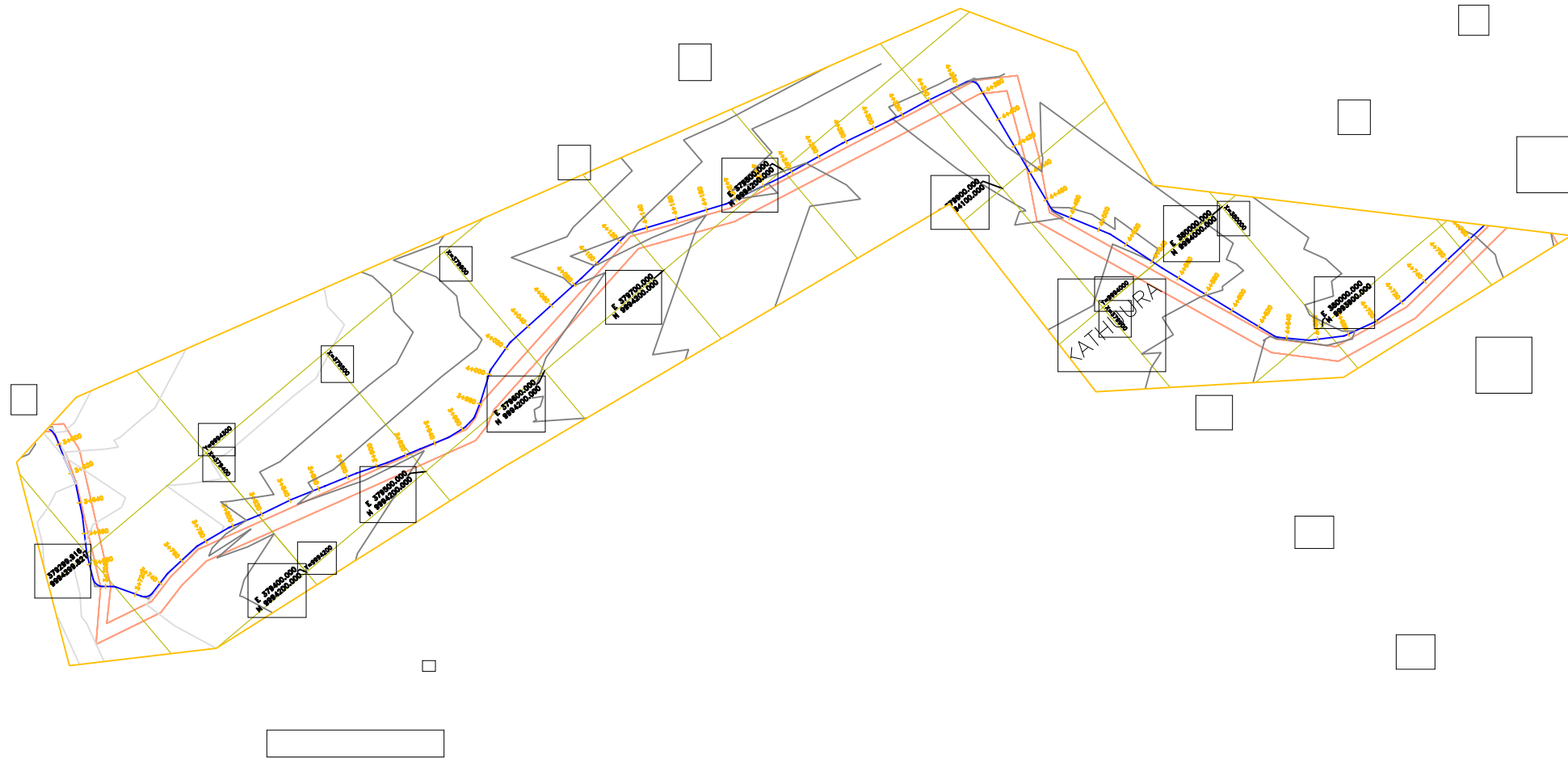
CLIENT: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

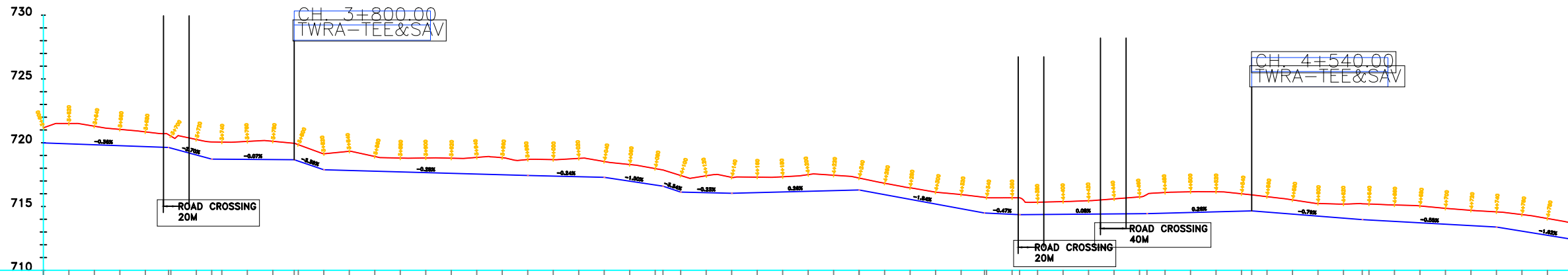
DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 2+400.00 - 3+600.00  
SHEET 3 OF 10**

Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
DRG No. TWRA/03	REV



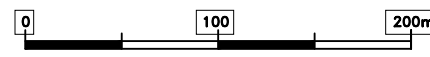
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - 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
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)
3+600.00	721.17	719.99	1.18
3+620.00	721.51	719.91	1.60
3+640.00	721.29	719.84	1.46
3+660.00	721.05	719.77	1.28
3+680.00	720.85	719.69	1.16
3+700.00	719.62	719.62	0.00
3+720.00	720.25	719.04	1.22
3+740.00	720.07	718.71	1.35
3+760.00	720.10	718.69	1.41
3+780.00	720.11	718.68	1.43
3+800.00	719.85	718.62	1.23
3+820.00	719.13	717.88	1.25
3+840.00	719.33	717.82	1.50
3+860.00	718.92	717.77	1.15
3+880.00	718.80	717.71	1.09
3+900.00	718.80	717.66	1.15
3+920.00	718.79	717.60	1.19
3+940.00	718.85	717.54	1.30
3+960.00	718.85	717.49	1.34
3+980.00	718.68	717.43	1.25
4+000.00	718.67	717.38	1.29
4+020.00	718.77	717.34	1.44
4+040.00	718.55	717.29	1.24
4+060.00	718.29	716.99	1.30
4+080.00	717.86	716.69	1.29
4+100.00	717.43	716.13	1.30
4+120.00	717.41	716.08	1.33
4+140.00	717.28	716.04	1.25
4+160.00	717.30	716.09	1.21
4+180.00	717.33	716.14	1.19
4+200.00	717.50	716.19	1.31
4+220.00	717.45	716.24	1.21
4+240.00	717.23	716.30	0.94
4+260.00	716.82	715.93	0.90
4+280.00	716.46	715.56	0.90
4+300.00	716.12	715.19	0.93
4+320.00	715.94	714.83	1.11
4+340.00	715.78	714.68	1.23
4+360.00	715.66	714.39	1.29
4+380.00	715.59	714.36	1.32
4+400.00	715.34	714.37	0.98
4+420.00	715.38	714.39	1.00
4+440.00	715.45	714.40	1.05
4+460.00	715.60	714.42	1.18
4+480.00	715.75	714.44	1.32
4+500.00	715.94	714.44	1.50
4+520.00	716.10	714.48	1.62
4+540.00	716.15	714.53	1.62
4+560.00	716.15	714.56	1.57
4+580.00	716.00	714.63	1.36
4+600.00	715.91	714.65	1.26
4+620.00	715.77	714.56	1.21
4+640.00	715.52	714.40	1.12
4+660.00	715.24	714.24	0.99
4+680.00	715.04	714.09	1.10
4+700.00	714.86	713.97	1.24
4+720.00	714.70	713.94	1.25
4+740.00	714.58	713.83	1.29
4+760.00	714.37	713.72	1.32
4+780.00	714.06	713.61	1.25
4+800.00	713.70	713.50	1.20
4+820.00	713.58	713.39	1.19
4+840.00	713.37	713.07	1.30
4+860.00	714.06	712.74	1.32
4+880.00	713.70	712.42	1.28

**LONGITUDINAL SECTION**



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

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

PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

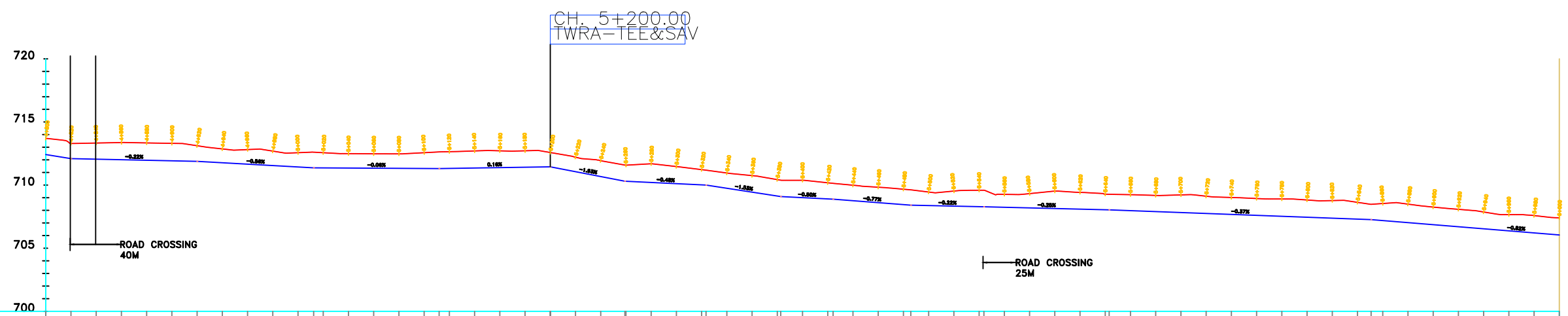
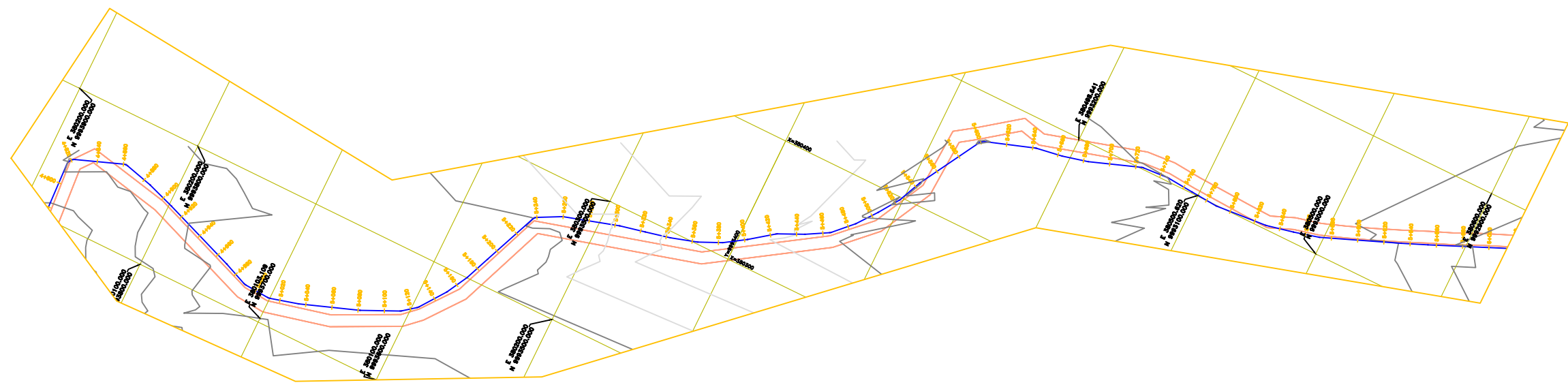
DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 3+600.00 - 4+800.00  
SHEET 4 OF 10**

Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
DRG No. TWRA/04	REV



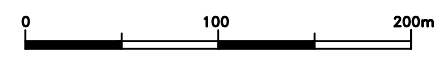
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - 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
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	FLOW PARAMETERS DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION
1.28 712.42	713.70	712.42	1.28			
1.20 712.10	713.30	712.10	1.20			
1.28 712.05	713.33	712.05	1.28			
1.36 712.01	713.37	712.01	1.36			
1.37 711.97	713.34	711.97	1.37			
1.38 711.92	713.31	711.92	1.38			
1.24 711.88	713.12	711.88	1.24			
1.10 711.77	712.86	711.77	1.10			
1.15 711.66	712.81	711.66	1.15			
1.15 711.55	712.69	711.55	1.15			
1.13 711.43	712.56	711.43	1.13			
1.24 711.37	712.61	711.37	1.24			
1.20 711.36	712.56	711.36	1.20			
1.14 711.35	712.49	711.35	1.14			
1.14 711.34	712.48	711.34	1.14			
1.15 711.33	712.47	711.33	1.15			
1.25 711.31	712.56	711.31	1.25			
1.32 711.31	712.63	711.31	1.32			
1.33 711.32	712.65	711.32	1.33			
1.35 711.35	712.70	711.35	1.35			
1.33 711.36	712.71	711.36	1.33			
1.30 711.41	712.72	711.41	1.30			
1.13 711.45	712.58	711.45	1.13			
1.15 711.06	712.21	711.06	1.15			
1.25 710.68	711.93	710.68	1.25			
1.28 710.60	711.88	710.60	1.28			
1.48 710.21	711.69	710.21	1.48			
1.36 710.11	711.47	710.11	1.36			
1.28 710.00	711.42	710.00	1.28			
1.21 709.75	710.96	709.75	1.21			
1.31 709.44	710.75	709.44	1.31			
1.29 709.43	710.43	709.43	1.29			
1.37 709.00	710.38	709.00	1.37			
1.22 708.61	709.83	708.61	1.22			
1.22 708.45	709.67	708.45	1.22			
1.21 708.41	709.62	708.41	1.21			
1.07 708.38	709.45	708.38	1.07			
1.19 708.33	709.53	708.33	1.19			
1.30 708.28	709.59	708.28	1.30			
1.02 708.24	709.27	708.24	1.02			
1.13 708.19	709.32	708.19	1.13			
1.38 708.14	709.52	708.14	1.38			
1.33 708.09	709.42	708.09	1.33			
1.24 708.04	709.29	708.04	1.24			
1.27 707.97	709.24	707.97	1.27			
1.28 707.90	709.18	707.90	1.28			
1.40 707.82	709.22	707.82	1.40			
1.37 707.75	709.12	707.75	1.37			
1.34 707.68	709.02	707.68	1.34			
1.33 707.60	708.93	707.60	1.33			
1.37 707.53	708.90	707.53	1.37			
1.37 707.45	708.82	707.45	1.37			
1.39 707.38	708.77	707.38	1.39			
1.33 707.30	708.63	707.30	1.33			
1.21 707.26	708.46	707.26	1.21			
1.35 707.19	708.54	707.19	1.35			
1.47 707.03	708.49	707.03	1.47			
1.39 706.86	708.26	706.86	1.39			
1.38 706.70	708.08	706.70	1.38			
1.33 706.54	707.87	706.54	1.33			
1.28 706.37	707.66	706.37	1.28			
1.37 706.21	707.59	706.21	1.37			
1.36 706.05	707.41	706.05	1.36			

**LONGITUDINAL SECTION**



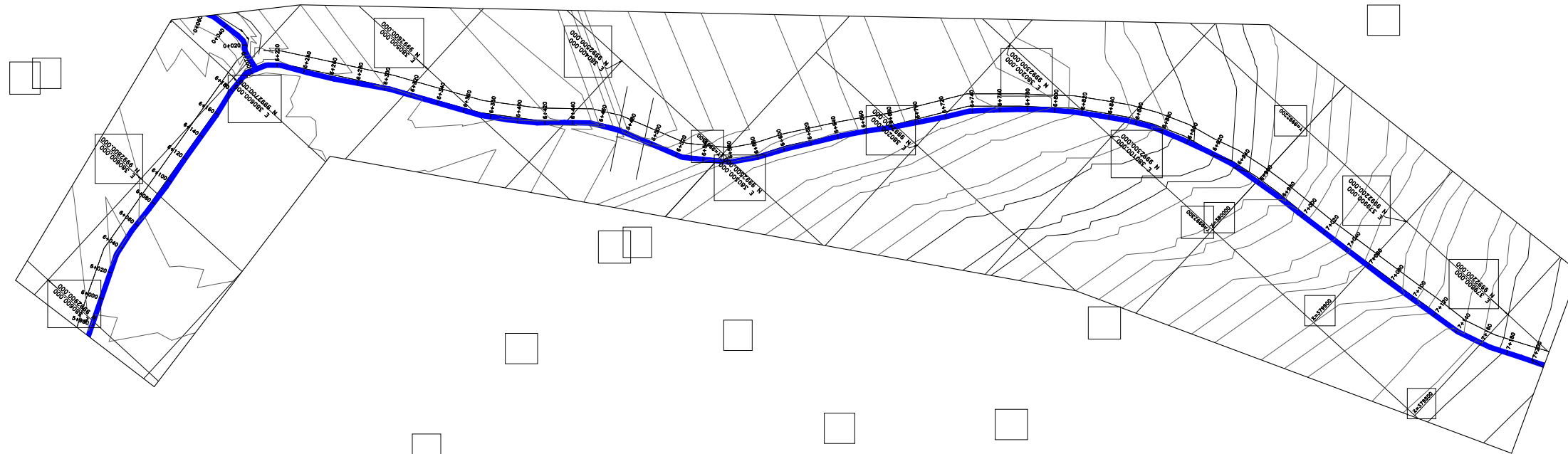
CLIENT: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

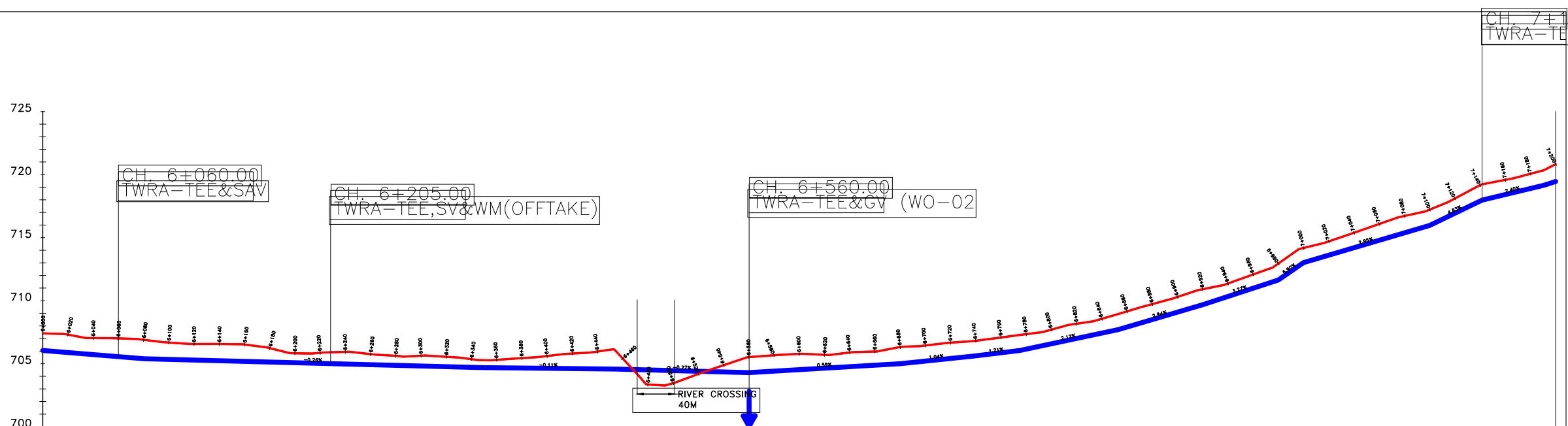
DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 4+800.00 - 6+000.00  
SHEET 5 OF 10**

Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
DRG No. TWRA/05	REV



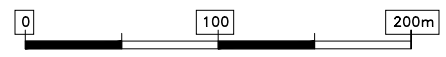
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - 1480 CONTOURS
  - 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
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)
6+000.00	707.41	706.05	1.36
6+020.00	707.51	705.88	1.42
6+040.00	707.03	705.72	1.31
6+060.00	707.01	705.56	1.45
6+080.00	706.89	705.49	1.50
6+100.00	706.68	705.34	1.34
6+120.00	706.56	705.29	1.27
6+140.00	706.56	705.24	1.33
6+160.00	706.52	705.18	1.34
6+180.00	706.23	705.13	1.10
6+200.00	705.83	705.08	0.75
6+220.00	705.87	705.03	0.84
6+240.00	705.94	704.97	0.97
6+260.00	705.76	704.92	0.84
6+280.00	705.63	704.87	0.76
6+300.00	705.63	704.82	0.82
6+320.00	705.55	704.76	0.78
6+340.00	705.36	704.71	0.65
6+348.04	705.28	704.69	0.59
6+360.00	705.30	704.68	0.62
6+380.00	705.44	704.66	0.78
6+400.00	705.61	704.63	0.97
6+420.00	705.81	704.61	1.19
6+440.00	705.97	704.59	1.38
6+453.66	706.08	704.58	1.50
6+460.00	705.41	704.55	0.86
6+480.00	703.35	704.51	-1.16
6+500.00	703.46	704.45	-0.99
6+520.00	704.19	704.40	-0.21
6+540.00	704.88	704.35	0.53
6+560.00	705.55	704.29	1.24
6+580.00	705.67	704.41	1.26
6+600.00	705.78	704.53	1.25
6+620.00	705.71	704.65	1.06
6+640.00	705.89	704.76	1.12
6+660.00	705.97	704.88	1.08
6+680.00	706.32	705.00	1.32
6+700.00	706.45	705.21	1.24
6+720.00	706.67	705.42	1.25
6+740.00	706.82	705.68	1.18
6+760.00	707.08	705.87	1.21
6+774.87	707.54	706.05	1.49
6+780.00	707.54	706.16	1.38
6+800.00	707.70	706.58	1.12
6+820.00	708.17	707.00	1.17
6+840.00	708.56	707.43	1.13
6+852.81	708.93	707.70	1.23
6+860.00	709.15	707.91	1.24
6+880.00	709.73	708.50	1.23
6+900.00	710.30	709.09	1.21
6+920.00	710.91	709.68	1.23
6+940.00	711.56	710.33	1.03
6+960.00	712.08	710.99	1.09
6+980.00	712.94	711.64	1.30
7+000.00	714.18	713.02	1.16
7+020.00	714.70	713.61	1.10
7+040.00	715.38	714.20	1.19
7+060.00	716.08	714.79	1.29
7+080.00	716.71	715.38	1.34
7+100.00	717.22	715.97	1.25
7+120.00	718.10	716.93	1.17
7+140.00	718.43	717.89	1.05
7+160.00	719.58	718.42	1.17
7+180.00	720.06	718.90	1.17
7+190.67	720.55	719.15	1.19
7+200.00	720.83	719.46	1.38

**LONGITUDINAL SECTION**



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

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

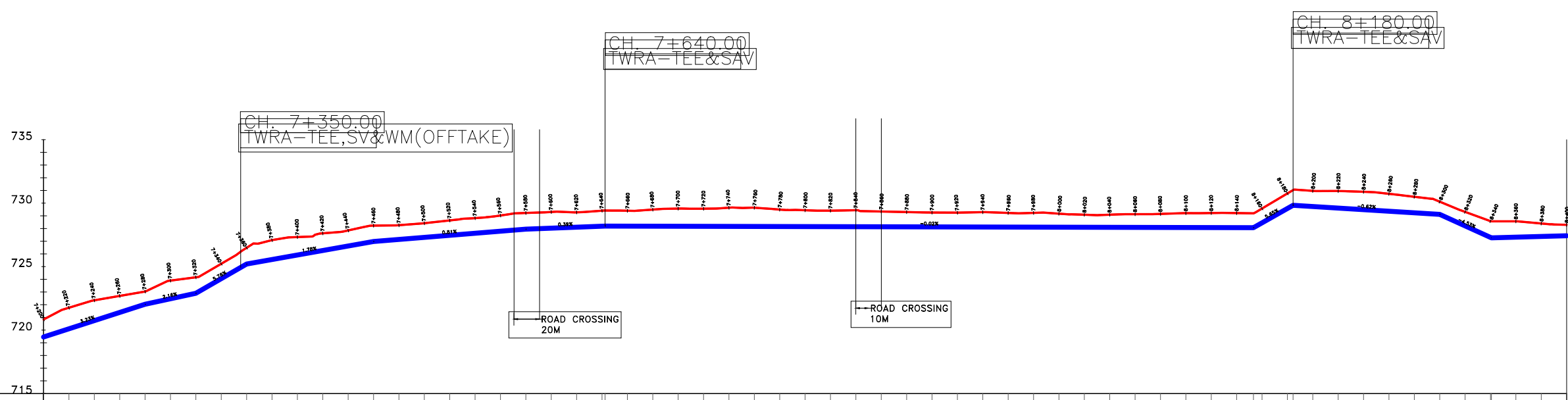
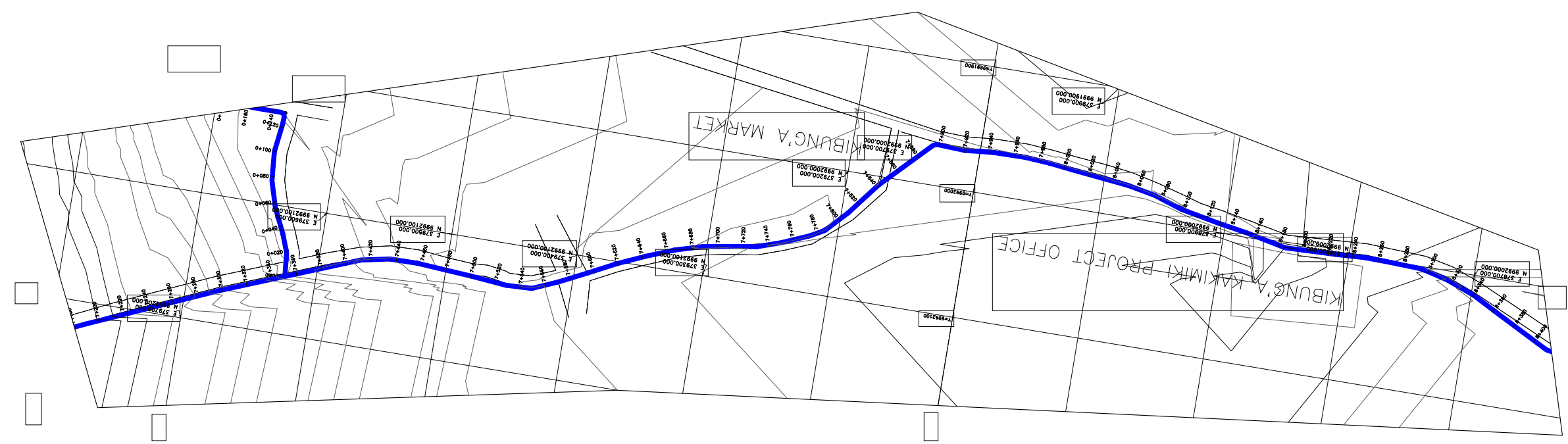
PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 6+000.00 - 7+200.00  
SHEET 6 OF 10**

Designed by: A.M.M      Drawn by: A.M.M  
Checked by: D.N.W      Approved by: D.N.W  
Scale: H- 1:4000, V- 1:400      Date: MAY 2022  
DRG No. **TWRA/06**

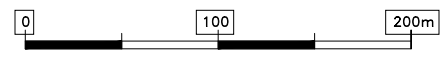
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - 1:480 CONTOURS
  - RIVER/STREAM
  - VIKING JOHNSON
  - GATE VALVE
  - SECTIONAL VALVE & No.
  - WASHOUT VALVE & No.
  - AIR VALVE & No.
  - WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	FLOW PARAMETERS DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION
720.85	720.85	719.46	1.38			
722.00	721.76	720.10	1.66			
724.00	722.35	720.75	1.60			
726.00	722.69	721.39	1.30			
728.00	723.04	722.04	1.00			
730.00	723.90	722.47	1.43			
732.00	724.16	722.90	1.26			
734.00	725.22	724.05	1.17			
736.00	726.48	725.20	1.28			
738.00	727.09	725.56	1.53			
740.00	727.33	725.91	1.41			
742.00	727.62	726.27	1.35			
744.00	727.85	726.62	1.23			
746.00	728.23	726.88	1.25			
748.00	728.26	727.14	1.12			
750.00	728.42	727.30	1.12			
752.00	728.64	727.47	1.17			
754.00	728.82	727.63	1.19			
756.00	729.03	727.79	1.24			
758.00	729.23	727.95	1.28			
760.00	729.30	728.03	1.28			
762.00	729.28	728.11	1.17			
764.00	728.49	728.18	1.23			
766.00	729.40	728.19	1.21			
768.00	729.49	728.18	1.31			
770.00	729.57	728.18	1.39			
772.00	729.56	728.17	1.39			
774.00	729.64	728.17	1.47			
776.00	729.64	728.16	1.48			
778.00	729.49	728.16	1.33			
780.00	729.44	728.15	1.29			
782.00	729.41	728.15	1.26			
784.00	729.44	728.14	1.30			
786.00	729.34	728.14	1.20			
788.00	729.30	728.13	1.16			
790.00	729.26	728.13	1.13			
792.00	729.25	728.12	1.12			
794.00	729.29	728.12	1.17			
796.00	729.23	728.11	1.11			
798.00	729.23	728.11	1.12			
800.00	729.17	728.10	1.07			
802.00	729.09	728.10	0.99			
804.00	729.09	728.10	0.99			
806.00	729.13	728.09	1.04			
808.00	729.15	728.09	1.07			
810.00	729.21	728.08	1.13			
812.00	729.22	728.08	1.15			
814.00	729.22	728.07	1.15			
816.00	729.20	728.07	1.13			
818.00	729.58	728.45	1.13			
820.00	730.76	729.88	1.18			
822.00	730.97	729.73	1.23			
824.00	730.96	729.61	1.35			
826.00	730.89	729.49	1.41			
828.00	730.74	729.36	1.37			
830.00	730.50	729.24	1.26			
832.00	730.11	729.11	1.00			
834.00	729.31	728.21	1.10			
836.00	728.57	727.90	1.25			
838.00	728.40	727.38	1.02			
840.00	728.29	727.43	0.86			

**LONGITUDINAL SECTION**



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

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

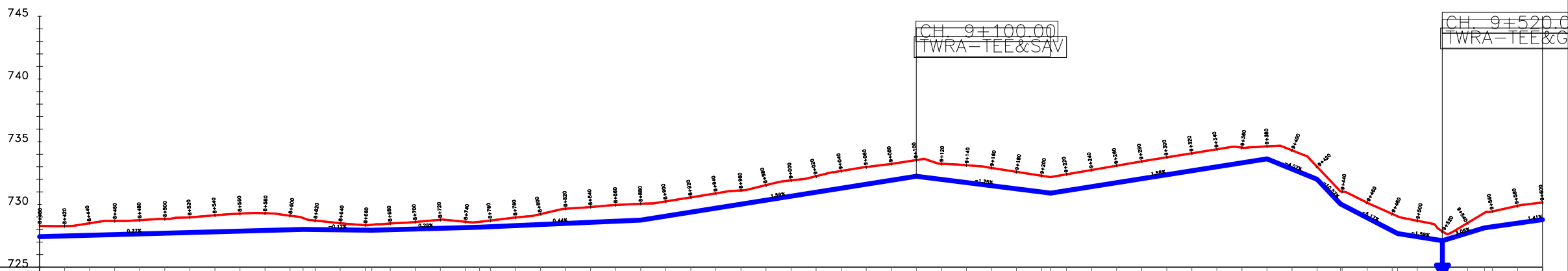
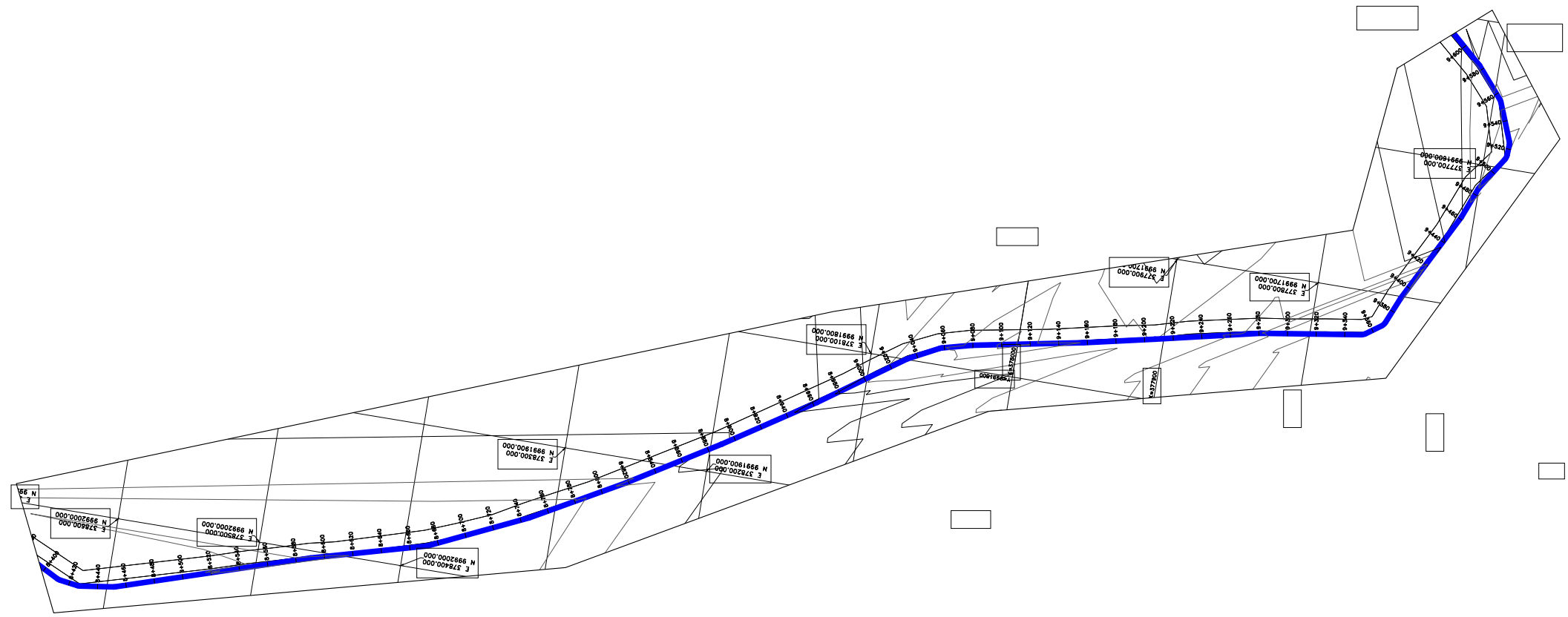
PROJECT TITLE:  
**KIBUNGA KAKIMIKI PIPELINE  
RELOCATION PROJECT**

DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 7+200.00 - 8+400.00  
SHEET 7 OF 10**

Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
<b>DRG No. TWRA/07</b>	REV

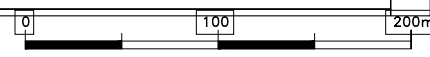
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - RIVER/STREAM
  - VIKING JOHNSON
  - GATE VALVE
  - SECTIONAL VALVE & No.
  - WASHOUT VALVE & No.
  - AIR VALVE & No.
  - WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	FLOW PARAMETERS DATUM (m)	TYPE OF PIPE AND SIZE
8+400.00	728.29	727.43	0.86		
8+420.00	728.28	727.49	0.79		
8+440.00	728.50	727.54	0.96		
8+460.00	728.69	727.60	1.09		
8+480.00	728.75	727.65	1.10		
8+500.00	728.84	727.71	1.14		
8+520.00	728.97	727.76	1.21		
8+540.00	729.13	727.81	1.32		
8+560.00	729.27	727.87	1.40		
8+580.00	729.30	727.92	1.37		
8+600.00	729.10	727.98	1.12		
8+610.38	728.92	728.01	0.91		
8+620.00	728.71	728.00	0.72		
8+640.00	728.50	727.97	0.53		
8+650.00	728.35	727.95	0.40		
8+660.00	728.28	727.93	0.35		
8+680.00	728.48	727.98	0.50		
8+700.00	728.60	728.04	0.56		
8+720.00	728.78	728.10	0.68		
8+740.00	728.62	728.15	0.46		
8+751.29	728.62	728.18	0.43		
8+760.00	728.71	728.22	0.49		
8+780.00	728.96	728.31	0.65		
8+800.00	729.23	728.40	0.83		
8+820.00	729.66	728.49	1.17		
8+840.00	729.80	728.57	1.22		
8+860.00	729.96	728.66	1.29		
8+880.00	730.05	728.75	1.30		
8+900.00	730.24	729.07	1.17		
8+920.00	730.56	729.38	1.18		
8+940.00	730.88	729.70	1.18		
8+960.00	731.12	730.02	1.10		
8+980.00	731.54	730.34	1.20		
9+000.00	731.92	730.66	1.26		
9+020.00	732.25	730.97	1.28		
9+040.00	732.67	731.29	1.38		
9+060.00	732.99	731.61	1.37		
9+080.00	733.23	731.93	1.30		
9+100.00	733.54	732.25	1.29		
9+120.00	733.24	732.00	1.25		
9+140.00	733.13	731.74	1.38		
9+160.00	732.91	731.49	1.42		
9+180.00	732.60	731.24	1.35		
9+200.00	732.28	730.98	1.28		
9+220.00	732.19	730.89	1.28		
9+240.00	732.40	731.10	1.30		
9+260.00	732.74	731.42	1.33		
9+280.00	733.09	731.74	1.35		
9+300.00	733.43	732.05	1.38		
9+320.00	733.76	732.37	1.39		
9+340.00	734.08	732.68	1.39		
9+360.00	734.40	733.00	1.40		
9+380.00	734.63	733.32	1.21		
9+400.00	734.31	732.82	1.49		
9+420.00	733.00	732.00	1.00		
9+440.00	731.04	729.89	1.08		
9+460.00	730.14	728.94	1.20		
9+480.00	729.04	727.98	1.34		
9+500.00	728.70	727.43	1.27		
9+520.00	727.86	727.11	0.74		
9+540.00	728.51	727.72	0.79		
9+560.00	729.32	728.13	1.19		
9+580.00	729.44	728.22	1.22		
9+600.00	729.89	728.50	1.38		
9+620.00	730.16	728.79	1.37		

**LONGITUDINAL SECTION**



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

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

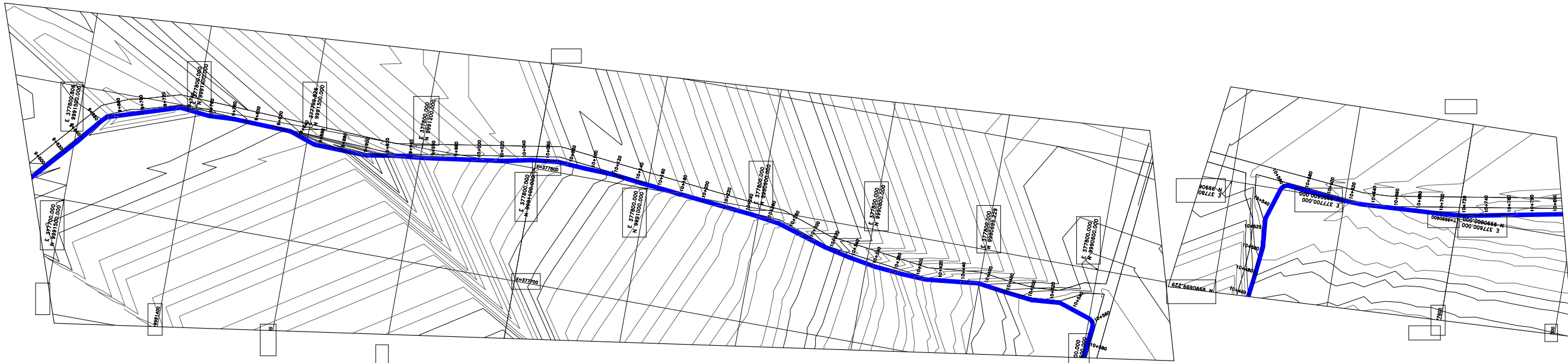
PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION**  
**CH. 8+400.00 - 9+600.00**  
**SHEET 8 OF 10**

Designed by: A.M.M      Drawn by: A.M.M  
Checked by: D.N.W      Approved by: D.N.W  
Scale: H- 1:4000, V- 1:400      Date: MAY 2022

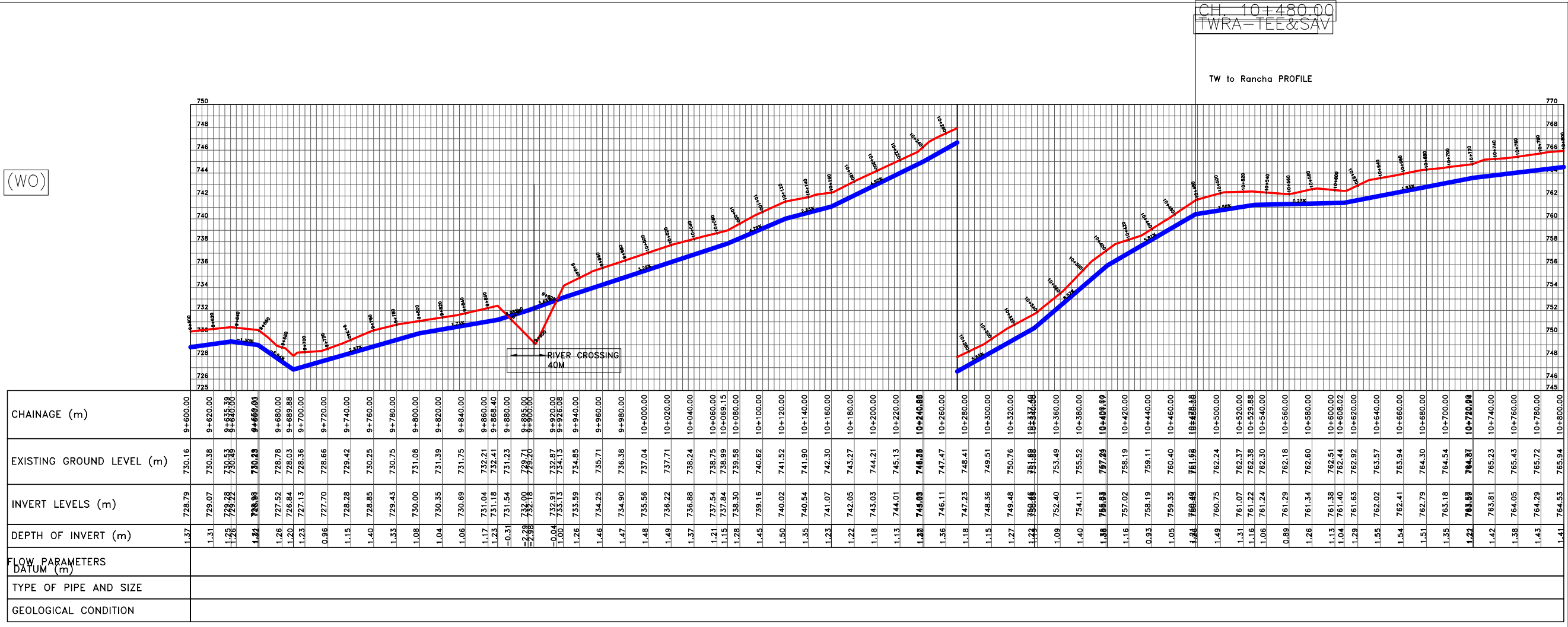
DRG No. **TWRA/08**      REV



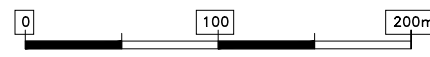


- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - RIVER/STREAM
  - VIKING JOHNSON
  - GATE VALVE
  - SECTIONAL VALVE & No.
  - WASHOUT VALVE & No.
  - AIR VALVE & No.
  - WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE



**LONGITUDINAL SECTION**



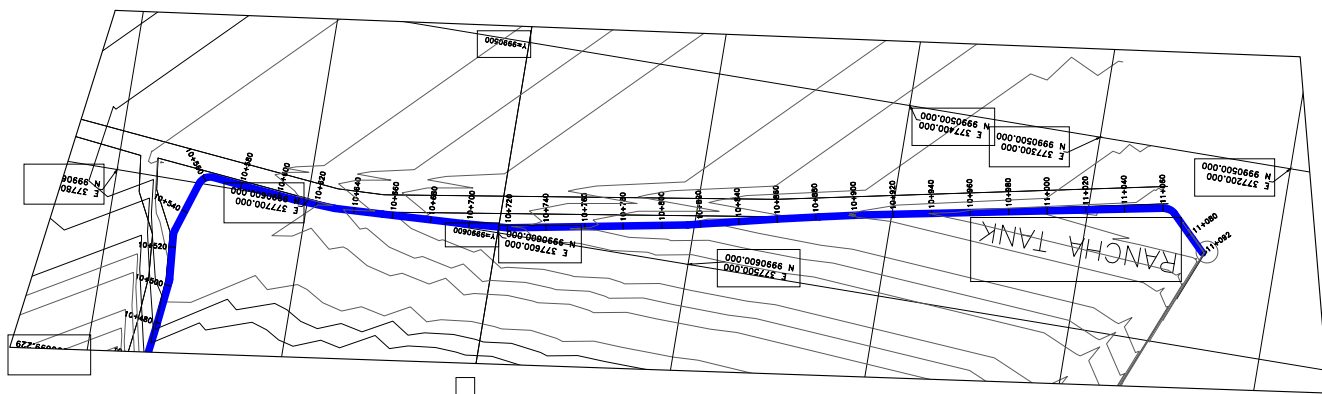
CLIENT: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

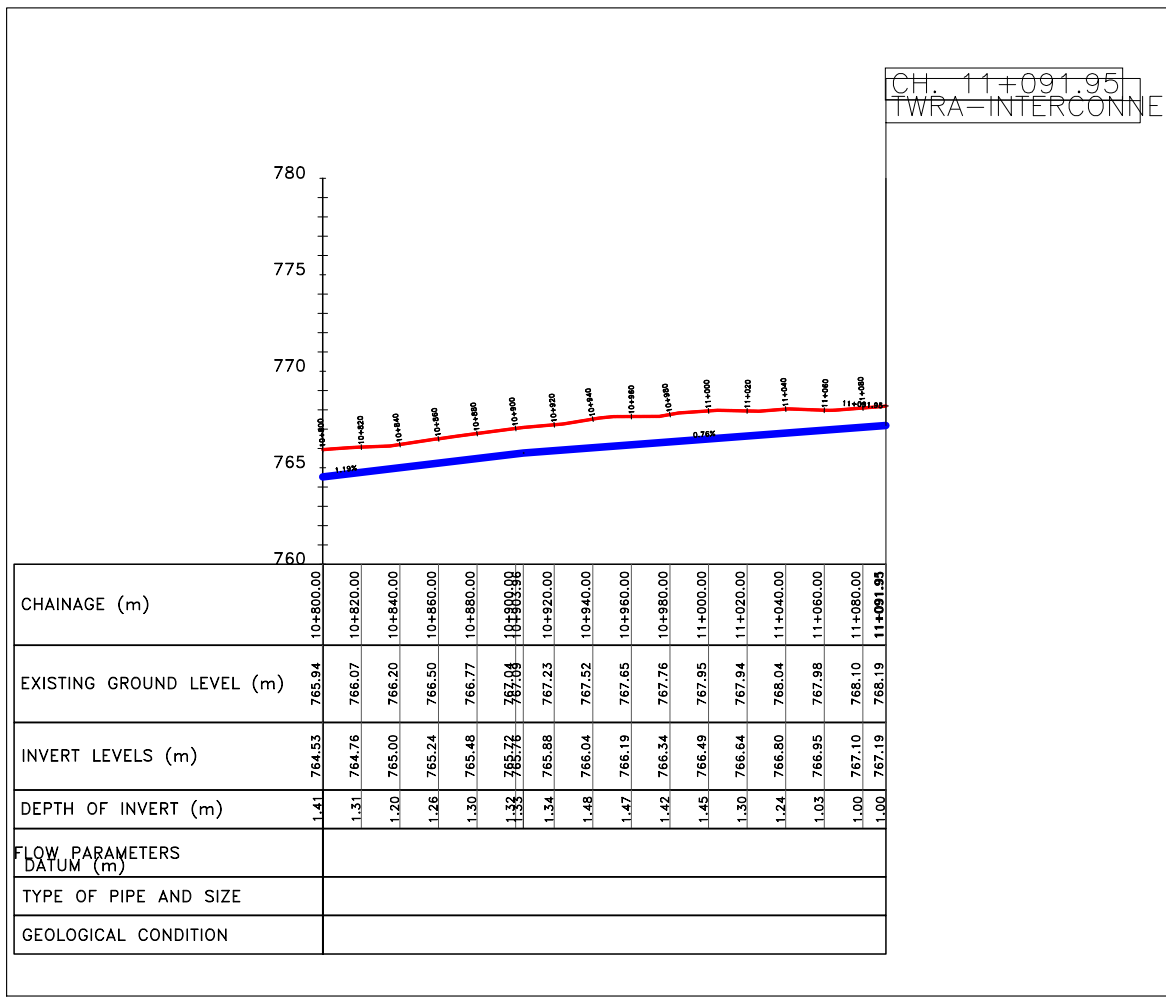
DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION  
CH. 9+600.00 - 10+800.00  
SHEET 9 OF 10**

Designed by: A.M.M      Drawn by: A.M.M  
Checked by: D.N.W      Approved by: D.N.W  
Scale: H: 1:4000, V: 1:400      Date: MAY 2022  
DRG No. **TWRA/09**

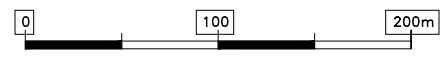


- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - RIVER/STREAM
  - VIKING JOHNSON
  - GATE VALVE
  - SECTIONAL VALVE & No.
  - WASHOUT VALVE & No.
  - AIR VALVE & No.
  - WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE



**LONGITUDINAL SECTION**



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

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

PROJECT TITLE:  
**KIBUNG'A KAKIMIKI PIPELINE  
RELOCATION PROJECT**

DRAWING TITLE:  
**T. WORKS TO RANCHA TANK PLAN  
AND PROFILE SECTION**  
**CH. 10+800.00 - 11+095.41**  
**SHEET 10 OF 10**

Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
<b>DRG No. TWRA/10</b>	REV