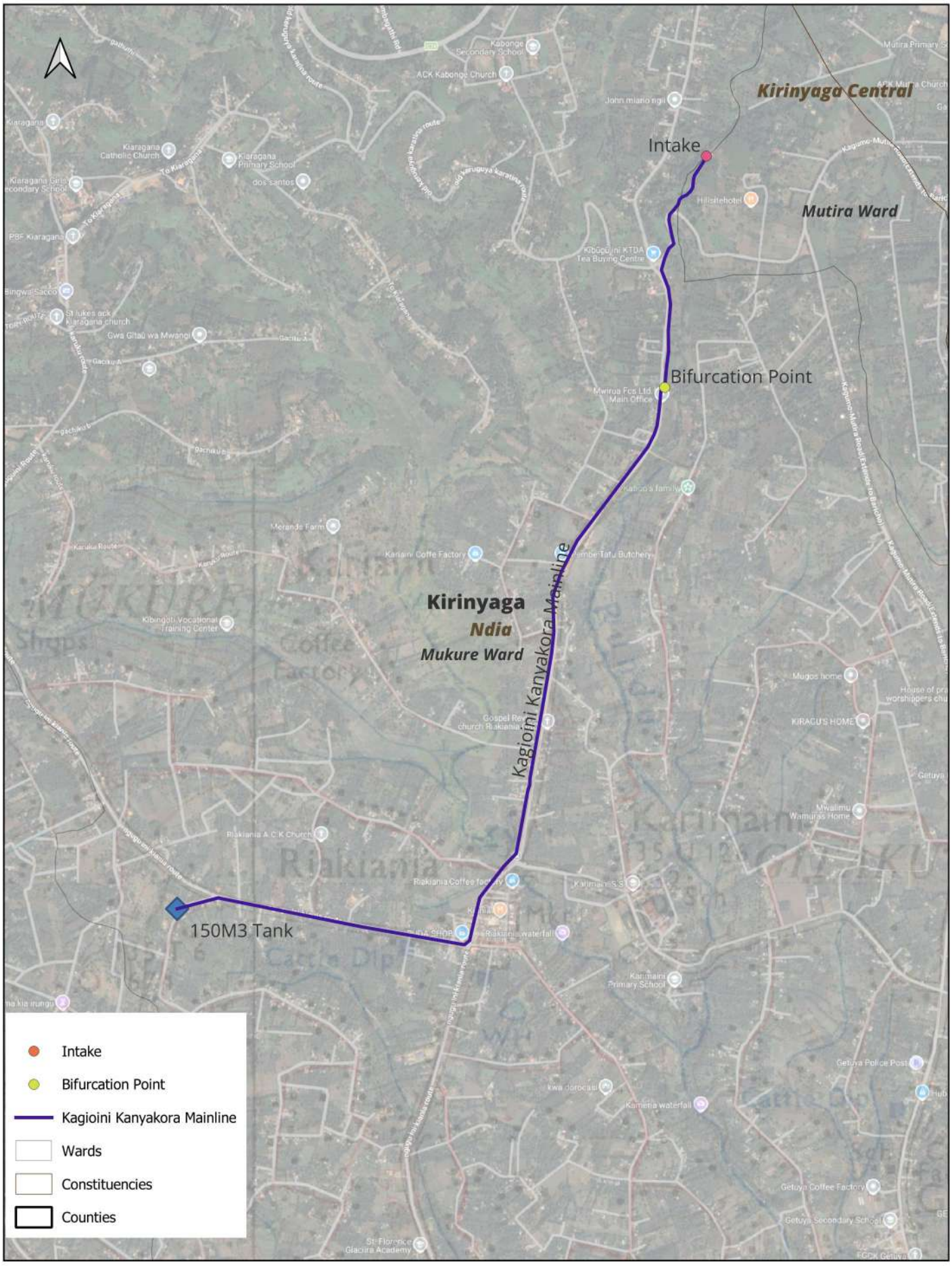
KANYOKORA WATER SUPPLY PROJECT

BOOK OF DRAWINGS

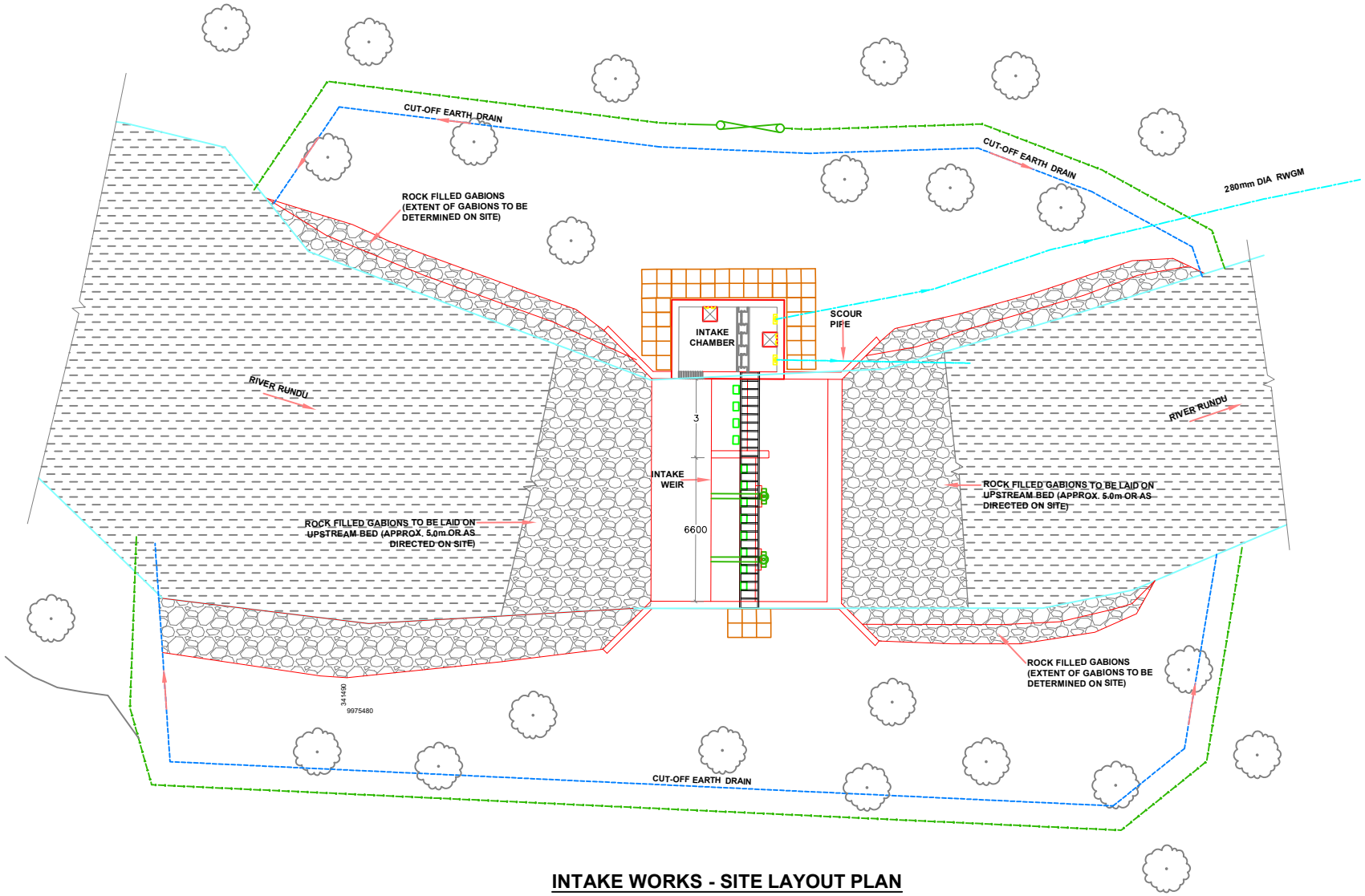
Scale 1:20,000

KANYAKORA WATER SUPPLY PROJECT



37 E
-1 N

0 0.4 0.8 1.2
kilometers
Scale 1:20,000



INTAKE WORKS - SITE LAYOUT PLAN

SCALE 1:175

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED
2. ALL LEVELS ARE IN METERS
3. SETTING OUT AND LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION

LEGEND

EXISTING FEATURES

- CONTOUR AND LEVEL AT 1m INTERVAL
- ROCK FILLED GABIONS
- RIVER
- TREES IN THE FOREST

PROPOSED FEATURES

- PROPOSED PIPELINE
- ROCK FILLED GABIONS
- 600x600x50mm PRECAST CONCRETE PAVING SLABS
- CUT–OFF EARTH DRAIN
- CHAINLINK FENCE AND KEI – APPLE HEDGE
- GATE

ISSUED FOR TENDERING

REVISIONS		SIGN	DATE	APPROVED
	CHECKED			
	CHECKED			
	CHECKED			
	CHECKED			

CLIENT:

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

PROJECT TITLE:

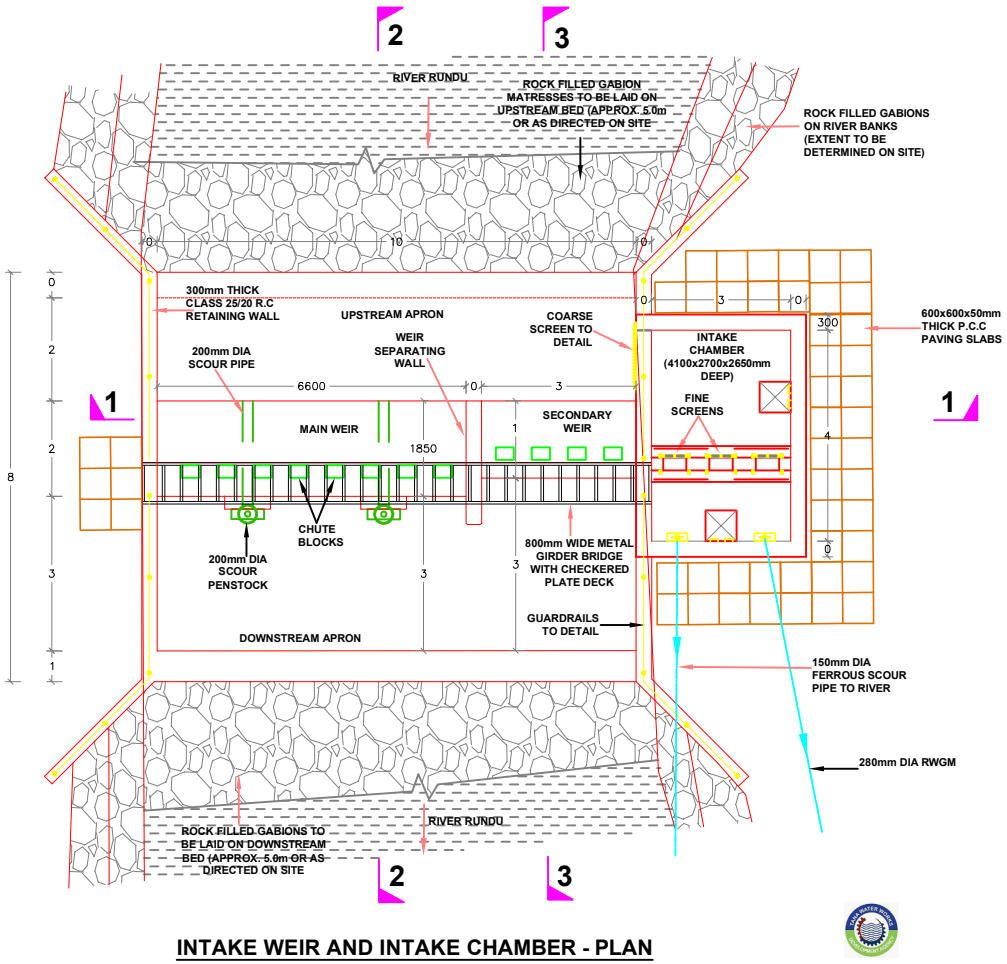
KAYOKORA WATER SUPPLY PROJECT

DRAWING TITLE:

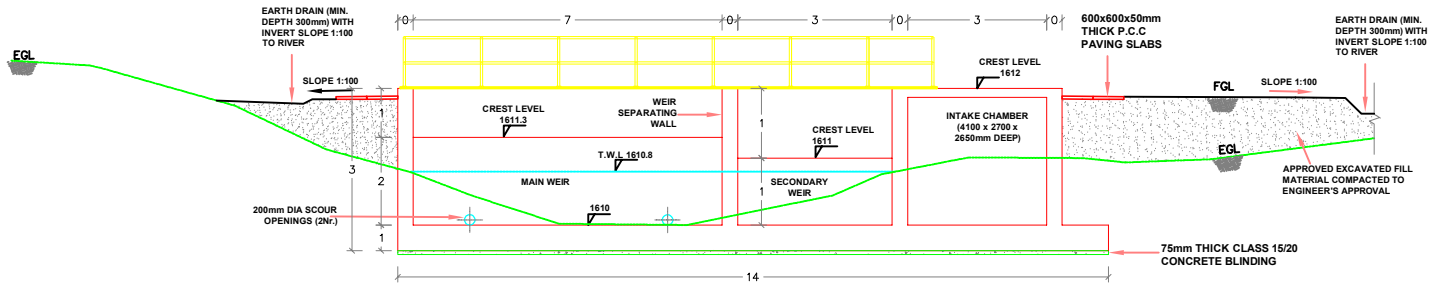
INTAKE WORKS

SITE LAYOUT PLAN

Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by:D.M.N
Scale: 1:175	Date: MAY 2026
DRG No.	REV



INTAKE WEIR AND INTAKE CHAMBER - PLAN



INTAKE WEIR AND INTAKE CHAMBER SECTION 1-1

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
2. ALL LEVELS ARE IN METERS
3. ALL EXPOSED CONCRETE EDGES TO HAVE 25mm x 25mm CHAMFER
4. SETTING OUT AND LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
5. ABBREVIATIONS:
   EGL – EXISTING GROUND LEVEL
   FGL – FINISHED GROUND LEVEL
   RC – REINFORCED CONCRETE

ISSUED FOR TENDERING

REVISIONS		SIGN	DATE	APPROVED
	CHECKED			
	CHECKED			
	CHECKED			
	CHECKED			

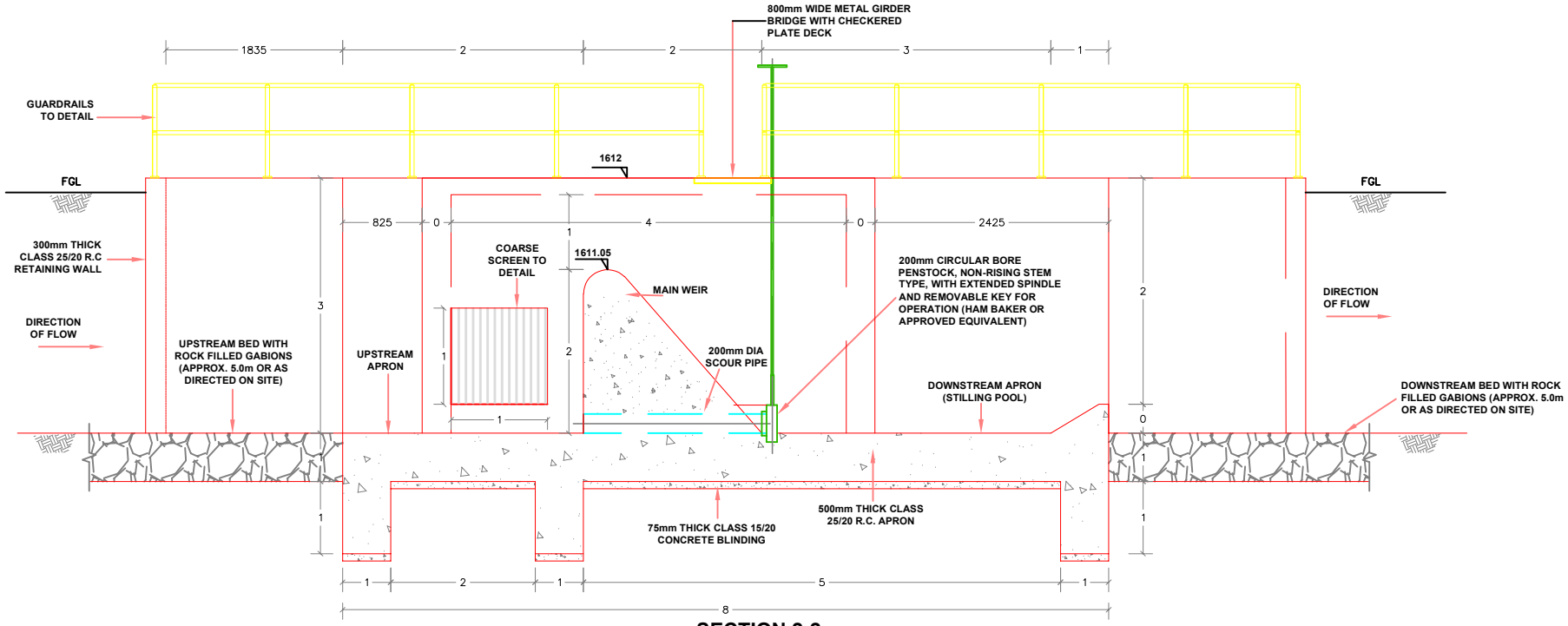
CLIENT:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
P.O BOX 1292 - 10100,
NYERI, KENYA

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

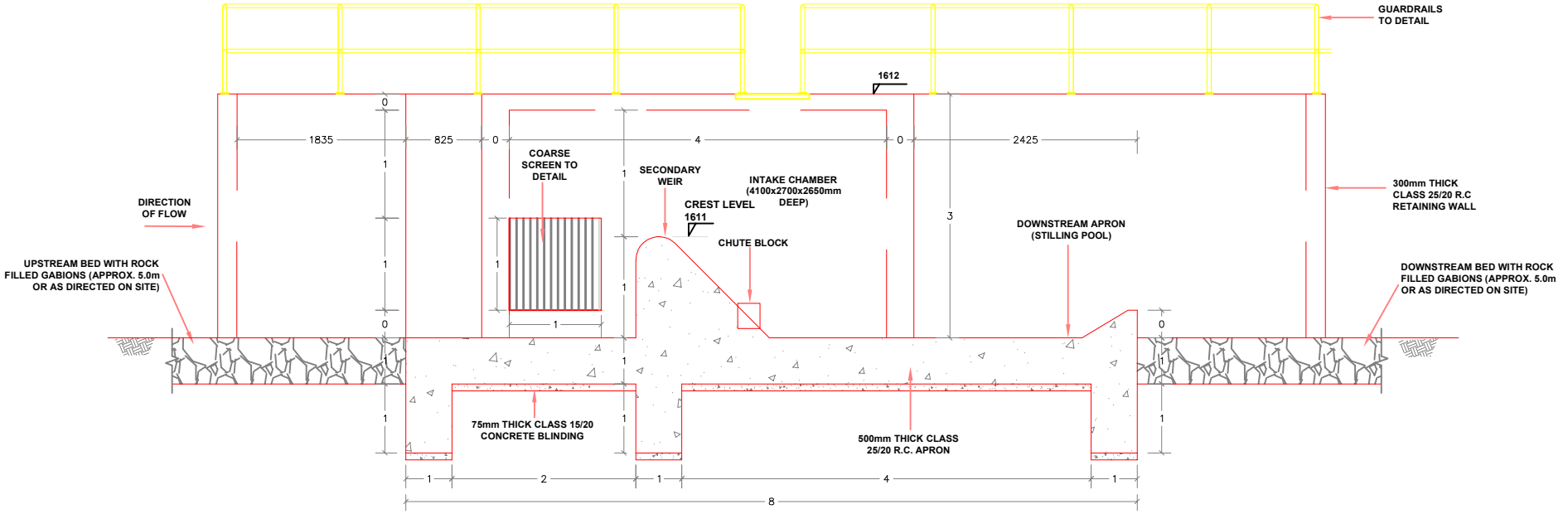
PROJECT TITLE:
KANYOKORA WATER SUPPLY PROJECT

DRAWING TITLE:
INTAKE WORKS
INTAKE WEIR & CHAMBER
PLAN AND SECTION 1-1

Designed by: M.M.M	Drawn by: M.M.M
Checked by:E.W.W/K.N.G	Approved by:D.M.N
Scale: 1:100	Date: MAY 2026
DRG No.	REV



SECTION 2-2
SECTION THROUGH MAIN WEIR



SECTION 3-3
SECTION THROUGH SECONDARY WEIR

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
2. ALL LEVELS ARE IN METERS
3. ALL EXPOSED CONCRETE EDGES TO HAVE 25mm x 25mm CHAMFER
4. SETTING OUT AND LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
5. ABBREVIATIONS:
   EGL – EXISTING GROUND LEVEL
   FGL – FINISHED GROUND LEVEL
   RC – REINFORCED CONCRETE

ISSUED FOR TENDERING

REVISIONS		SIGN	DATE	APPROVED
	CHECKED			
	CHECKED			
	CHECKED			
	CHECKED			

CLIENT:

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:
KANYOKORA WATER SUPPLY PROJECT

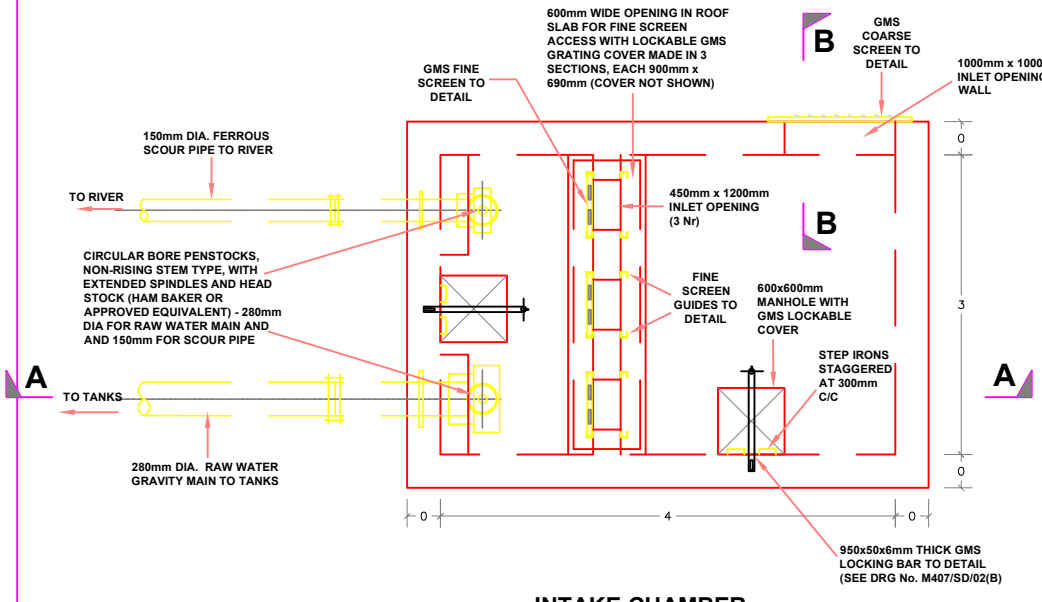
DRAWING TITLE:

INTAKE WORKS

INTAKE WEIR & CHAMBER

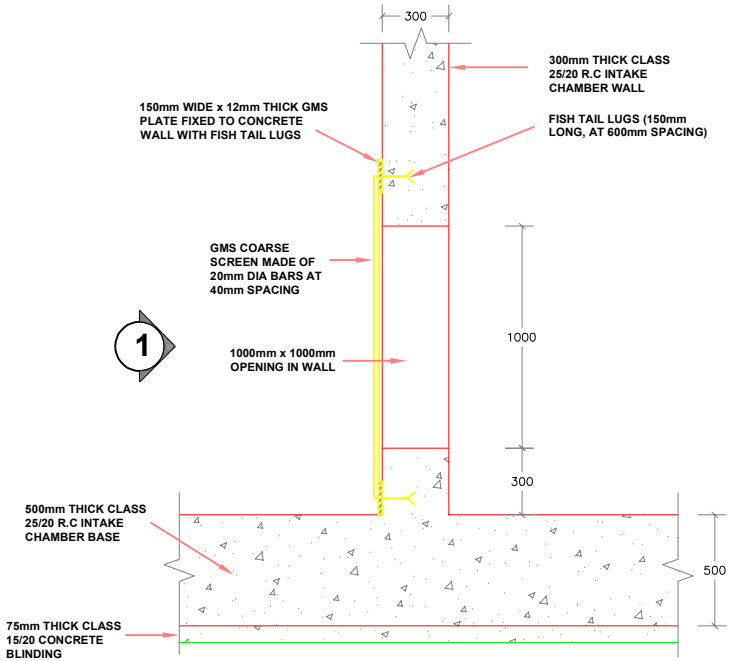
SECTIONS 2-2 & 3-3

Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by: D.M.N
Scale: 1:50	Date: MAY 2026
DRG No.	REV



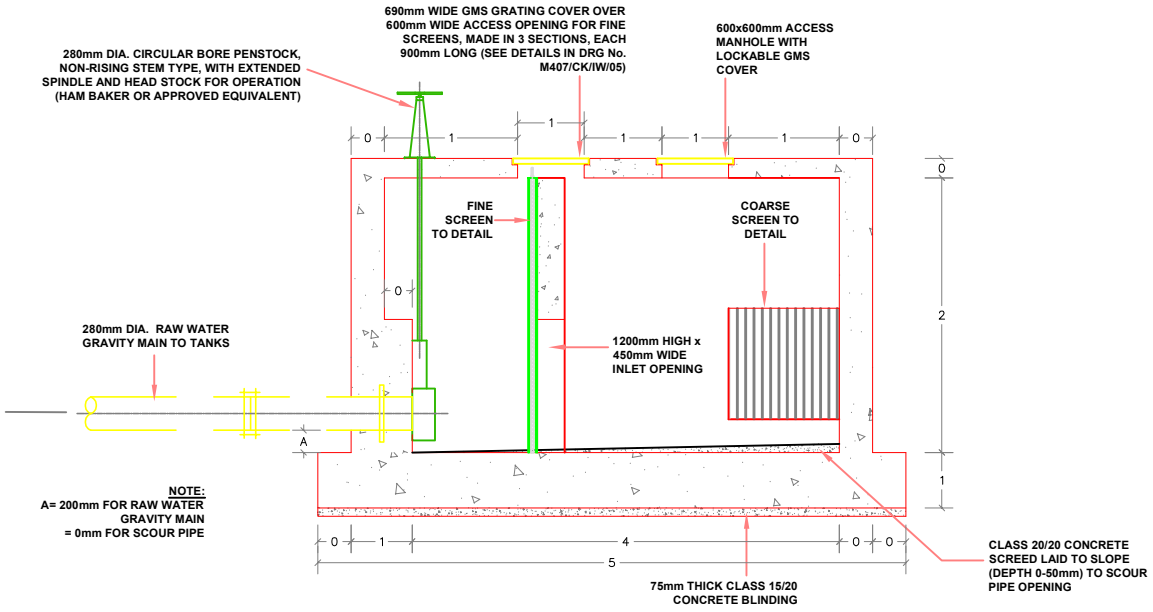
INTAKE CHAMBER PLAN

SCALE 1:50



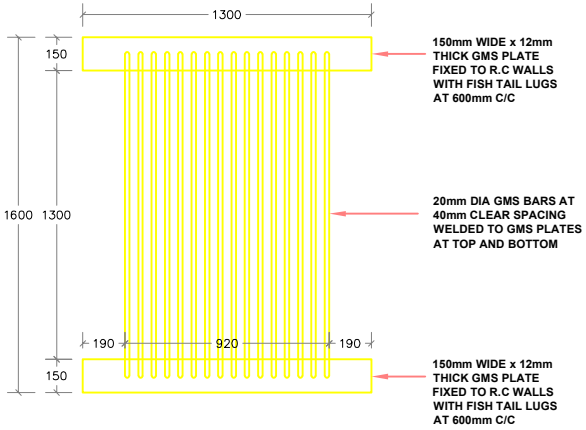
SECTION B-B COARSE SCREEN

SCALE 1:25



SECTION A-A

SCALE 1:50



ELEVATION 1 COARSE SCREEN DETAIL

SCALE 1:25

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
2. ALL LEVELS ARE IN METERS
3. ALL EXPOSED CONCRETE EDGES TO HAVE 25mm x 25mm CHAMFER
4. SETTING OUT AND LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
5. ABBREVIATIONS:
   EGL – EXISTING GROUND LEVEL
   FGL – FINISHED GROUND LEVEL
   RC – REINFORCED CONCRETE

ISSUED FOR TENDERING

REVISIONS		SIGN	DATE	APPROVED
	CHECKED			
	CHECKED			
	CHECKED			
	CHECKED			

CLIENT:

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

ENGINEER:

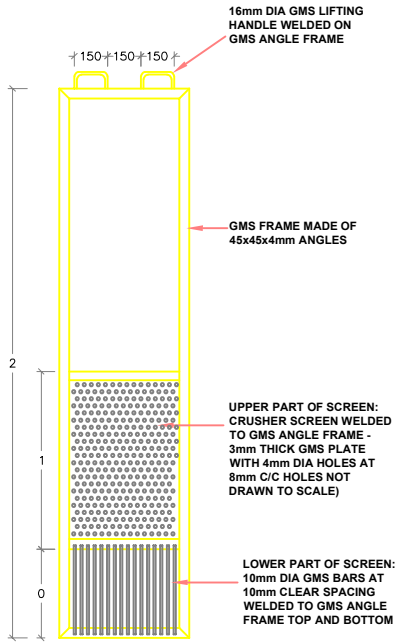
THE CHIEF MANAGER TECHNICAL SERVICES
TANA WATER WORKS DEVELOPMENT AGENCY
P.O BOX 1292 - 10100,
NYERI, KENYA

PROJECT TITLE:
KANYOKORA WATER SUPPLY PROJECT

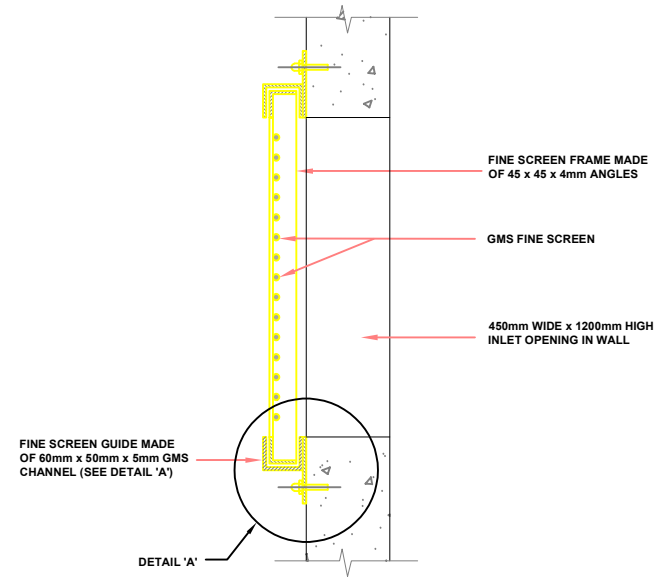
DRAWING TITLE:
INTAKE WORKS

INTAKE CHAMBER AND COARSE SCREEN DETAILS

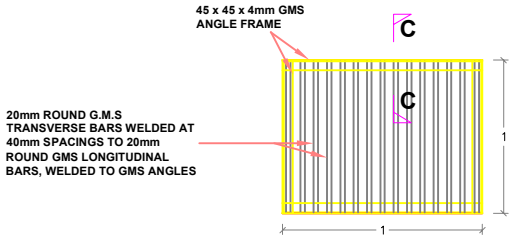
Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by: D.M.N
Scale: 1:50	Date: MAY 2026
DRG No.	REV



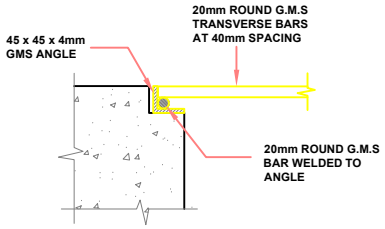
FINE BAR SCREEN ELEVATION
SCALE 1:25



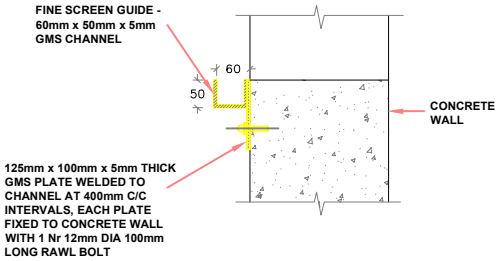
FINE SCREEN & GUIDES SECTIONAL PLAN
NTS



GMS GRATING COVER OVER FINE SCREEN ACCESS OPENING PLAN
SCALE 1:25



SECTION C-C
NTS



DETAIL 'A' FINE SCREEN GUIDE FIXING DETAIL
SCALE 1:10

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
2. ALL LEVELS ARE IN METERS
3. ALL EXPOSED CONCRETE EDGES TO HAVE 25mm x 25mm CHAMFER
4. ALL STEEL WORKS AFTER FABRICATION TO BE CLEANED IN ACCORDANCE WITH THE SPECIFICATIONS AND HOT DIPPED GALVANIZED
5. STEEL SECTION SIZES ARE AS TAKEN FROM BROLLO COLD ROLLED PROFILES CATALOG BY BROLLO KENYA LTD.
6. ABBREVIATIONS:
   EGL – EXISTING GROUND LEVEL
   FGL – FINISHED GROUND LEVEL
   RC – REINFORCED CONCRETE
   GMS – GALVANIZED MILD STEEL

ISSUED FOR TENDERING

	REVISIONS		SIGN	DATE	APPROVED
		CHECKED			
		CHECKED			
		CHECKED			
		CHECKED			

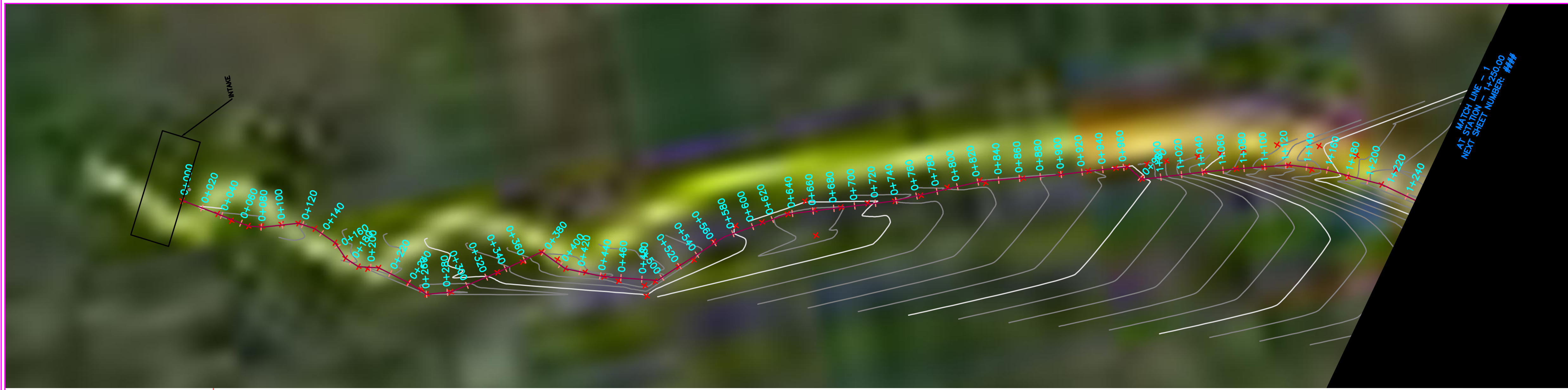
CLIENT:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
P.O BOX 1292 - 10100, NYERI, KENYA

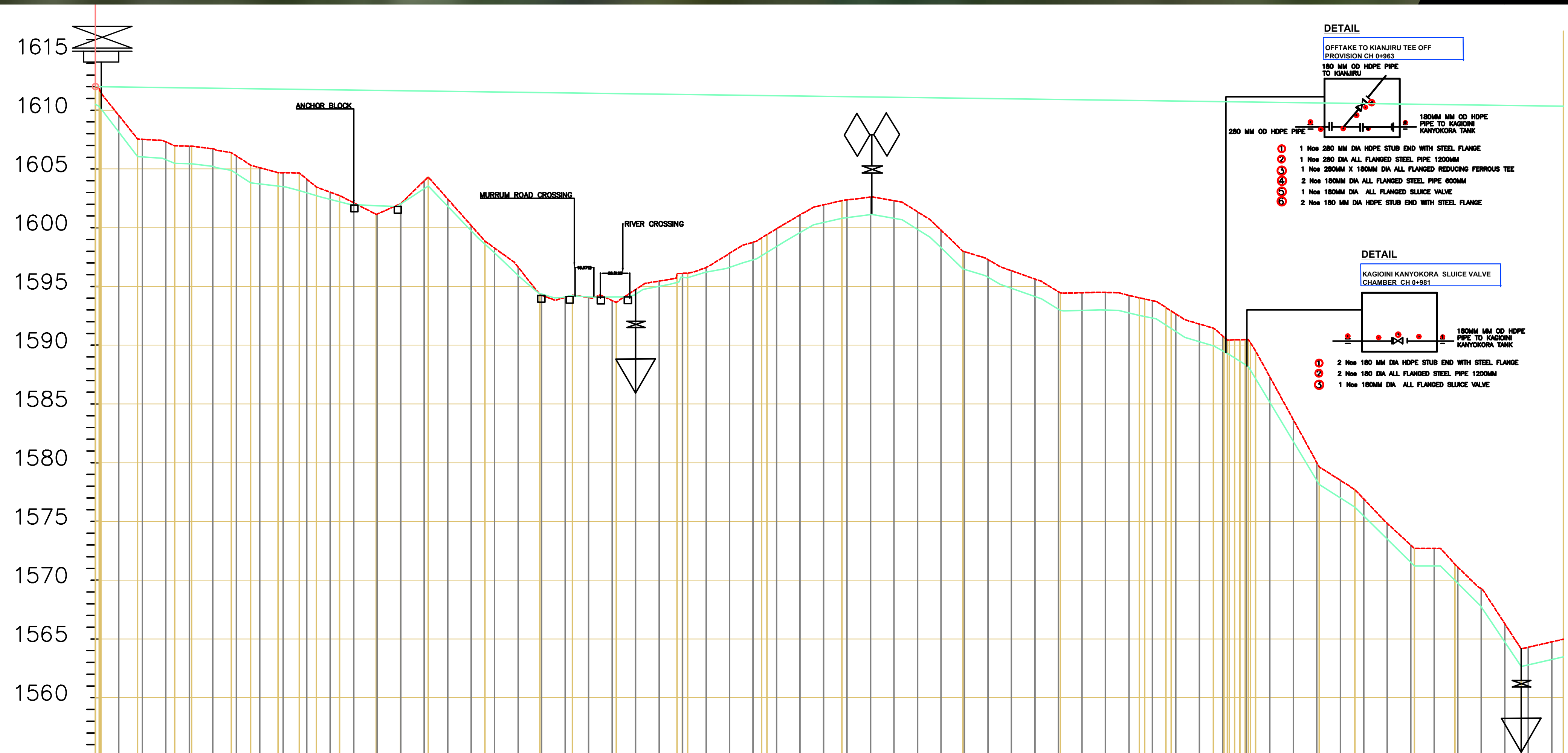
ENGINEERS:
THE CHIEF MANAGER TECHNICAL SERVICES
TANA WATER WORKS DEVELOPMENT AGENCY
P.O BOX 1292 - 10100, NYERI, KENYA

PROJECT TITLE:
KANYOKORA WATER SUPPLY PROJECT

DRAWING TITLE:
INTAKE WORKS
FINE SCREEN DETAILS

Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by: D.M.N
Scale: AS SHOWN	Date: MAY 2026
DRG No.	REV





DISTANCE DATUM (m)	0+020.00	0+040.00	0+060.00	0+080.00	0+100.00	0+120.00	0+140.00	0+160.00	0+180.00	0+200.00	0+220.00	0+240.00	0+260.00	0+280.00	0+300.00	0+320.00
GROUND LEVELS (m)	1609.56	1607.53	1607.30	1606.94	1606.72	1606.12	1605.11	1604.68	1604.14	1603.03	1602.12	1601.16	1602.05	1603.99	1602.45	1600.19
INVERT LEVELS(m)	1608.14	1606.03	1605.80	1605.44	1605.22	1604.62	1603.73	1603.48	1602.97	1602.41	1601.96	1601.86	1602.03	1603.34	1601.83	1599.73
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.41	1.50	1.50	1.50	1.50	1.50	1.39	1.20	1.17	0.62	0.16	-0.70	0.02	0.65	0.62	0.46
HGL(m)	1611.97	1611.95	1611.92	1611.89	1611.87	1611.84	1611.81	1611.79	1611.76	1611.74	1611.71	1611.68	1611.66	1611.63	1611.60	1611.58
TYPE OF PIPE AND SIZE	PN16 OD 280MM HDPE PIPE															

DISTANCE DATUM (m)	0+340.00	0+360.00	0+380.00	0+400.00	0+420.00	0+440.00	0+460.00	0+480.00	0+500.00	0+520.00	0+540.00	0+560.00	0+580.00	0+600.00	0+620.00	0+640.00
GROUND LEVELS (m)	1598.26	1596.64	1594.25	1594.08	1594.06	1593.81	1594.74	1595.46	1596.11	1596.62	1597.82	1598.77	1599.90	1601.08	1601.95	1602.36
INVERT LEVELS(m)	1597.86	1595.94	1594.36	1594.11	1594.12	1594.11	1594.34	1595.01	1595.78	1596.23	1596.63	1597.27	1598.40	1599.58	1600.45	1600.86
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	0.40	0.71	-0.11	-0.03	-0.05	-0.30	0.40	0.45	0.33	0.39	1.20	1.50	1.50	1.50	1.50	1.50
HGL(m)	1611.55	1611.52	1611.50	1611.47	1611.44	1611.42	1611.39	1611.36	1611.34	1611.31	1611.28	1611.26	1611.23	1611.21	1611.18	1611.15
TYPE OF PIPE AND SIZE							PN12.5 OD 280MM HDPE PIPE									

DISTANCE DATUM (m)	0+660.00	0+680.00	0+700.00	0+720.00	0+740.00	0+760.00	0+780.00	0+800.00	0+820.00	0+840.00	0+860.00	0+880.00	0+900.00	0+920.00	0+940.00	0+960.00
GROUND LEVELS (m)	1602.61	1602.29	1601.36	1599.80	1597.96	1597.29	1596.34	1595.63	1594.55	1594.47	1594.49	1594.24	1593.80	1592.66	1591.80	1590.78
INVERT LEVELS(m)	1601.11	1600.79	1599.86	1598.30	1596.46	1595.79	1594.84	1594.13	1593.05	1592.97	1592.99	1592.74	1592.30	1591.16	1590.30	1589.51
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.27
HGL(m)	1611.13	1611.10	1611.07	1611.05	1611.02	1610.99	1610.97	1610.94	1610.91	1610.89	1610.86	1610.83	1610.81	1610.78	1610.75	1610.73
TYPE OF PIPE AND SIZE																PN12.5 OD 180MM HDPE PIPE

DISTANCE DATUM (m)	0+980.00	1+000.00	1+020.00	1+040.00	1+060.00	1+080.00	1+100.00	1+120.00	1+140.00	1+160.00	1+180.00	1+200.00	1+220.00	1+240.00
GROUND LEVELS (m)	1590.48	1587.30	1583.65	1580.01	1578.50	1576.92	1574.83	1572.99	1572.71	1571.12	1569.29	1566.30	1564.30	1564.75
INVERT LEVELS(m)	1588.29	1585.14	1581.81	1578.48	1577.00	1575.46	1573.49	1571.51	1571.21	1569.75	1567.72	1564.74	1562.80	1563.25
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	2.18	2.16	1.85	1.53	1.50	1.45	1.34	1.48	1.50	1.37	1.57	1.56	1.50	1.50
HGL(m)	1610.70	1610.68	1610.65	1610.62	1610.60	1610.57	1610.54	1610.52	1610.49	1610.46	1610.44	1610.41	1610.38	1610.36
TYPE OF PIPE AND SIZE														

Kagioini–Kanyokora Kianjiru RWGM
SCALE: HOR 1:2000 VERT 1:1000

NOTES

1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
2. COORDINATES ARE BASED ON UTM.
3. LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
4. GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
5. PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M. WHERE COVER IS LESS THAN THIS, PIPE TO BE SURROUNDED WITH CONCRETE.
6. ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
7. IN WATER LOGGED AREAS, PIPES TO BE BEDDED WITH SINGLE SIZED OR GRADED AGGREGATES AS PER CLAUSE 430.1 AND 216 OF TECHNICAL SPECIFICATIONS AND/OR ANCHOR BLOCKS AS MAY BE DIRECTED ON SITE BY THE ENGINEER.

LEGEND:

———	PROPOSED PIPELINE
———	EXISTING GROUND PROFILE
———	PIPE INVERT PROFILE
	EXISTING ROAD
	AIR VALVE
DAV	DOUBLE AIR VALVE
	WASHOUT
WO1	WASHOUT TYPE 1
WO2	WASHOUT TYPE 2
DN	NOMINAL DIAMETER
PN	NOMINAL PRESSURE
VB	VERTICAL BEND
HB	HORIZONTAL BEND
▨	EXISTING STRUCTURE
ER	EARTH ROAD
GR	GRAVEL ROAD
	CUT

FOR TENDERING
signed
R E V I S I O N S

REV	DESCRIPTION	DESIGNATION	DATE	CHECKED BY	APPROVED BY

CLIENT:

CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

PROPOSED PROJECT:

KANYOKORA WATER SUPPLY PROJECT

ENGINEER:

CHIEF MANAGER TECHNICAL SERVICES
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

DRG No. TWWDA/KYWSP/KRWM-1

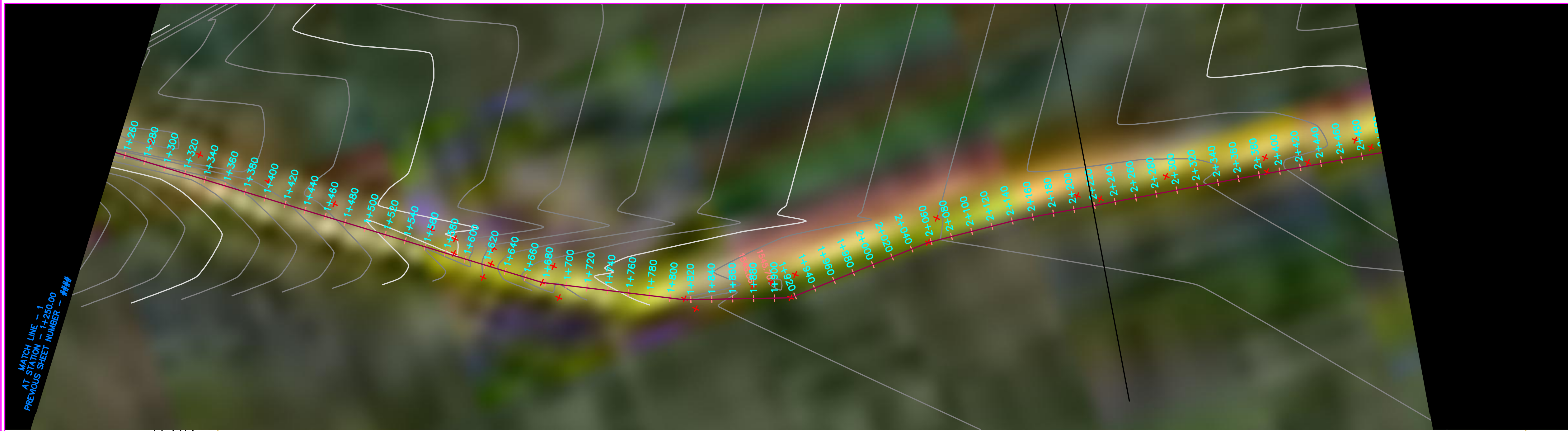
SHEET No. SHEET 1 OF 4

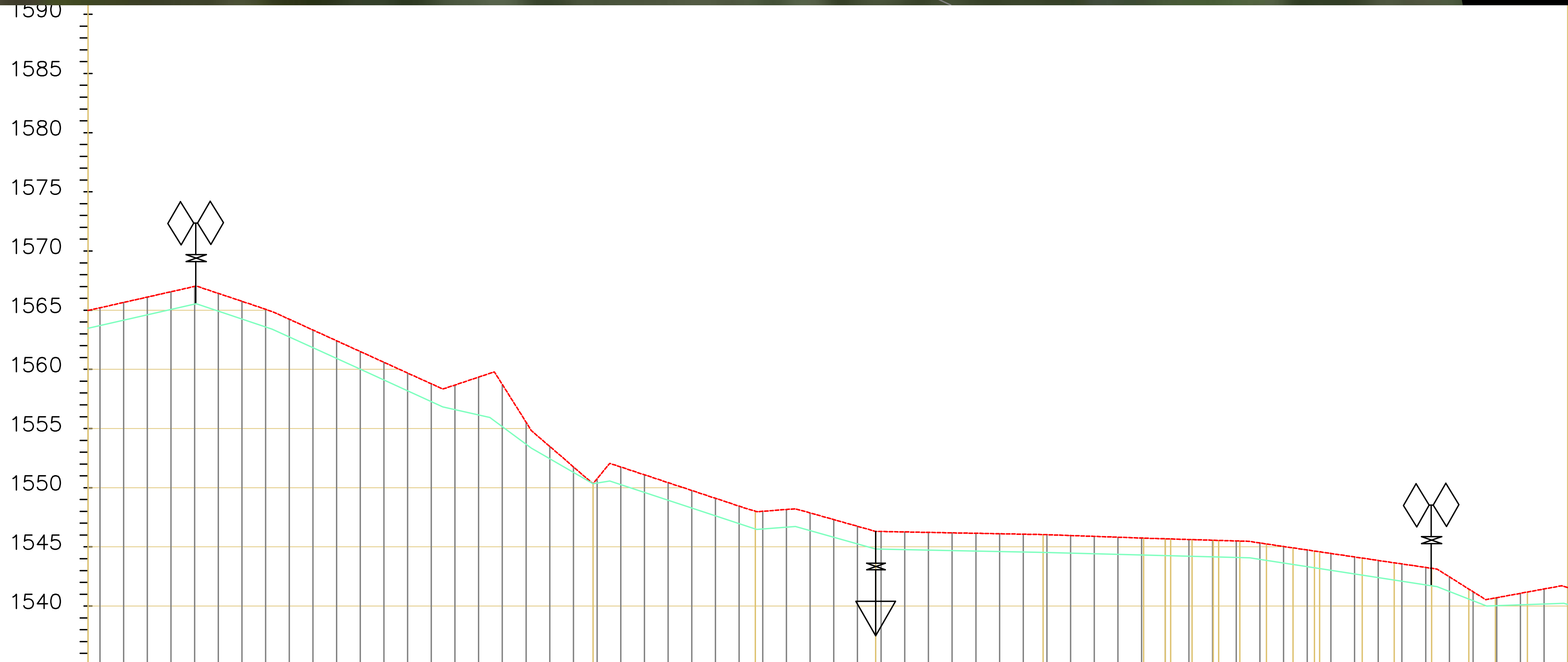
DRAWING TITLE:

PLAN AND PROFILE LAYOUT

KAGIOINI - KAYOKORA RWGM

Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by: D.M.N
Scale: 1 : 2000	Date: MAY 2026





DISTANCE DATUM (m)	1+260.00	1+280.00	1+300.00	1+320.00	1+340.00	1+360.00	1+380.00	1+400.00
GROUND LEVELS (m)	1565.20	1565.65	1566.11	1566.56	1567.01	1566.42	1565.75	1565.08
INVERT LEVELS(m)	1563.70	1564.15	1564.61	1565.06	1565.51	1564.92	1564.25	1563.58
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
HGL(m)	1610.33	1610.30	1610.28	1610.25	1610.22	1610.20	1610.17	1610.15

DISTANCE DATUM (m)	1+420.00	1+440.00	1+460.00	1+480.00	1+500.00	1+520.00	1+540.00	1+560.00
GROUND LEVELS (m)	1564.23	1563.32	1562.41	1561.51	1560.60	1559.69	1558.78	1558.68
INVERT LEVELS(m)	1562.73	1561.82	1560.91	1560.01	1559.10	1558.19	1557.28	1556.61
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	2.08
HGL(m)	1610.12	1610.09	1610.07	1610.04	1610.01	1609.99	1609.96	1609.93

DISTANCE DATUM (m)	1+580.00	1+600.00	1+620.00	1+640.00	1+660.00	1+680.00	1+700.00	1+720.00
GROUND LEVELS (m)	1559.35	1558.72	1555.54	1553.49	1551.76	1550.75	1551.75	1551.09
INVERT LEVELS(m)	1556.15	1555.15	1553.67	1552.44	1551.29	1550.39	1550.25	1549.60
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	3.19	3.57	1.87	1.05	0.48	0.36	1.50	1.50
HGL(m)	1609.91	1609.88	1609.85	1609.83	1609.80	1609.77	1609.75	1609.72

DISTANCE DATUM (m)	1+740.00	1+760.00	1+780.00	1+800.00	1+820.00	1+840.00	1+860.00	1+880.00
GROUND LEVELS (m)	1550.43	1549.77	1549.11	1548.44	1548.01	1548.16	1547.87	1547.31
INVERT LEVELS(m)	1548.94	1548.28	1547.62	1546.96	1546.51	1546.66	1546.37	1545.81
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.49	1.49	1.49	1.48	1.50	1.50	1.50	1.50
HGL(m)	1609.70	1609.67	1609.64	1609.62	1609.59	1609.56	1609.54	1609.51

DISTANCE DATUM (m)	1+900.00	1+920.00	1+940.00	1+960.00	1+980.00	2+000.00	2+020.00	2+040.00
GROUND LEVELS (m)	1546.74	1546.30	1546.26	1546.22	1546.19	1546.15	1546.11	1546.07
INVERT LEVELS(m)	1545.24	1544.80	1544.76	1544.72		1544.65	1544.61	1544.57
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.50	1.50	1.50	1.50		1.50	1.50	1.50
HGL(m)	1609.48	1609.46	1609.43	1609.40	1609.38	1609.35	1609.32	1609.30

DISTANCE DATUM (m)	2+060.00	2+080.00	2+100.00	2+120.00	2+140.00	2+160.00	2+180.00	2+200.00
GROUND LEVELS (m)	1546.03	1545.96	1545.89	1545.82	1545.75	1545.68	1545.62	1545.56
INVERT LEVELS(m)	1544.53	1544.48	1544.42	1544.37	1544.32	1544.26	1544.21	1544.16
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.50	1.48	1.46	1.45	1.43	1.42	1.41	1.41
HGL(m)	1609.27	1609.24	1609.22	1609.19	1609.17	1609.14	1609.11	1609.09

DISTANCE DATUM (m)	2+220.00	2+240.00	2+260.00	2+280.00	2+300.00	2+320.00	2+340.00	2+360.00
GROUND LEVELS (m)	1545.50	1545.33	1545.03	1544.74	1544.44	1544.15	1543.85	1543.56
INVERT LEVELS(m)	1544.10	1543.94	1543.63	1543.32	1543.02	1542.71	1542.40	1542.10
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.40	1.39	1.40	1.41	1.43	1.44	1.45	1.46
HGL(m)	1609.06	1609.03	1609.01	1608.98	1608.95	1608.93	1608.90	1608.87

DISTANCE DATUM (m)	2+380.00	2+400.00	2+420.00	2+440.00	2+460.00	2+480.00
GROUND LEVELS (m)	1543.26	1542.47	1541.22	1540.71	1541.07	1541.44
INVERT LEVELS(m)	1541.79	1541.24	1540.45	1540.03	1540.10	1540.17
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.48	1.24	0.76	0.68	0.98	1.27
HGL(m)	1608.85	1608.82	1608.79	1608.77	1608.74	1608.71

TYPE OF PIPE AND SIZE: PN12.5 OD 180MM HDPE PIPE

Kagioini–Kanyokora Kianjiru RWGM
SCALE: HOR 1:2000 VERT 1:1000

NOTES

1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
2. COORDINATES ARE BASED ON UTM.
3. LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
4. GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
5. PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M. WHERE COVER IS LESS THAN THIS, PIPE TO BE SURROUNDED WITH CONCRETE.
6. ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
7. IN WATER LOGGED AREAS, PIPES TO BE BEDDED WITH SINGLE SIZED OR GRADED AGGREGATES AS PER CLAUSE 430.1 AND 216 OF TECHNICAL SPECIFICATIONS AND/OR ANCHOR BLOCKS AS MAY BE DIRECTED ON SITE BY THE ENGINEER.

LEGEND:

- PROPOSED PIPELINE
- EXISTING GROUND PROFILE
- PIPE INVERT PROFILE
- EXISTING ROAD
- AIR VALVE
- DAV – DOUBLE AIR VALVE
- WASHOUT
- WO1 – WASHOUT TYPE 1
- WO2 – WASHOUT TYPE 2
- DN – NOMINAL DIAMETER
- PN – NOMINAL PRESSURE
- VB – VERTICAL BEND
- HB – HORIZONTAL BEND
- EXISTING STRUCTURE
- ER – EARTH ROAD
- GR – GRAVEL ROAD
- CUT

FOR TENDERING
signed
R E V I S I O N S

REV	DESCRIPTION	DESIGNATION	DATE	CHECKED BY	APPROVED BY

CLIENT:
CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

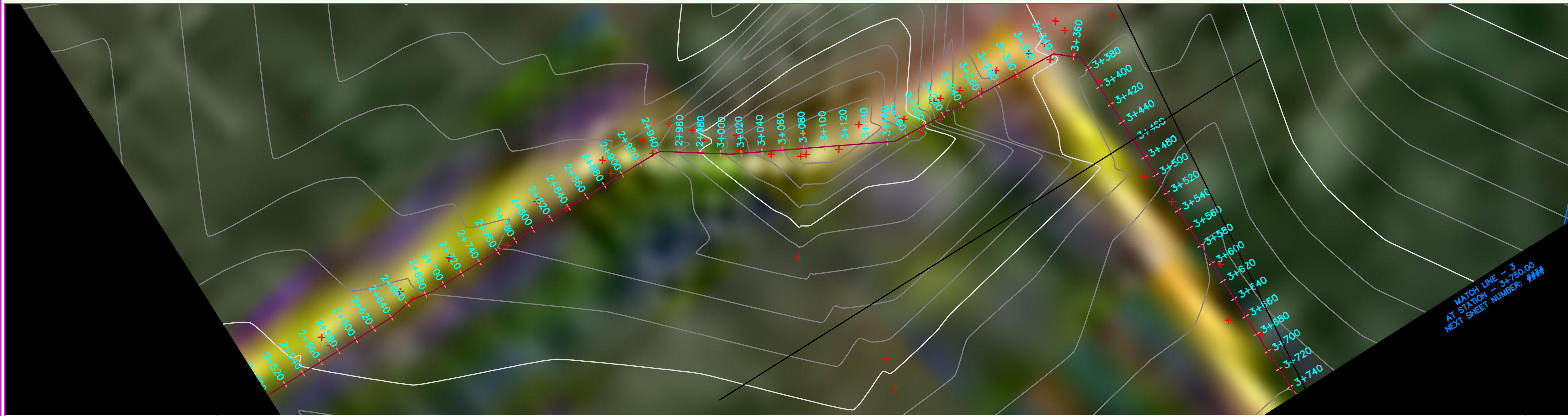
PROPOSED PROJECT:
KANYOKORA WATER SUPPLY PROJECT

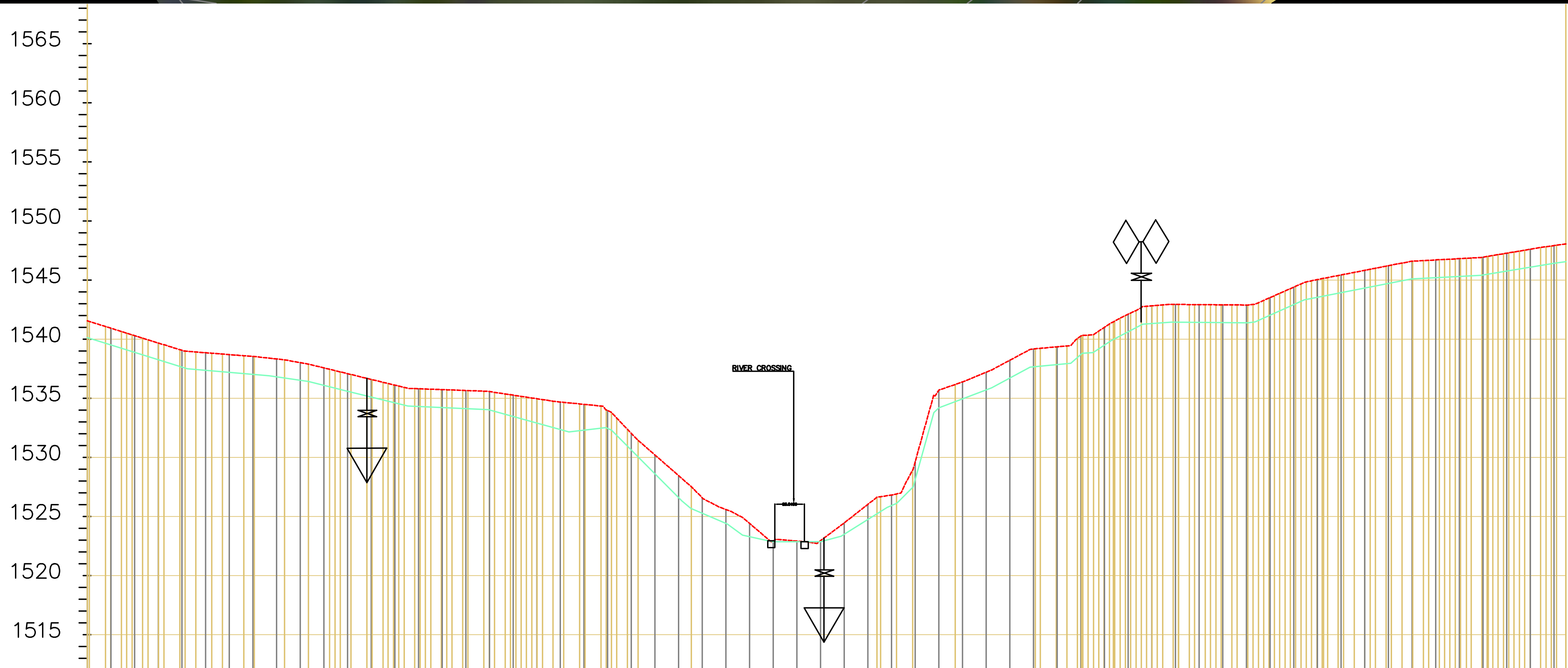
ENGINEER:
CHIEF MANAGER TECHNICAL SERVICES
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

DRG No. TWWDA/KYWSP/KRWM-2
SHEET No. SHEET 2 OF 4

DRAWING TITLE:
PLAN AND PROFILE LAYOUT
KAGIOINI KANYOKORA RWGM

Designed by: M.M.M	Drawn by: M.M.M
Checked by E.W.W/K.N.G	Approved by: D.M.N
Scale: 1 : 2000	Date: MAY 2026





DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)
2+520.00	1540.93	1539.51	1.43	1608.66
2+540.00	1540.31	1538.88	1.43	1608.64
2+560.00	1539.68	1538.26	1.42	1608.61
2+580.00	1539.06	1537.64	1.42	1608.58
2+600.00	1538.86	1537.37	1.49	1608.56
2+620.00	1538.70	1537.20	1.50	1608.53
2+640.00	1538.54	1537.02	1.52	1608.50
2+660.00	1538.33	1536.82	1.52	1608.48
2+680.00	1538.02	1536.53	1.49	1608.45
2+700.00	1537.58	1536.10	1.47	1608.42
2+720.00	1537.09	1535.61	1.48	1608.40
2+740.00	1536.60	1535.11	1.49	1608.37
2+760.00	1536.11	1534.62	1.49	1608.34
2+780.00	1535.81	1534.31	1.50	1608.32
2+800.00	1535.74	1534.22	1.52	1608.29
2+820.00	1535.66	1534.13	1.54	1608.26
2+840.00	1535.57	1534.01	1.56	1608.24
2+860.00	1535.27	1533.46	1.81	1608.21
2+880.00	1534.97	1532.91	2.06	1608.18
2+900.00	1534.69	1532.36	2.33	1608.16
2+920.00	1534.49	1532.31	2.17	1608.13
2+940.00	1533.96	1532.45	1.51	1608.11
2+960.00	1532.03	1530.61	1.42	1608.08
2+980.00	1530.20	1528.60	1.60	1608.05
3+000.00	1528.45	1526.59	1.86	1608.03
3+020.00	1526.58	1525.28	1.31	1608.00
3+040.00	1525.59	1524.41	1.18	1607.97
3+060.00	1524.41	1523.29	1.12	1607.95
3+080.00	1522.94	1522.88	0.06	1607.92
3+100.00	1522.93	1522.87	0.06	1607.89
3+120.00	1522.96			1607.87
3+140.00	1524.46	1523.50	0.97	1607.84
3+160.00	1526.04	1524.76	1.28	1607.81
3+180.00	1526.82	1525.93	0.89	1607.79
3+200.00	1529.66	1528.16	1.50	1607.76
3+220.00	1535.70	1534.20	1.50	1607.73
3+240.00	1536.39	1534.96	1.42	1607.71
3+260.00	1537.21	1535.72	1.49	1607.68
3+280.00	1538.23	1536.73	1.50	1607.65
3+300.00	1539.17	1537.67	1.51	1607.63
3+320.00	1539.36	1537.85	1.50	1607.60
3+340.00	1540.27	1538.72	1.55	1607.58
3+360.00	1541.02	1539.52	1.50	1607.55
3+380.00	1542.12	1540.63	1.48	1607.52
3+400.00	1542.83	1541.32	1.50	1607.50
3+420.00	1542.94	1541.44	1.50	1607.47
3+440.00	1542.93	1541.43	1.50	1607.44
3+460.00	1542.91	1541.41	1.50	1607.42
3+480.00	1542.89	1541.39	1.50	1607.39
3+500.00	1543.53	1542.03	1.49	1607.36
3+520.00	1544.41	1542.93	1.48	1607.34
3+540.00	1545.05	1543.54	1.51	1607.31
3+560.00	1545.44	1543.93	1.51	1607.28
3+580.00	1545.83	1544.32	1.50	1607.26
3+600.00	1546.22	1544.72	1.50	1607.23
3+620.00	1546.60	1545.10	1.50	1607.20
3+640.00	1546.71	1545.21	1.50	1607.18
3+660.00	1546.82	1545.32	1.50	1607.15
3+680.00	1546.95	1545.44	1.50	1607.13
3+700.00	1547.28	1545.77	1.51	1607.10
3+720.00	1547.61	1546.10	1.52	1607.07
3+740.00	1547.92	1546.42	1.50	1607.05

TYPE OF PIPE AND SIZE: PN12.5 OD 180MM HDPE PIPE

Kagioini–Kanyokora Kianjiru RWGM
SCALE: HOR 1:2000 VERT 1:1000

NOTES

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LEGEND:

- PROPOSED PIPELINE
- EXISTING GROUND PROFILE
- PIPE INVERT PROFILE
- EXISTING ROAD
- AIR VALVE
- DAV – DOUBLE AIR VALVE
- WASHOUT
- WO1 – WASHOUT TYPE 1
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- EXISTING STRUCTURE
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- GR – GRAVEL ROAD
- CUT

FOR TENDERING
signed
REVISIONS

REV	DESCRIPTION	DESIGNATION	DATE	CHECKED BY	APPROVED BY

CLIENT:
CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

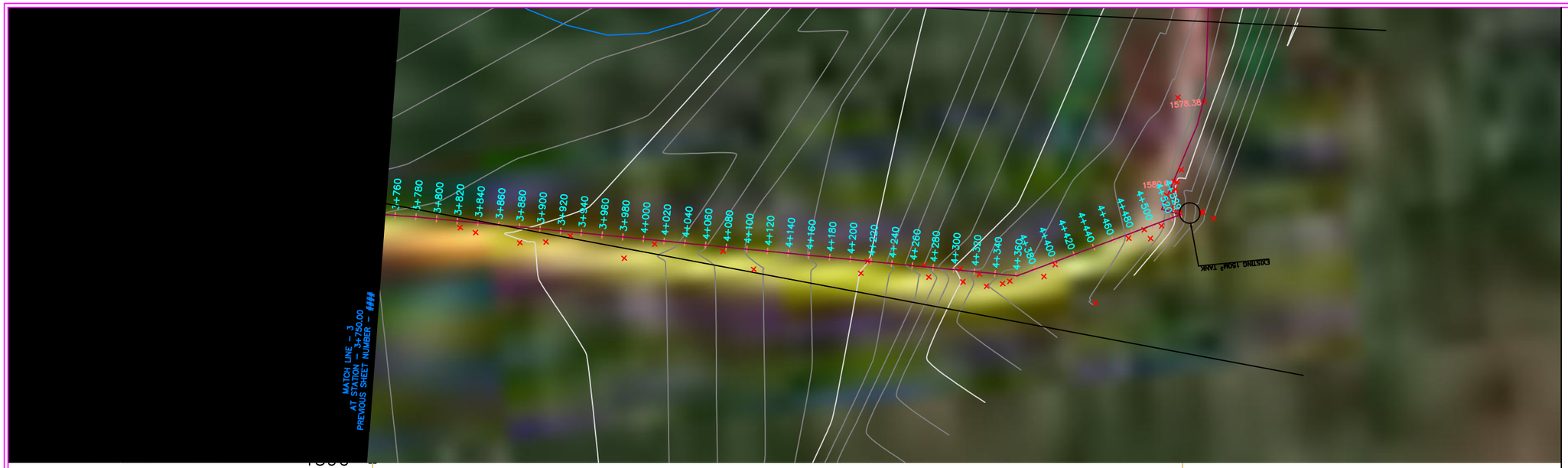
PROPOSED PROJECT:
KANYOKORA WATER SUPPLY PROJECT

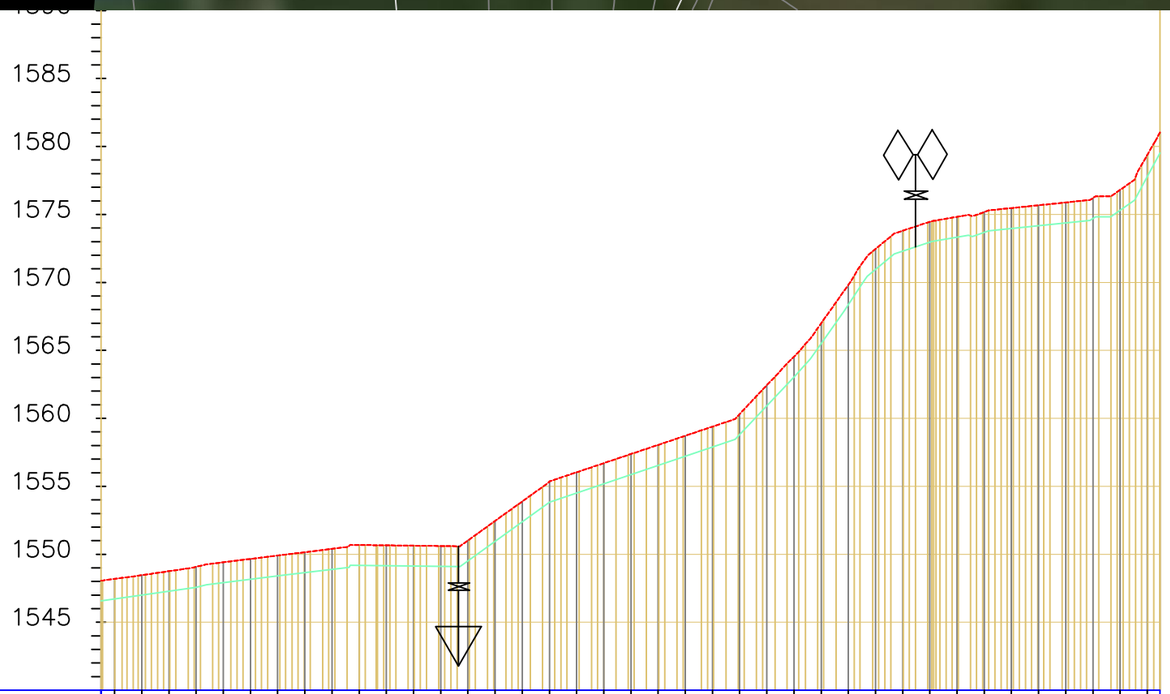
ENGINEER:
CHIEF MANAGER TECHNICAL SERVICES
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

DRG No. TWWDA/KYWSP/KRWM-3
SHEET No. SHEET 3 OF 4

DRAWING TITLE:
PLAN AND PROFILE LAYOUT
KAGIOINI KANYOKORA RWGM

Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by: D.M.N
Scale: 1 : 2000	Date: MAY 2026





DISTANCE DATUM (m)	3+760.00	3+780.00	3+800.00	3+820.00	3+840.00	3+860.00	3+880.00	3+900.00	3+920.00	3+940.00	3+960.00	3+980.00	4+000.00	4+020.00	4+040.00	4+060.00	4+080.00	4+100.00	4+120.00	4+140.00	4+160.00	4+180.00	4+200.00	4+220.00	4+240.00	4+260.00	4+280.00	4+300.00	4+320.00	4+340.00	4+360.00	4+380.00	4+400.00	4+420.00	4+440.00	4+460.00	4+480.00	4+500.00	4+520.00
GROUND LEVELS (m)	1548.19	1548.46	1548.76	1549.08	1549.41	1549.66	1549.91	1550.15	1550.40	1550.63	1550.68	1550.61	1551.01	1552.45	1553.89	1555.36	1556.03	1556.70	1557.37	1558.04	1558.72	1559.39	1560.31	1562.44	1564.54	1566.99	1569.82	1572.46	1573.81	1574.46	1574.83	1575.18	1575.47	1575.68	1575.88	1576.20	1576.81	1579.38
INVERT LEVELS(m)	1546.71	1547.00	1547.29		1547.91	1548.16	1548.41	1548.65	1548.89	1549.13	1549.16	1549.11	1549.52	1550.96	1552.40		1554.51	1555.19	1555.86	1556.54	1557.21	1557.89	1558.80	1560.92		1565.49	1568.36	1570.96	1572.31	1572.96	1573.33	1573.68	1573.97	1574.18	1574.38	1574.70	1575.31	1577.80	
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.48	1.47	1.47		1.50	1.50	1.50	1.50	1.51	1.50	1.52	1.50	1.49	1.50	1.49		1.52	1.51	1.51	1.51	1.51	1.50	1.52	1.52		1.50	1.47	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.58
HGL(m)	1607.02	1606.99	1606.97	1606.94	1606.91	1606.89	1606.86	1606.83	1606.81	1606.78	1606.75	1606.73	1606.70	1606.67	1606.65	1606.62	1606.60	1606.57	1606.54	1606.52	1606.49	1606.46	1606.44	1606.41	1606.38	1606.36	1606.33	1606.30	1606.28	1606.25	1606.22	1606.20	1606.17	1606.14	1606.12	1606.09	1606.07	1606.04	1606.01
TYPE OF PIPE AND SIZE	PN12.5 OD 180MM HDPE PIPE																																						

Kagioini–Kanyokora Kianjiru RWGM
SCALE: HOR 1:2000 VERT 1:1000

NOTES

1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
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LEGEND:

- PROPOSED PIPELINE
- EXISTING GROUND PROFILE
- PIPE INVERT PROFILE
- EXISTING ROAD
- AIR VALVE
- DAV – DOUBLE AIR VALVE
- WASHOUT
- WO1 – WASHOUT TYPE 1
- WO2 – WASHOUT TYPE 2
- DN – NOMINAL DIAMETER
- PN – NOMINAL PRESSURE
- VB – VERTICAL BEND
- HB – HORIZONTAL BEND
- EXISTING STRUCTURE
- ER – EARTH ROAD
- GR – GRAVEL ROAD
- CUT

FOR TENDERING
signed
REVISIONS

REV	DESCRIPTION	DESIGNATION	DATE	CHECKED BY	APPROVED BY

CLIENT:

CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

PROPOSED PROJECT:

KANYOKORA WATER SUPPLY PROJECT

ENGINEER:

CHIEF MANAGER TECHNICAL SERVICES
TANA WATER WORKS DEVELOPMENT AGENCY
MAJI HOUSE, BADEN POWELL ROAD
P.O.Box 1292 - 10100
NYERI, KENYA

DRG No. **TWWDA/KYWSP/KRWM-4**

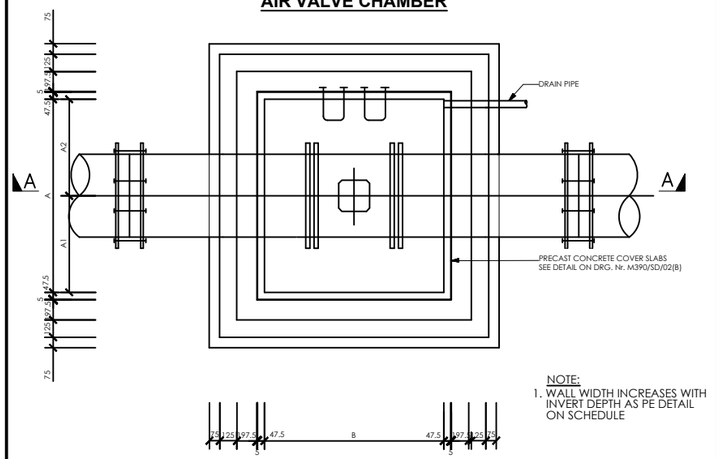
SHEET No. **SHEET 4 OF 4**

DRAWING TITLE:

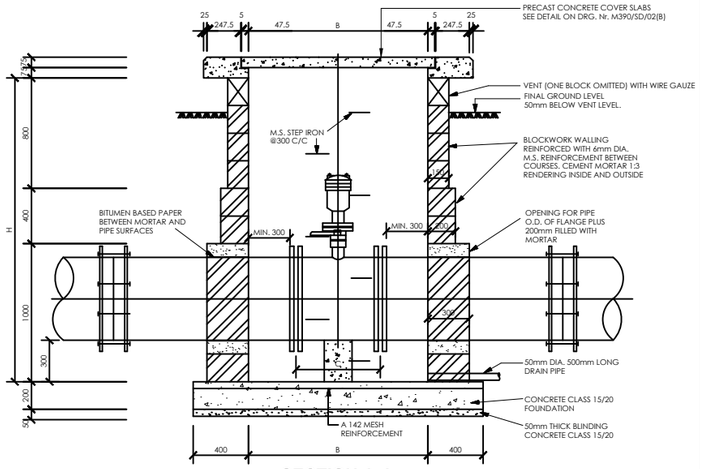
PLAN AND PROFILE LAYOUT
KAGIOINI KANYOKORA RWGM

Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by: D.M.N
Scale: 1 : 2000	Date: MAY 2026

AIR VALVE CHAMBER

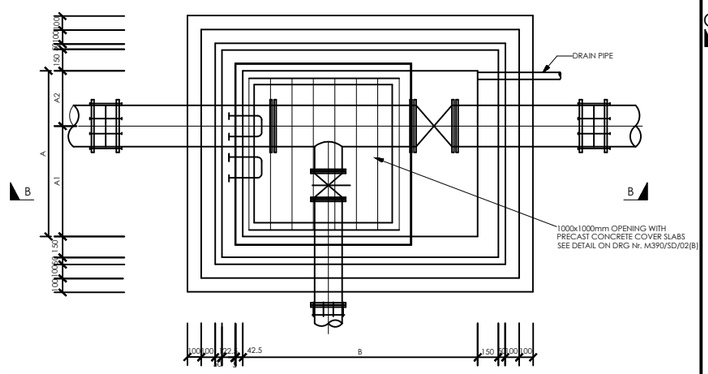


PLAN OF CHAMBER
SCALE 1:40

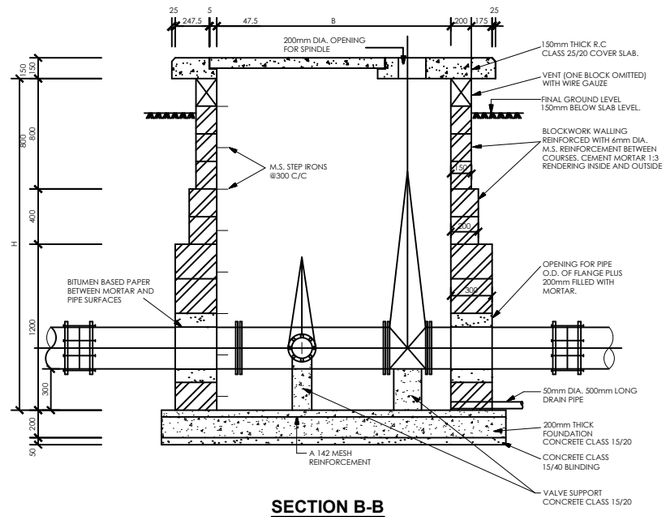


SECTION A-A
SCALE 1:40

VALVE CHAMBER DETAILS AT JUNCTIONS

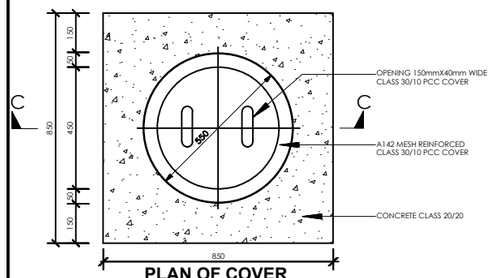


PLAN OF CHAMBER
SCALE 1:40

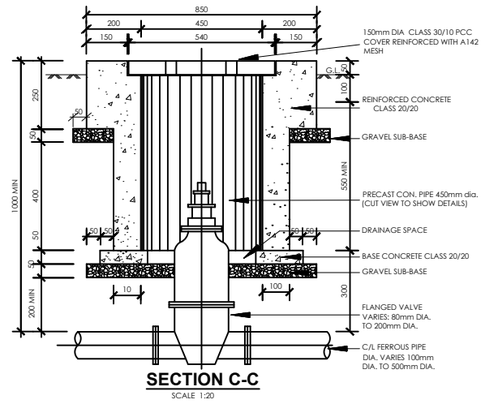


SECTION B-B
SCALE 1:40

VALVE BOX DETAIL FOR WASHOUT/VALVE

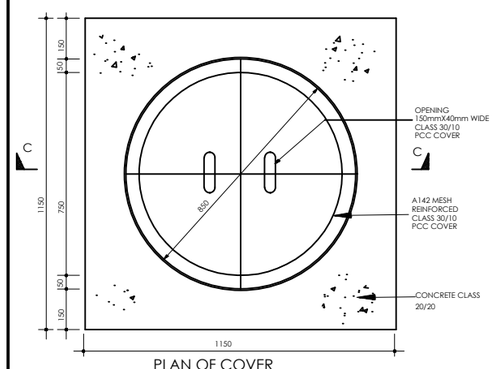


PLAN OF COVER
SCALE 1:20

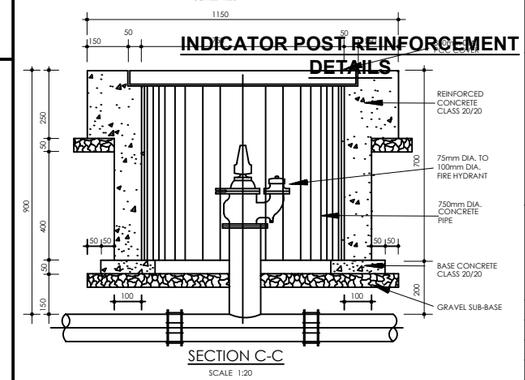


SECTION C-C
SCALE 1:20

VALVE BOX DETAIL FOR FIRE HYDRANT



PLAN OF COVER
SCALE 1:20



SECTION C-C
SCALE 1:20

CONSTRUCTION DETAILS FOR VALVE CHAMBERS

MAINS DIAMETER (mm)	PLAN SIZE OF CHAMBER (INTERNAL DIMENSIONS) A(mm) x B(mm)
100	1200 x 1200
150	1200 x 1200
200	1400 x 1200
250	1500 x 1200
300	1500 x 1200
350	1800 x 1200
400	1800 x 1200
450	1400 x 1400
500	1400 x 1200

CHAMBER SIZE SCHEDULE FOR VARIOUS PIPE SIZES

INVERT DEPTHS (mm)	HEIGHT OF WALL (mm)	WALL WIDTH (mm)
0 - 800	800	150 - MASONRY WALL
800 - 1200	400	200 - MASONRY WALL
1200 - 2400	1200	300 - MASONRY WALL
2400 - 3000	600	350 - MASONRY WALL
DEPTH MORE THAN 3000	-	300mm REINFORCED CONCRETE (CLASS 25/20) WALL

CHAMBER DEPTHS & WALL THICKNESS SCHDULE

INDICATOR POST REINFORCEMENT DETAILS

NOTES

1. DIMENSIONS ARE SHOWN IN MILIMETRES UNLESS OTHERWISE STATED

ABBREVIATIONS

P.C.C. - PRECAST CONCRETE
mm - MILLIMETRES
O.D. - OUTSIDE DIAMETER
M.S. - MILD STEEL
DIA. - DIAMETER
NO. - NUMBER
R.C. - REINFORCED CONCRETE
c/c - CENTRE TO CENTRE

FOR TENDERING

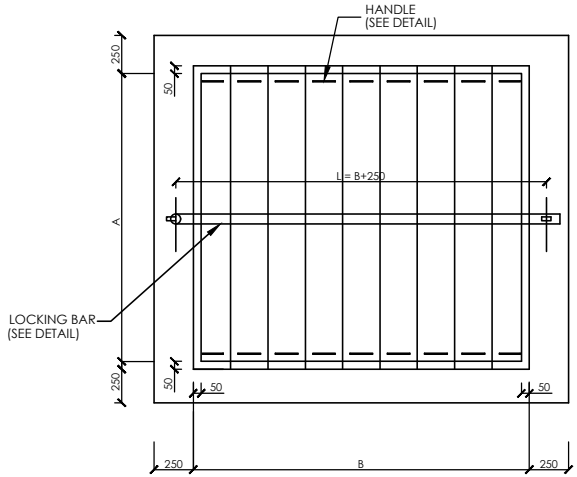
CLIENT:
THE CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
P.O. BOX 1292 - 10100
NYERI, KENYA

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

PROJECT TITLE:
KANYOKORA WATER SUPPLY PROJECT

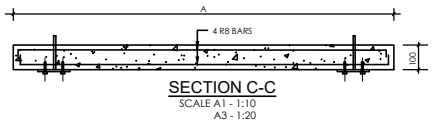
DETAILS OF DRAWING:
STANDARD DRAWINGS
DETAILS OF VALVE CHAMBERS

Designed by: M.M.M	Drawn by: M.M.M
Checked by: ENG/TLMS	Approved by: D.M.N
Scale: 1:100	Date: MAY 2026
ACAD File:	
DRG No. TWWDA/VC-1	REV



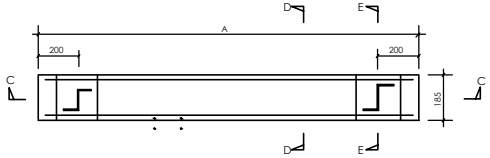
COVER FOR AIR VALVE CHAMBERS

SCALE A1 - 1:10
A3 - 1:20

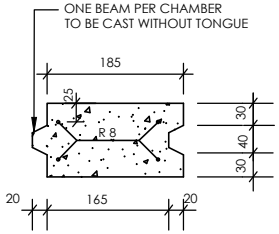


SECTION C-C

SCALE A1 - 1:10
A3 - 1:20

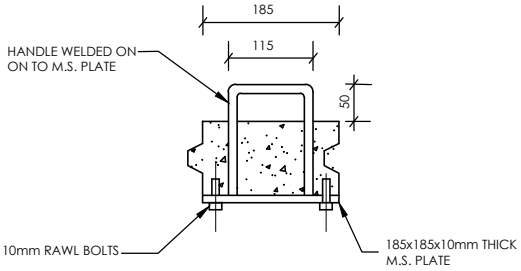


PLAN



SECTION D-D

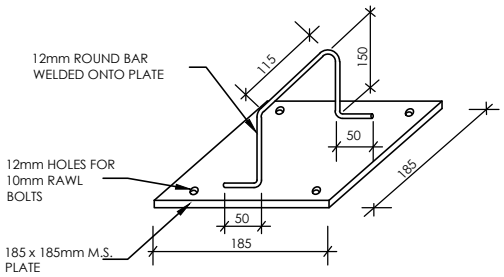
NTS



SECTION E-E

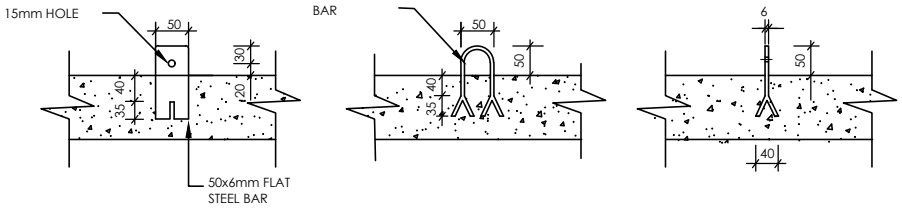
NTS

DETAIL OF PRECAST CONCRETE COVER SLAB



DETAIL OF HANDLE

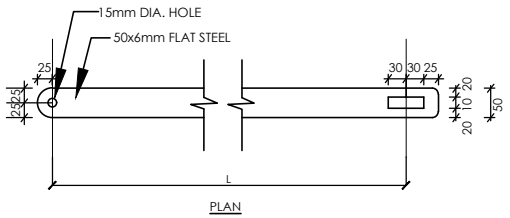
NTS



SECTIONS

COVER SIZE SCHDULE

CHAMBER INTERNAL DIMENSIONS (mm)	SIZE OF COVER A (mm) x B(mm)
1200 X 1200	1300 X 1300
1200 X 1200	1300 X 1300
1400 X 1200	1500 X 1500
1500 X 1200	1600 X 1300
1500 X 1200	1600 X 1300
1800 X 1200	1900 X 1300
1800 X 1200	1900 X 1300
1400 X 1400	1500 X 1500
1400 X 1200	1500 X 1300



PLAN

DETAILS OF LOCKING BAR

NTS

NOTES

1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE STATED.

ABBREVIATIONS

M.S. = MILD STEEL.
mm - MILIMETER
Dia. - DIAMETER
NTS - NOT TO SCALE
Nr. - NUMBER

REVISIONS	DES.	DRN.	APPROVED
BY			
CHECKED			
BY			
CHECKED			
BY			
CHECKED			
BY			
CHECKED			

CLIENT:

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:

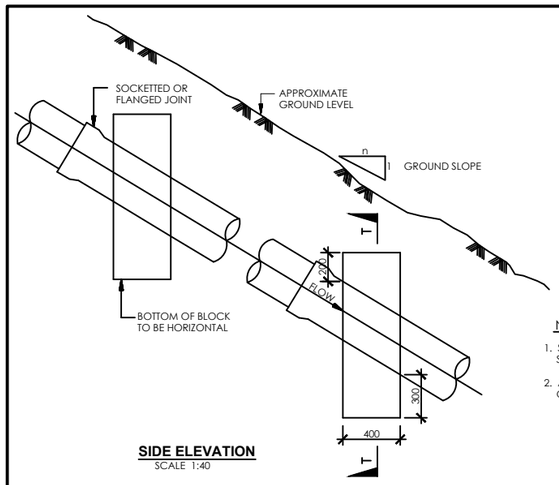
KANYOKORA WATER SUPPLY PROJECT

DRAWING TITLE:

STANDARD DRAWINGS

VALVE CHAMBER COVER DETAILS

Designed by: M.M.M	Drawn by: M.M.M
Checked by: E.W.W/K.N.G	Approved by: D.M.N
Scale: As Shown	Date: MAY 2026
DRG No.	REV

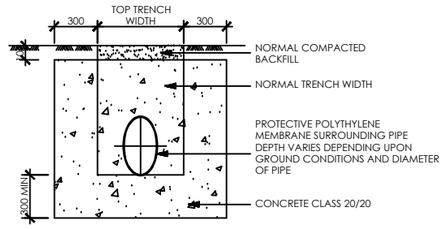


SIDE ELEVATION
SCALE 1:40

RANGE OF GROUND SLOPE (1:n)	MAXIMUM DISTANCE BETWEEN ANCHOR BLOCKS (m)
1:6 - 1:5	24
1:5 - 1:4	18
1:4 - 1:2	12
>1:2	EVERY PIPE LENGTH TO BE ANCHORED (BASED ON PIPE LENGTH OF 6m)

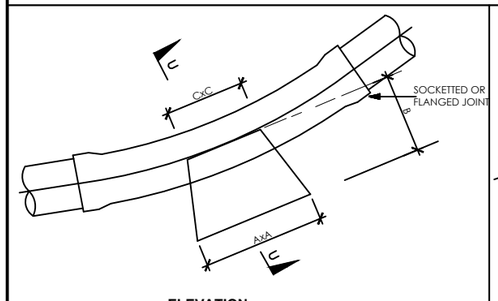
NOTES

1. SOCKETTED JOINT ARE LAID WITH SOCKET FACING UPSTREAM OF GRADE
2. ANCHOR BLOCK ARE CONSTRUCTED ON LOWER SIDE OF JOINT

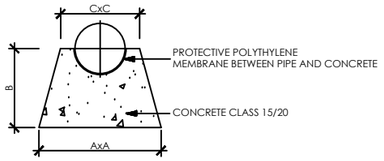


SECTION T-T
SCALE 1:40

ANCHOR BLOCK FOR STEEP GRADIENTS (SLOPES>1:6)

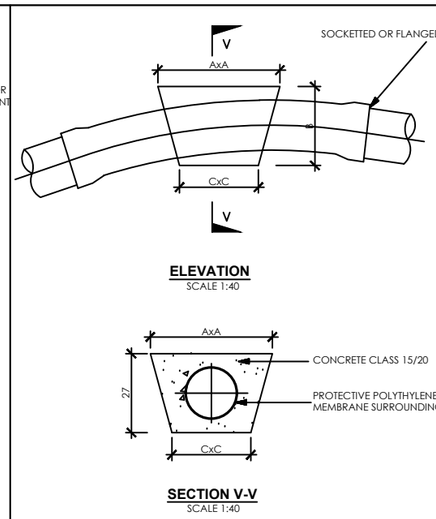


ELEVATION
SCALE 1:40



SECTION U-U
SCALE 1:40

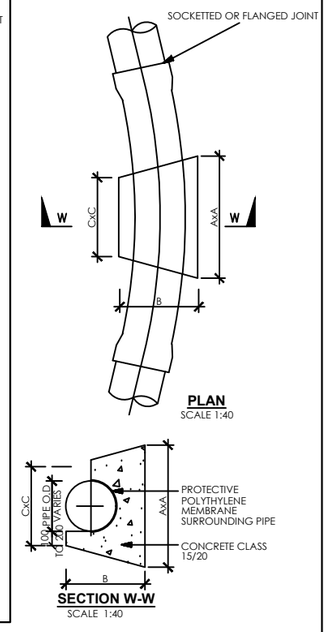
THRUST BLOCKS ON VERTICAL BENDS (DOWN-THRUST)



ELEVATION
SCALE 1:40

SECTION V-V
SCALE 1:40

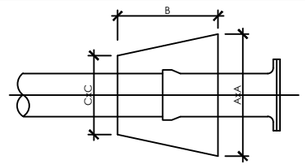
THRUST BLOCKS ON VERTICAL BENDS (UP-THRUST)



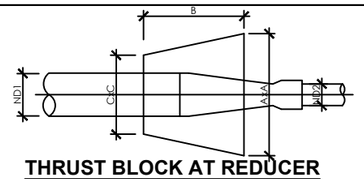
PLAN
SCALE 1:40

SECTION W-W
SCALE 1:40

THRUST BLOCK ON HORIZONTAL BENDS AND TEES



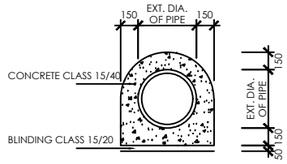
THRUST BLOCK AT CAPPED ENDS
SCALE 1:40



THRUST BLOCK AT REDUCER
SCALE 1:40

(ND) NOMINAL DIAMETER (mm)	THRUST BLOCK DIMENSIONS AxBxC(m), CONCRETE VOLUME (m³)						
	11 1/4° BENDS	22 1/2° BENDS	30°BENDS	45°BENDS	CAPPED ENDS & 90°TEES	90°BENDS	REDUCERS ND=NDT-ND2
80	0.2x0.2x0.2 (0.01m³)	0.25x0.2x0.2 (0.01m³)	0.25x0.2x0.2 (0.01m³)	0.3x0.2x0.2 (0.02m³)	0.35x0.2x0.2 (0.02m³)	0.4x0.2x0.2 (0.02m³)	0.35x0.2x0.2 (0.02m³)
100	0.2x0.2x0.2 (0.01m³)	0.3x0.2x0.2 (0.02m³)	0.35x0.2x0.2 (0.02m³)	0.4x0.2x0.2 (0.02m³)	0.45x0.25x0.25 (0.04m³)	0.55x0.3x0.3 (0.06m³)	0.45x0.25x0.25 (0.04m³)
150	0.3x0.25x0.25 (0.02m³)	0.4x0.25x0.25 (0.03m³)	0.5x0.3x0.3 (0.05m³)	0.55x0.3x0.3 (0.06m³)	0.65x0.35x0.35 (0.10m³)	0.8x0.4x0.35 (0.16m³)	0.65x0.35x0.35 (0.10m³)
200	0.4x0.3x0.3 (0.04m³)	0.55x0.35x0.35 (0.08m³)	0.6x0.4x0.4 (0.11m³)	0.75x0.4x0.4 (0.15m³)	0.85x0.45x0.4 (0.20m³)	1.0x0.5x0.4 (0.29m³)	0.85x0.45x0.4 (0.20m³)
250	0.5x0.35x0.35 (0.07m³)	0.65x0.4x0.4 (0.12m³)	0.75x0.45x0.45 (0.18m³)	0.9x0.45x0.45 (0.23m³)	1.1x0.55x0.45 (0.39m³)	1.2x0.6x0.45 (0.50m³)	1.1x0.55x0.45 (0.39m³)
300	0.55x0.45x0.45 (0.12m³)	0.8x0.5x0.5 (0.23m³)	0.9x0.5x0.5 (0.27m³)	1.1x0.6x0.5 (0.44m³)	1.25x0.65x0.5 (0.59m³)	1.5x0.75x0.5 (0.94m³)	1.25x0.65x0.5 (0.59m³)
350	0.6x0.5x0.5 (0.16m³)	0.85x0.55x0.55 (0.29m³)	1.0x0.55x0.55 (0.36m³)	1.2x0.6x0.55 (0.53m³)	1.4x0.7x0.55 (0.80m³)	1.6x0.8x0.55 (1.20m³)	1.4x0.7x0.55 (0.80m³)
400	0.7x0.6x0.6 (0.26m³)	0.95x0.6x0.6 (0.38m³)	1.1x0.6x0.6 (0.47m³)	1.3x0.65x0.6 (0.67m³)	1.6x0.8x0.6 (1.20m³)	1.8x0.9x0.6 (1.60m³)	1.6x0.8x0.6 (1.20m³)
450	0.8x0.65x0.65 (0.35m³)	1.1x0.65x0.65 (0.53m³)	1.3x0.65x0.65 (0.69m³)	1.5x0.75x0.65 (1.0m³)	1.8x0.9x0.65 (1.7m³)	2.0x1.0x0.65 (2.2m³)	1.8x0.9x0.65 (1.7m³)
500	0.9x0.7x0.7 (0.46m³)	1.2x0.7x0.7 (0.68m³)	1.4x0.7x0.7 (0.86m³)	1.7x0.85x0.7 (1.5m³)	2.0x1.0x0.7 (2.3m³)	2.3x1.2x0.7 (3.5m³)	2.0x1.0x0.7 (2.3m³)
600	1.1x0.8x0.8 (0.74m³)	1.5x0.8x0.8 (1.2m³)	1.7x0.9x0.8 (1.6m³)	2.0x1.0x0.8 (2.3m³)	2.3x1.2x0.8 (3.6m³)	2.7x1.4x0.8 (5.6m³)	2.3x1.2x0.8 (3.6m³)

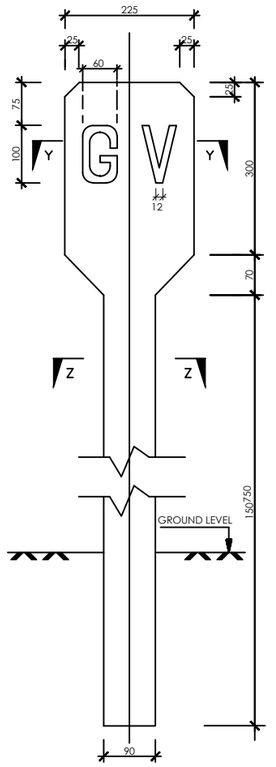
NOTE:- THE ABOVE VALUES APPLY FOR SOCKETTED uPVC AND FLANGED OR COUPLED LINED STEEL PIPES SUBJECT TO A WORKING PRESSURE HEAD OF 12 BAR



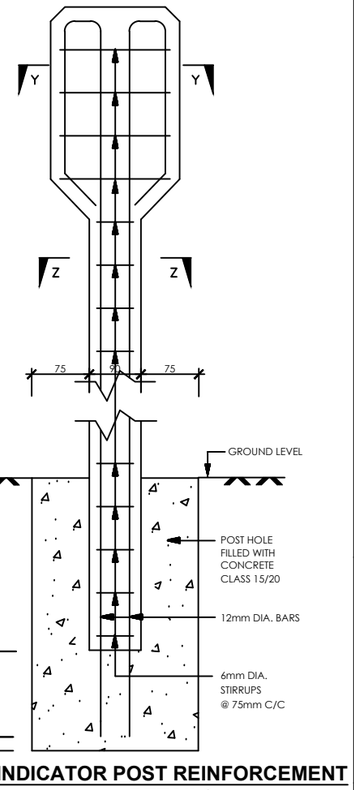
TYPE 'C'
SCALE 1: 50

PIPE DIAMETER mm	PIPE WALL THICKNESS mm	HAUNCH TYPE 'C'	
		100mmBED	150mmBED
100	25.4	0.1431	0.1666
150	25.4	0.1706	0.1968
225	28.57	0.2155	0.2450
300	31.75	0.2617	0.2965
375	34.92	0.3094	0.3485
450	38.10	0.3623	0.4059
525	44.45	0.4169	0.4652
600	50.80	0.4731	0.5259
675	53.98	0.5270	0.5841
750	57.15	0.5823	0.6436
900	63.50	0.6973	0.7672
1050	69.85	0.8181	0.8977
1200	76.20	0.9448	1.0318

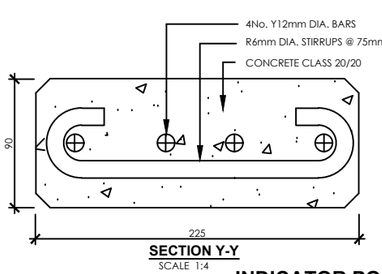
CONCRETE QUANTITIES IN BED AND SURROUNDS FOR O. G. CONCRETE PIPES (CU.M.PER LIN. METER)



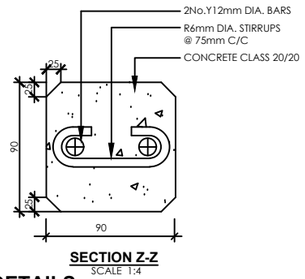
GATE VALVE INDICATOR POST
SCALE 1:10



INDICATOR POST REINFORCEMENT DETAILS
SCALE 1:10



SECTION Y-Y
SCALE 1:4



SECTION Z-Z
SCALE 1:4

INDICATOR POST DETAILS

NOTES

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED
2. ANCHOR BLOCKS INSTALLED FOR PIPES LAID AT SLOPES EXCEEDING 1:6 SLOPE
3. THRUST BLOCKS INSTALLED AT ALL HORIZONTAL AND VERTICAL BENDS, CAPPED ENDS, TEES, TAPERS AND GATE VALVES
4. DETAILS FOR ALL INDICATOR POSTS ARE AS FOR GATE VALVE BUT LETTERING TO BE AS FOLLOWS:

FOR	USE
GATE VALVE	GV
AIR VALVE	AV
WASHOUT	WO
WATER MAIN	WM
BULK METER	M
'Y'- JUNCTION	Y

5. ALL INDICATOR POSTS ARE PAINTED WITH 2 COATS BLUE OIL BASED PAINT AND WHITE LETTERING TO ENGINEER'S APPROVAL

ABBREVIATIONS

mm - MILLIMETRES
OD - OUTSIDE DIAMETER
ND - NOMINAL DIAMETR
Dia - DIAMETER
c/c - CENTRE TO CENTRE
No. - NUMBER
uPVC - UNPLASTICISED POLYVINYL CHLORIDE
m - METRE
℄ - CENTRE LINE
GV - GATE VALVE
AV - AIR VALVE
WO - WASH OUT
WM - WATER MAIN
M - BULK METER
m^3 - CUBIC METER

FOR TENDERING

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

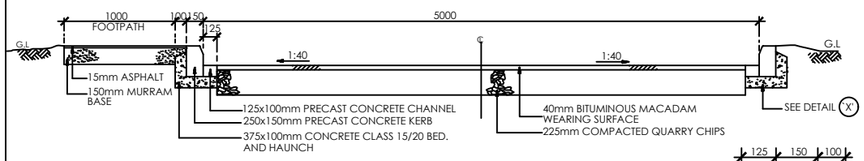
ENGINEER: THE CHIEF MANAGER TECHNICAL SERVICES
TANA WATER WORKS DEVELOPMENT AGENCY
P.O. BOX 1292 - 10100
NYERI, KENYA

PROJECT TITLE:
KANYOKORA WATER SUPPLY PROJECT

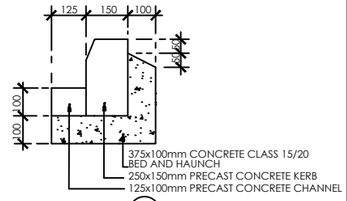
DETAILS OF DRAWING:
STANDARD DRAWINGS
DETAILS OF THRUST BLOCKS & INDICATOR POSTS.

Designed by: M.M.M	Drawn by: M.M.M
Checked by: EKM/KMG	Approved by: D.M.N
Scale: 1:100	Date: MAY 2026
ACAD File:	
DRG No. TWWDA/IP-1	REV

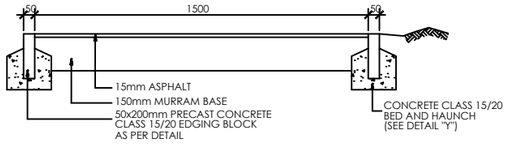
TYPICAL BITUMINOUS ROAD DETAILS



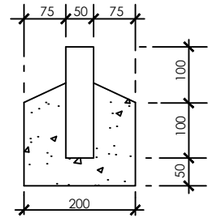
TYPICAL SECTION OF BITUMINOUS ROAD
SCALE 1:50



DETAIL 'X'
SCALE 1:20

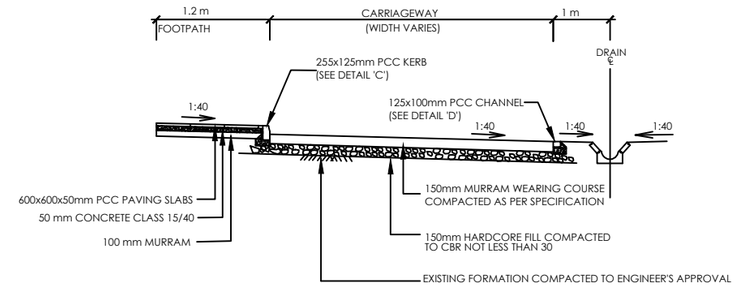


TYPICAL SECTION OF FOOTPATH
SCALE 1:25

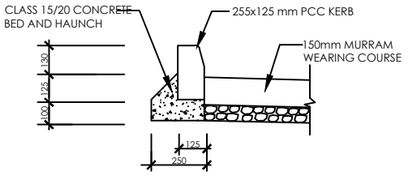


DETAIL 'Y'
SCALE 1:10

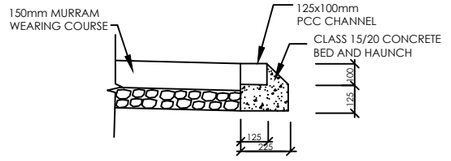
TYPICAL MURRAM ROAD DETAILS



TYPICAL SECTION OF MURRAM ROAD
SCALE 1: 50



DETAIL 'C'
TYPICAL DETAIL OF KERB
SCALE 1:25



DETAIL 'D'
TYPICAL DETAIL OF CHANNEL
SCALE 1:25

NOTE

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED

ABBREVIATIONS

℄ - CENTRE LINE

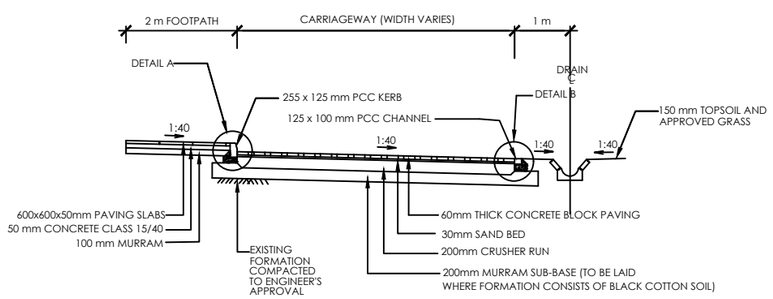
mm - MILIMETER

G.L. - GROUND LEVEL

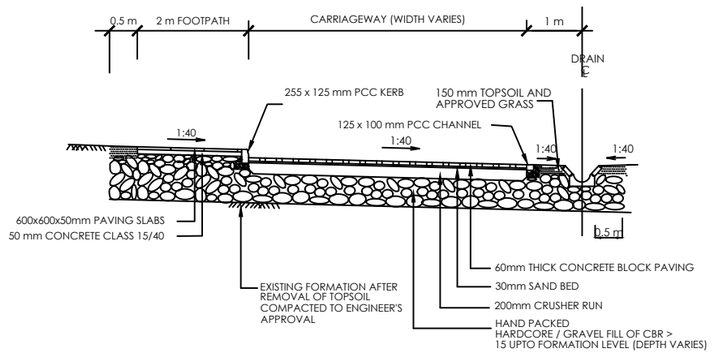
m - METER

PCC - PRECAST CEMENT CONCRETE

TYPICAL CONCRETE BLOCKS SURFACE ROAD DETAILS

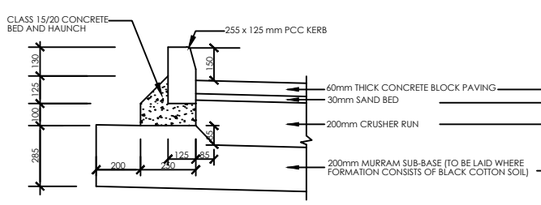


TYPICAL CROSS SECTION FOR CARRIAGEWAY IN CUT
SCALE 1:100



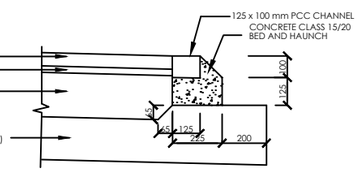
TYPICAL CROSS SECTION FOR CARRIAGEWAY IN FILL
SCALE 1:100

DETAIL A



DETAIL OF KERB
SCALE 1:25

DETAIL B



DETAIL OF CHANNEL
SCALE 1:25

REVISIONS		SIGN	DATE	APPROVED
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			

CLIENT:

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:

KANYOKORA WATER SUPPLY PROJECT

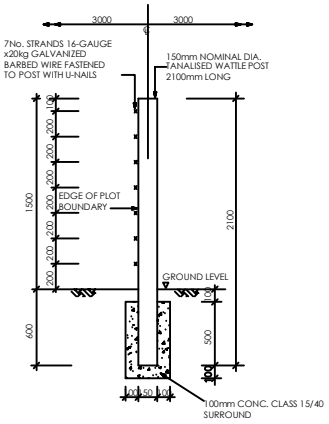
DRAWING TITLE:

STANDARD DRAWINGS

TYPICAL ROAD CROSS SECTION DETAILS

Designed by:	M.M.M	Drawn by:	M.M.M
Checked by:	E.W.W/K.N.G	Approved by:	D.M.N
Scale:	As Shown	Date:	MAY 2026
DRG No.		REV	

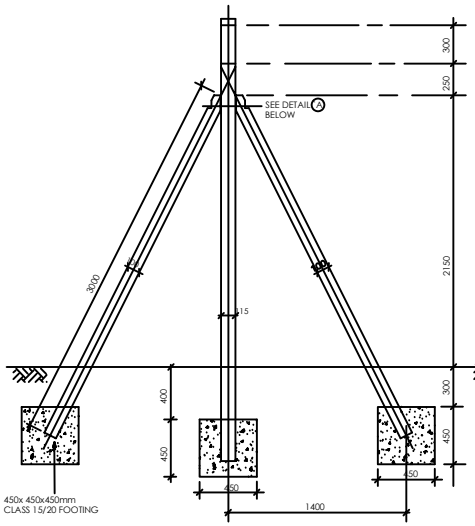
DETAILS OF WATTLE POSTS FOR BARBED WIRE FENCE



TYPICAL END ELEVATION - SINGLE POST (AT 3.0m CENTRES)

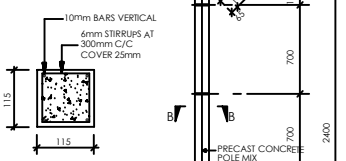
(NTS)

DETAILS OF PRECAST CONCRETE POSTS FOR CHAIN LINK FENCE



DETAILS OF STRAINING POST FOR CHAIN LINK FENCE AT 33.3m Cts.

SCALE 1:40



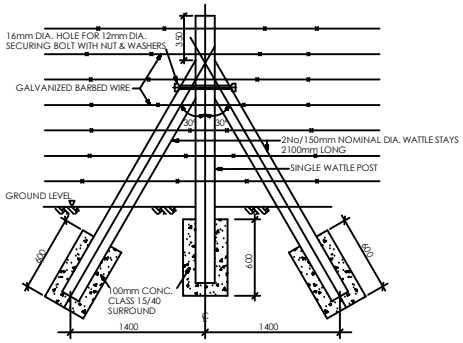
SECTION B - B

SCALE 1:10

NOTE:
CONCRETE EDGES OF POSTS TO HAVE 25x25mm CHAMFER

DETAILS OF SINGLE P.C.C. POST AT 3.30m Cts.

SCALE 1:40

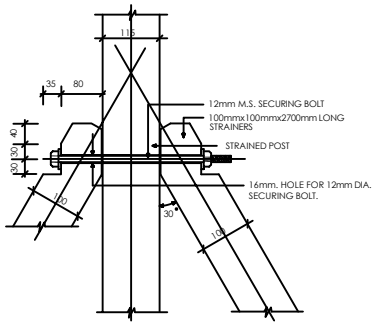


TYPICAL FRONT ELEVATION - STAYED POST (STAYS PROVIDED AT 30.0m c/c AND AT CORNERS

(NTS)

NOTES

a) ALL CORNER POSTS AND EVERY 10th SINGLE POST HAVE 2No. STAYS
b) POSTS AT 3000mm CENTRES
c) TOP OF ALL POSTS ARE KEPT IN UNIFORM LINE
d) EXTENT OF FENCING IS SHOWN ON THE LAYOUT PLAN
e) N.T.S = NOT TO SCALE

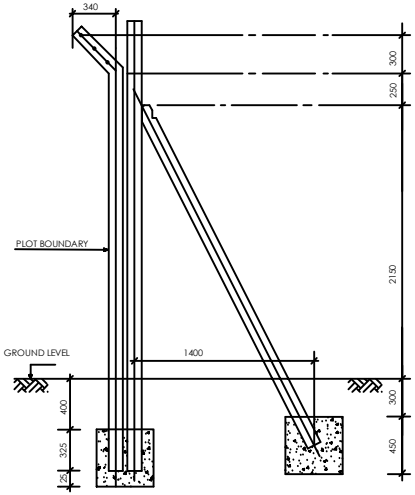


DETAIL A

SCALE 1:10

NOTES

a) POST AT 3300mm CENTRES
c) TOP OF ALL POSTS KEPT IN UNIFORM LINE.



DETAILS OF CORNER POSTS

SCALE 1:40

NOTES

a) CONCRETE MIXES ARE AS FOLLOWS:
1. POSTS CLASS 20/20
2. STRAINER POSTS CLASS 20/20
3. FOUNDATION BLOCK CLASS 15/20 CONC.

b) CHAIN LINK IS IN GAUGE 12 GALVANISED STEEL WIRE.

c) STRAINING WIRES ARE 12 GAUGE GALVANISED STEEL PLAIN WIRES.

d) WIRES ON CRANK ARE 12 GAUGE GALVANISED STEEL BARBED WIRE.

e) STRAINING WIRES FIXED TO POST WITH GALVANIZED HOOK BOLTS 8mm DIA. x 60mm LONG
WHERE THE POST ENCROACHES ON PRIVATE LAND THE FENCE IS ERECTED WITH CRANK POINTING INTO THE SITE.

f) ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE STATED.

g) ALL EXPOSED CONCRETE EDGES OF POSTS HAVE 25x25mm CHAMFER

ABBREVIATIONS

C/C = CENTRE TO CENTRE.
Cts. = CENTRES.
M.S. = MILD STEEL.
P.C.C = PRECAST CEMENT CONCRETE.
CONC. - CONCRETE
mm - MILIMETER
uPVC - UNPLASTICISED POLYVINYL CHLORIDE
Dia. - DIAMETER
Kg - KILOGRAMME
℄ - CENTRE LINE
m - METRE
NTS - NOT TO SCALE
Nr. - NUMBER

FOR TENDERING
signed

REV	REVISIONS	SIGN	DATE	APPROVED
REV-	BY			
	CHECKED			
REV-	BY			
	CHECKED			
REV-	BY			
	CHECKED			
REV-	BY			
	CHECKED			

CLIENT

TANA WATER WORKS DEVELOPMENT AGENCY
P. O. BOX 1292-10100
NYERI

PROJECT

KANYOKORA WATER SUPPLY PROJECT

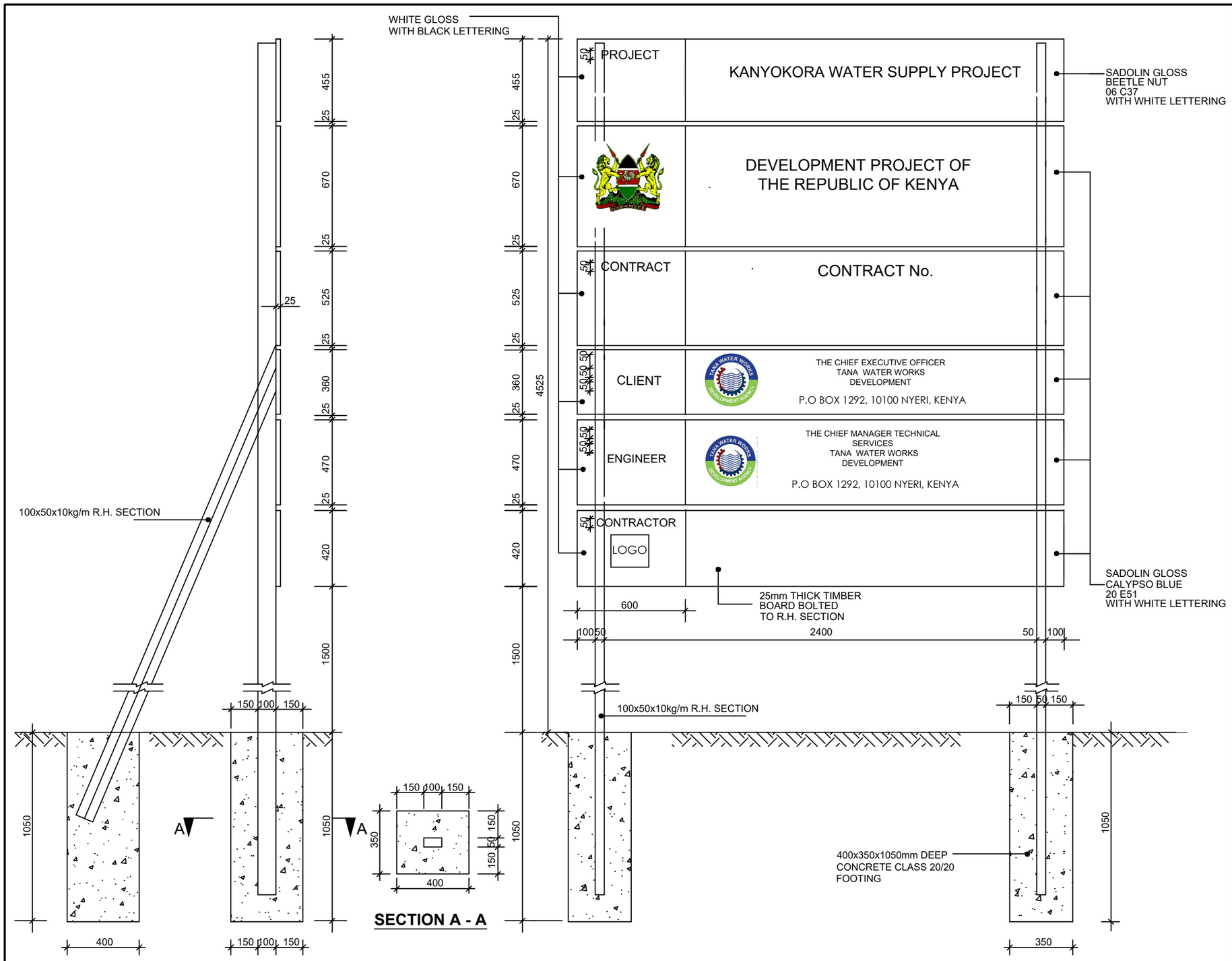
Civil/Structural Engineers

TANA WATER WORKS DEVELOPMENT AGENCY
P. O. BOX 1292-10100
NYERI

Drawing Title

FENCE STANDARD DRAWING

Designed by: MMM	Drawn by: MMM
Checked: EWW/KNG	Approved by: DMN
Scale 1:100	Date MAY2026
Job No. 1.0	ACAD File: ACADFILENAME
PD STATUS	DRAWING No. TWWDA/KYWSP/F-SD1 REV REV



NOTES

1. FINAL WORDING ON SIGN BOARD TO BE DECIDED AND APPROVED IN CONSULTATION WITH THE EMPLOYER PRIOR TO FABRICATION OF THE SIGN BOARD
2. DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED

REVISIONS			

CLIENT: **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:
KANYOKORA WATER SUPPLY PROJECT

DRAWING TITLE:
STANDARD DRAWINGS
PROJECT SIGNBOARD DETAILS

Designed by:	M.M.M	Drawn by:	M.M.M
Checked by:	E.W.W/K.N.G	Approved by:	D.M.N
Scale:	1:25	Date:	MAY 2026
DRG No.		REV	