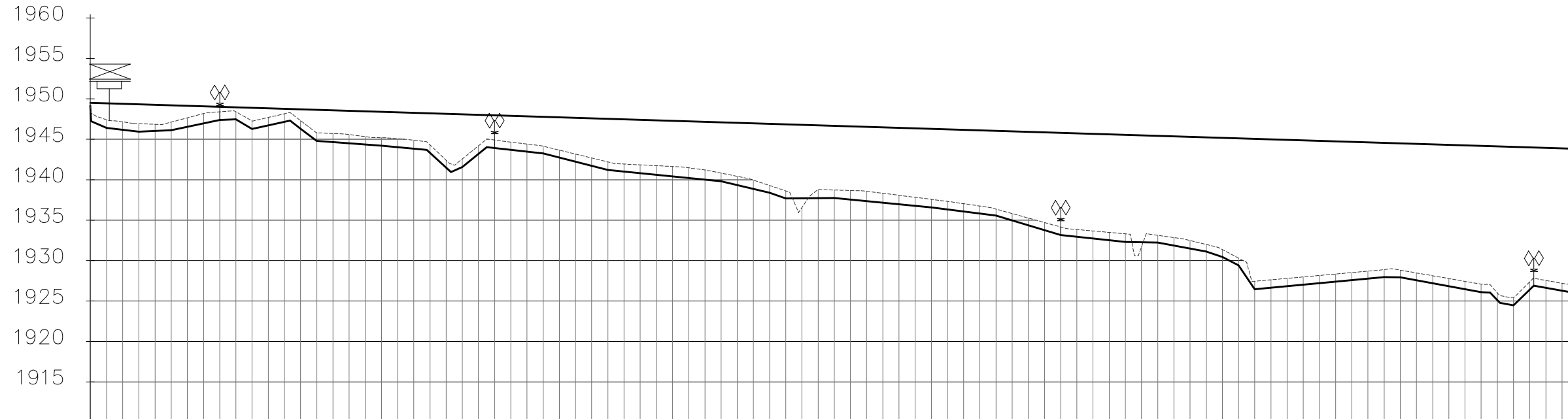


MATCH LINE AT STATION - NEXT SHEET -

- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
  - 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.
  - ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
  - 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
  - DOUBLE AIR VALVE
  - WASHOUT
  - W01 - WASHOUT TYPE 1
  - W02 - 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 CONSTRUCTION  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			
CO	ISSUED FOR CONSTRUCTION	BY		
		CHECKED		

CLIENT

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

PROJECT

AUGMENTATION OF TIGITHI-HUMUKA  
WATER PROJECT

Civil/Structural Engineers

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

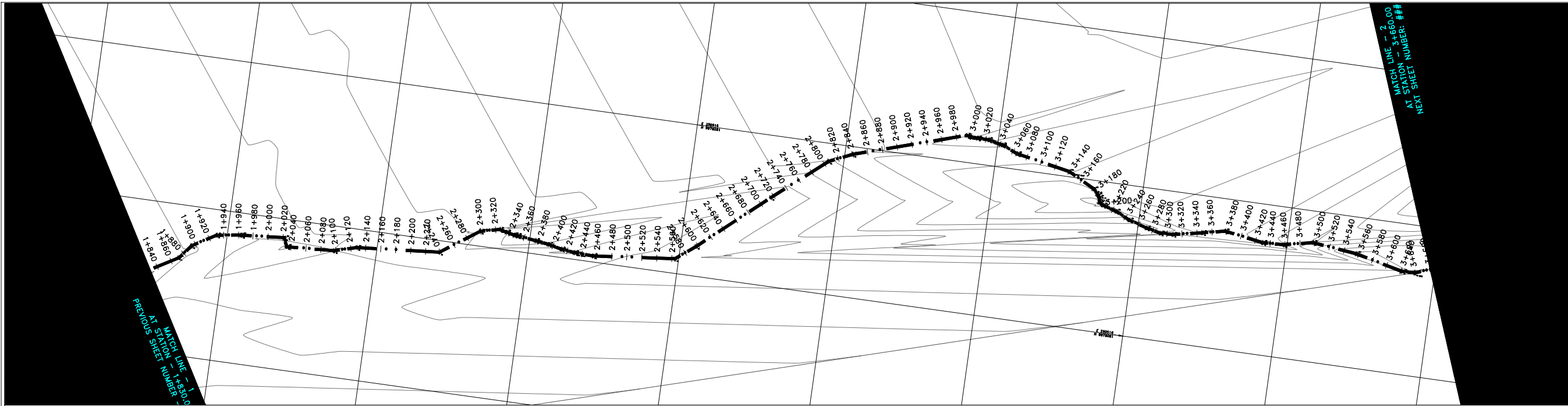
Drawing Title

TIGITHI INTAKE TO WAMANI TANK  
LINE  
PLAN AND PROFILE (SHEET 1 OF 8)

Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/01
	CO REV

DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	FLOW DATA	TYPE OF PIPE AND SIZE
1949.51	1949.18	1949.21	0.03	1949.00		
1949.45	1.00	1946.42	1947.42	0+020.00		
1949.38	0.98	1946.17	1947.15	0+040.00		
1949.32	1.00	1945.93	1946.93	0+060.00		
1949.26	0.83	1946.03	1946.86	0+080.00		
1949.20	1.00	1946.13	1947.13	0+100.00		
1949.14	1.11	1946.55	1947.66	0+120.00		
1949.07	1.21	1946.98	1948.19	0+140.00		
1949.01	1.00	1947.40	1948.40	0+160.00		
1948.95	0.93	1947.47	1948.40	0+180.00		
1948.89	1.00	1946.28	1947.28	0+200.00		
1948.83	0.98	1946.72	1947.70	0+220.00		
1948.76	1.00	1947.16	1948.16	0+240.00		
1948.70	1.00	1946.31	1947.31	0+260.00		
1948.64	1.00	1944.81	1945.81	0+280.00		
1948.58	1.06	1944.66	1945.72	0+300.00		
1948.52	1.09	1944.50	1945.59	0+320.00		
1948.45	0.98	1944.35	1945.33	0+340.00		
1948.39	1.00	1944.20	1945.20	0+360.00		
1948.33	1.05	1944.02	1945.07	0+380.00		
1948.27	1.05	1943.84	1944.89	0+400.00		
1948.21	0.98	1943.32	1944.31	0+420.00		
1948.14	0.91	1941.50	1942.41	0+440.00		
1948.08	1.00	1941.57	1942.57	0+460.00		
1948.02	1.00	1943.20	1944.20	0+480.00		
1947.96	0.99	1943.92	1944.91	0+500.00		
1947.90	0.96	1943.70	1944.66	0+520.00		
1947.83	0.94	1943.48	1944.41	0+540.00		
1947.77	0.90	1943.25	1944.15	0+560.00		
1947.71	0.92	1942.74	1943.67	0+580.00		
1947.65	0.95	1942.23	1943.18	0+600.00		
1947.59	0.97	1941.72	1942.69	0+620.00		
1947.53	1.00	1941.20	1942.20	0+640.00		
1947.46	0.93	1941.00	1941.94	0+660.00		
1947.40	1.03	1940.81	1941.84	0+680.00		
1947.34	1.13	1940.61	1941.74	0+700.00		
1947.28	1.23	1940.41	1941.64	0+720.00		
1947.22	1.25	1940.21	1941.47	0+740.00		
1947.15	1.20	1940.02	1941.22	0+760.00		
1947.09	1.00	1939.82	1940.82	0+780.00		
1947.03	1.08	1939.34	1940.42	0+800.00		
1946.97	1.10	1938.86	1939.96	0+820.00		
1946.91	0.91	1938.38	1939.29	0+840.00		
1946.84	0.92	1937.70	1938.62	0+860.00		
1946.78	1.15	1937.71	1936.56	0+880.00		
1946.72	1.06	1937.72	1938.78	0+900.00		
1946.66	1.00	1937.73	1938.73	0+920.00		
1946.60	1.14	1937.54	1938.67	0+940.00		
1946.53	1.23	1937.34	1938.58	0+960.00		
1946.47	1.17	1937.15	1938.33	0+980.00		
1946.41	1.12	1936.96	1938.08	1+000.00		
1946.35	1.06	1936.77	1937.83	1+020.00		
1946.29	1.00	1936.58	1937.58	1+040.00		
1946.22	1.00	1936.39	1937.33	1+060.00		
1946.16	0.96	1936.07	1937.04	1+080.00		
1946.10	0.92	1935.82	1936.75	1+100.00		
1946.04	0.80	1935.57	1936.37	1+120.00		
1945.98	0.85	1934.97	1935.82	1+140.00		
1945.91	0.90	1934.36	1935.26	1+160.00		
1945.85	0.95	1933.76	1934.71	1+180.00		
1945.79	1.00	1933.15	1934.15	1+200.00		
1945.73	0.90	1932.94	1933.84	1+220.00		
1945.67	0.94	1932.73	1933.66	1+240.00		
1945.60	0.97	1932.52	1933.49	1+260.00		
1945.54	1.00	1932.31	1933.31	1+280.00		
1945.48	0.55	1932.26	1931.71	1+300.00		
1945.42	0.91	1932.22	1933.13	1+320.00		
1945.36	1.00	1931.85	1932.85	1+340.00		
1945.29	1.00	1931.48	1932.48	1+360.00		
1945.23	0.88	1931.11	1932.00	1+380.00		
1945.17	0.91	1930.45	1931.36	1+400.00		
1945.11	0.89	1929.42	1930.31	1+420.00		
1945.05	1.00	1926.45	1927.45	1+440.00		
1944.98	0.99	1926.64	1927.63	1+460.00		
1944.92	0.98	1926.83	1927.80	1+480.00		
1944.86	0.96	1927.02	1927.98	1+500.00		
1944.80	0.95	1927.21	1928.16	1+520.00		
1944.74	0.94	1927.40	1928.34	1+540.00		
1944.67	0.93	1927.58	1928.52	1+560.00		
1944.61	0.92	1927.77	1928.70	1+580.00		
1944.55	0.91	1927.96	1928.88	1+600.00		
1944.49	0.87	1927.95	1928.82	1+620.00		
1944.43	0.90	1927.58	1928.47	1+640.00		
1944.36	0.92	1927.20	1928.13	1+660.00		
1944.30	0.95	1926.83	1927.78	1+680.00		
1944.24	0.97	1926.46	1927.43	1+700.00		
1944.18	1.00	1926.09	1927.09	1+720.00		
1944.12	0.90	1925.11	1926.01	1+740.00		
1944.05	1.00	1924.47	1925.47	1+760.00		
1943.99	0.98	1926.40	1927.38	1+780.00		
1943.93	0.91	1926.63	1927.55	1+800.00		
1943.87	0.93	1926.27	1927.20	1+820.00		

Tigithi intake to Wamani Tank  
SCALE: HOR 1:2000 VERT 1:1000




- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
  - 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.
  - ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
  - 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
  - W01 — WASHOUT TYPE 1
  - W02 — 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 CONSTRUCTION**  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY CHECKED			
	BY CHECKED			
	BY CHECKED			
CO	ISSUED FOR CONSTRUCTION BY CHECKED			

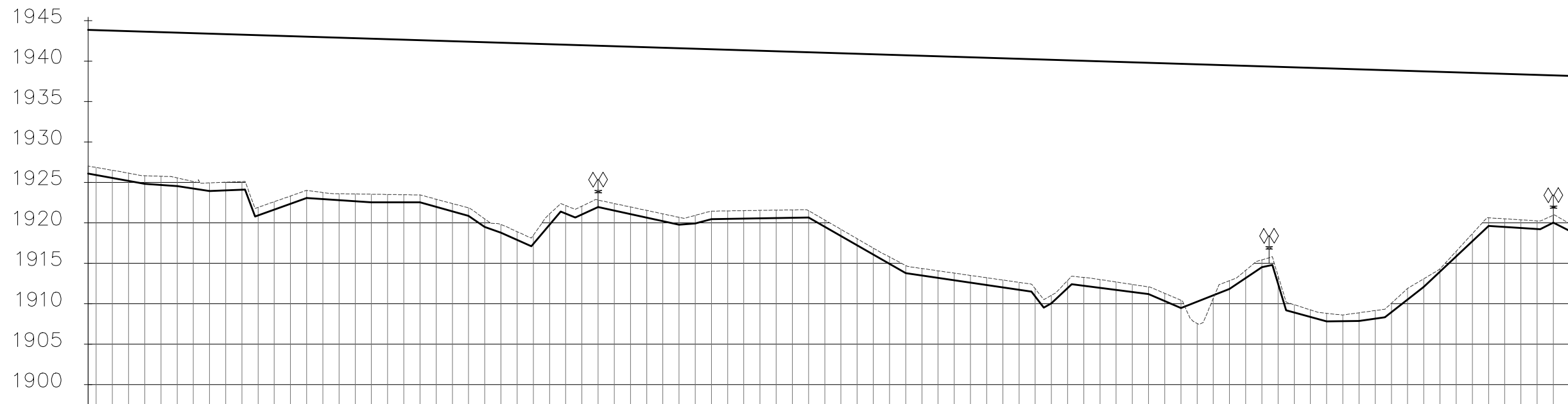
**CLIENT**  

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

**PROJECT**  
 AUGMENTATION OF TIGITHI-HUMUKA WATER PROJECT

**Civil/Structural Engineers**  

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

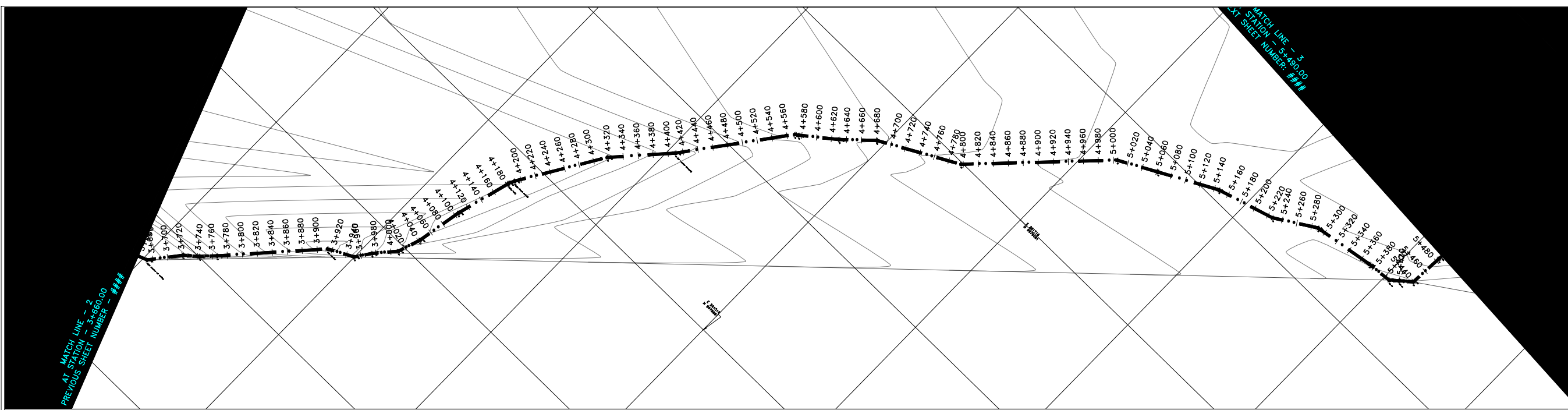
**Drawing Title**  
 TIGITHI INTAKE TO WAMANI TANK  
 LINE  
 PLAN AND PROFILE (SHEET 2 OF 8)

Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/02



DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	FLOW DATA	TYPE OF PIPE AND SIZE
1943.84	0.93	1926.09	1927.02	1+830.00		
1943.81	0.94	1925.91	1926.85	1+840.00		
1943.74	0.95	1925.55	1926.50	1+860.00		
1943.68	0.96	1925.18	1926.14	1+880.00		
1943.62	1.00	1924.82	1925.82	1+900.00		
1943.56	1.07	1924.69	1925.76	1+920.00		
1943.50	1.00	1924.55	1925.55	1+940.00		
1943.43	0.86	1924.25	1925.10	1+960.00		
1943.37	1.00	1923.94	1924.94	1+980.00		
1943.31	1.00	1924.02	1925.02	2+000.00		
1943.25	1.00	1924.10	1925.10	2+020.00		
1943.19	1.00	1920.92	1921.91	2+040.00		
1943.12	0.98	1921.63	1922.62	2+060.00		
1943.06	0.96	1922.35	1923.32	2+080.00		
1943.00	0.94	1923.07	1924.01	2+100.00		
1942.94	0.81	1922.94	1923.75	2+120.00		
1942.88	0.80	1922.80	1923.60	2+140.00		
1942.81	0.90	1922.67	1923.57	2+160.00		
1942.75	1.00	1922.54	1923.54	2+180.00		
1942.69	0.97	1922.54	1923.51	2+200.00		
1942.63	0.94	1922.54	1923.48	2+220.00		
1942.57	0.91	1922.53	1923.44	2+240.00		
1942.50	0.95	1921.97	1922.92	2+260.00		
1942.44	0.97	1921.41	1922.39	2+280.00		
1942.38	1.00	1920.85	1921.85	2+300.00		
1942.32	1.00	1919.49	1920.49	2+320.00		
1942.26	1.00	1918.79	1919.79	2+340.00		
1942.19	1.01	1917.90	1918.90	2+360.00		
1942.13	1.06	1917.41	1918.46	2+380.00		
1942.07	1.34	1919.75	1921.09	2+400.00		
1941.95	1.02	1921.04	1922.06	2+440.00		
1941.89	0.86	1921.95	1922.82	2+460.00		
1941.82	0.87	1921.52	1922.39	2+480.00		
1941.76	0.88	1921.08	1921.96	2+500.00		
1941.70	0.90	1920.64	1921.54	2+520.00		
1941.64	0.91	1920.20	1921.11	2+540.00		
1941.58	0.92	1919.77	1920.68	2+560.00		
1941.51	1.00	1919.93	1920.93	2+580.00		
1941.45	1.00	1920.45	1921.45	2+600.00		
1941.39	0.99	1920.48	1921.48	2+620.00		
1941.33	0.99	1920.52	1921.51	2+640.00		
1941.27	0.98	1920.56	1921.54	2+660.00		
1941.20	0.98	1920.60	1921.57	2+680.00		
1941.14	0.97	1920.63	1921.60	2+700.00		
1941.08	0.84	1920.67	1921.51	2+720.00		
1941.02	0.83	1919.52	1920.35	2+740.00		
1940.96	0.82	1918.38	1919.19	2+760.00		
1940.89	0.80	1917.23	1918.04	2+780.00		
1940.83	0.79	1916.09	1916.88	2+800.00		
1940.77	0.84	1914.94	1915.78	2+820.00		
1940.71	0.94	1913.80	1914.74	2+840.00		
1940.65	0.86	1913.50	1914.36	2+860.00		
1940.58	0.87	1913.21	1914.07	2+880.00		
1940.46	0.89	1912.61	1913.50	2+900.00		
1940.40	0.90	1912.32	1913.22	2+940.00		
1940.34	0.91	1912.02	1912.93	2+960.00		
1940.27	0.92	1911.73	1912.65	2+980.00		
1940.21	0.95	1910.91	1911.86	3+000.00		
1940.15	1.00	1910.05	1911.05	3+020.00		
1940.09	0.94	1911.94	1912.88	3+040.00		
1939.96	1.03	1911.96	1912.99	3+080.00		
1939.90	0.98	1911.71	1912.69	3+100.00		
1939.84	0.94	1911.45	1912.39	3+120.00		
1939.78	0.90	1911.19	1912.08	3+140.00		
1939.72	0.95	1910.33	1911.28	3+160.00		
1939.65	0.95	1909.48	1910.43	3+180.00		
1939.59	-2.70	1910.27	1907.57	3+200.00		
1939.53	-0.38	1911.06	1910.67	3+220.00		
1939.47	1.00	1911.85	1912.85	3+240.00		
1939.41	0.95	1913.18	1914.13	3+260.00		
1939.34	0.90	1914.52	1915.43	3+280.00		
1939.28	1.00	1912.46	1913.46	3+300.00		
1939.22	0.96	1908.93	1909.88	3+320.00		
1939.16	0.87	1908.38	1909.24	3+340.00		
1939.10	1.00	1907.83	1908.83	3+360.00		
1939.03	0.75	1907.86	1908.61	3+380.00		
1938.97	1.00	1907.89	1908.89	3+400.00		
1938.91	1.00	1908.16	1909.16	3+420.00		
1938.85	1.11	1908.95	1910.06	3+440.00		
1938.79	1.37	1910.52	1911.89	3+460.00		
1938.72	1.00	1912.09	1913.09	3+480.00		
1938.66	0.34	1913.97	1914.31	3+500.00		
1938.60	0.63	1915.86	1916.49	3+520.00		
1938.54	0.92	1917.74	1918.66	3+540.00		
1938.48	1.00	1919.63	1920.63	3+560.00		
1938.41	1.00	1919.50	1920.50	3+580.00		
1938.35	1.00	1919.37	1920.37	3+600.00		
1938.29	1.00	1919.24	1920.24	3+620.00		
1938.23	0.92	1920.03	1920.95	3+640.00		
1938.17	0.89	1919.02	1919.92	3+660.00		

Tigithi intake to Wamani Tank  
 SCALE: HOR 1:2000 VERT 1:1000




- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
  - 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.
  - ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
  - 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
  - W01 WASHOUT TYPE 1
  - W02 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 CONSTRUCTION  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY			
	CHECKED			
	BY			
	CHECKED			
CO	ISSUED FOR CONSTRUCTION	BY		
		CHECKED		

CLIENT




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

PROJECT

AUGMENTATION OF TIGITHI-HUMUKA  
WATER PROJECT

Civil/Structural Engineers

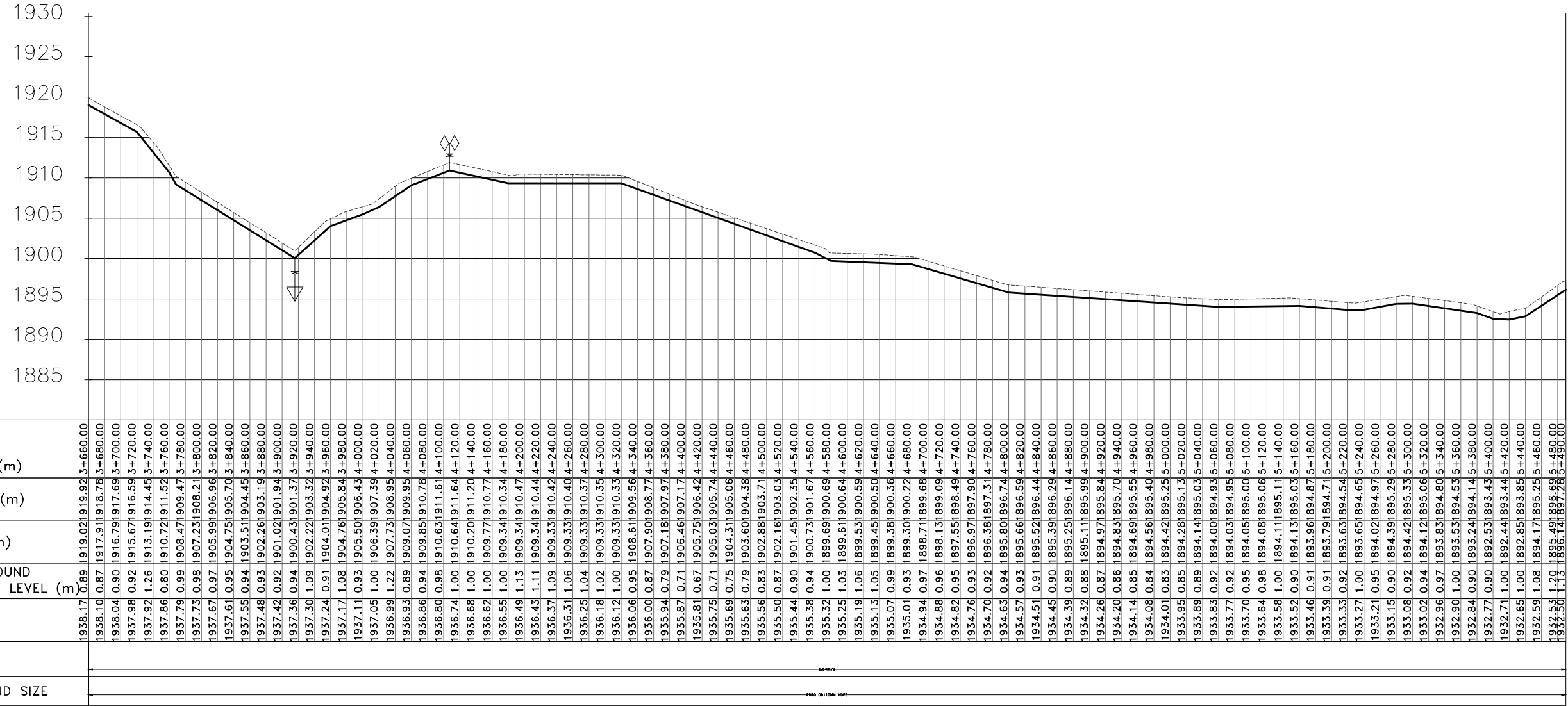


TANA WATER WORKS  
DEVELOPMENT AGENCY  
P. O. BOX 1292-10100  
NYERI

Drawing Title

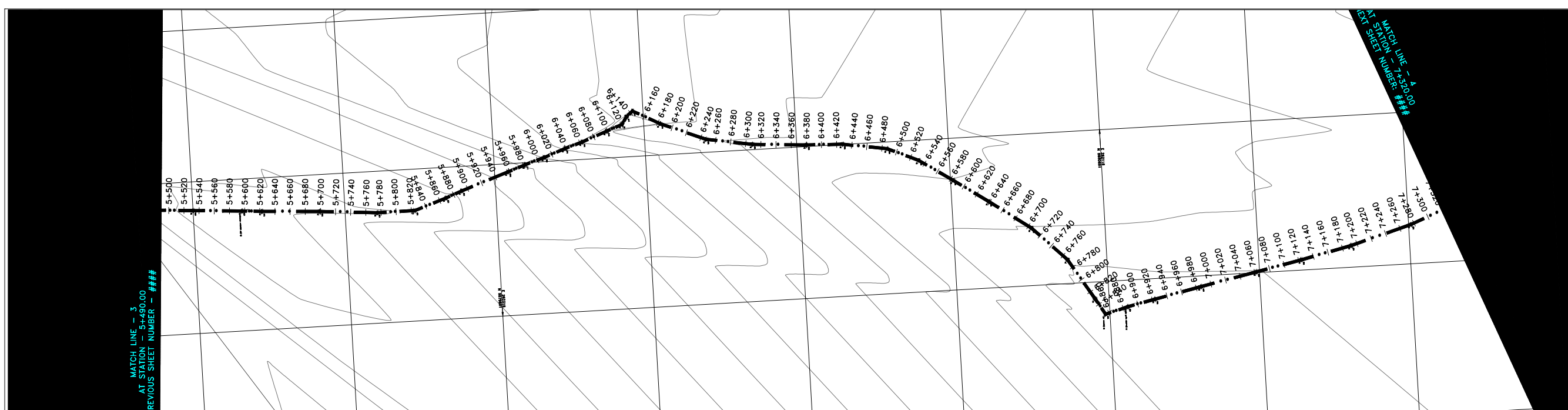
TIGITHI INTAKE TO WAMANI TANK  
LINE  
PLAN AND PROFILE (SHEET 3 OF 8)

Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/03



Tigithi intake to Wamani Tank  
SCALE: HOR 1:2000 VERT 1:1000





**NOTES**

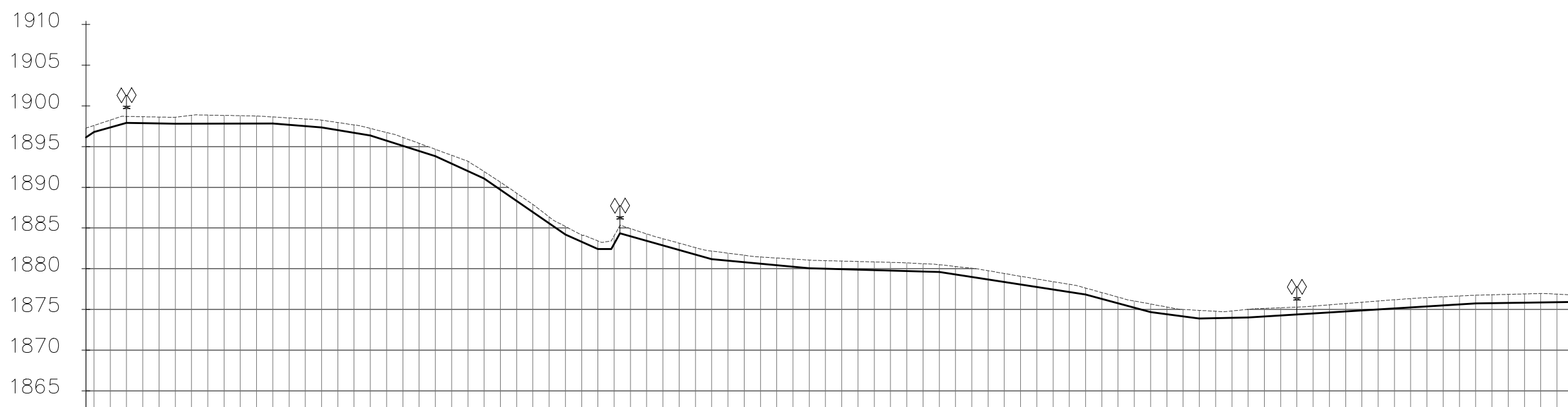
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
- COORDINATES ARE BASED ON UTM.
- LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
- GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
- 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.
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**LEGEND:**

- PROPOSED PIPELINE
- EXISTING GROUND PROFILE
- PIPE INVERT PROFILE
- EXISTING ROAD

- AIR VALVE
- DOUBLE AIR VALVE
- WASHOUT
- WASHOUT TYPE 1
- WASHOUT TYPE 2
- NOMINAL DIAMETER
- NOMINAL PRESSURE
- VERTICAL BEND
- HORIZONTAL BEND
- EXISTING STRUCTURE
- EARTH ROAD
- GRAVEL ROAD
- CUT

**FOR CONSTRUCTION**  
signed CMTS



DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	FLOW DATA	TYPE OF PIPE AND SIZE
1932.50	1896.14	1897.28	0.14	1896.14		
1932.76	1896.80	1897.60	0.80	1896.80		
1932.40	1897.36	1898.26	0.90	1897.36		
1932.34	1897.91	1898.71	0.80	1897.91		
1932.28	1897.88	1898.67	0.79	1897.88		
1932.22	1897.85	1898.63	0.79	1897.85		
1932.15	1897.81	1898.61	0.80	1897.81		
1932.09	1897.82	1898.84	1.02	1897.82		
1932.03	1897.82	1898.87	1.05	1897.82		
1931.97	1897.83	1898.83	1.01	1897.83		
1931.91	1897.83	1898.80	0.96	1897.83		
1931.84	1897.84	1898.76	0.92	1897.84		
1931.78	1897.84	1898.64	0.80	1897.84		
1931.72	1897.88	1898.52	0.84	1897.88		
1931.66	1897.51	1898.40	0.88	1897.51		
1931.60	1897.35	1898.25	0.90	1897.35		
1931.53	1897.02	1897.96	0.93	1897.02		
1931.47	1896.69	1897.67	0.97	1896.69		
1931.41	1896.37	1897.24	0.87	1896.37		
1931.35	1895.73	1896.74	1.00	1895.73		
1931.29	1895.10	1896.13	1.03	1895.10		
1931.22	1894.46	1895.40	0.94	1894.46		
1931.16	1893.83	1894.67	0.84	1893.83		
1931.10	1892.91	1893.94	1.03	1892.91		
1931.04	1892.00	1893.20	1.20	1892.00		
1930.98	1891.08	1891.94	0.85	1891.08		
1930.92	1890.70	1890.63	0.93	1890.70		
1930.85	1888.32	1889.28	0.96	1888.32		
1930.79	1886.95	1887.89	0.94	1886.95		
1930.73	1885.57	1886.36	0.79	1885.57		
1930.67	1884.19	1885.19	1.00	1884.19		
1930.61	1882.41	1883.41	1.00	1882.41		
1930.48	1883.05	1884.05	1.00	1883.05		
1930.42	1883.99	1884.93	0.94	1883.99		
1930.36	1883.43	1884.27	0.84	1883.43		
1930.30	1882.86	1883.69	0.82	1882.86		
1930.23	1882.30	1883.14	0.84	1882.30		
1930.17	1881.74	1882.59	0.86	1881.74		
1930.11	1881.17	1882.17	1.00	1881.17		
1930.05	1880.99	1881.91	0.93	1880.99		
1929.99	1880.80	1881.66	0.85	1880.80		
1929.92	1880.62	1881.44	0.83	1880.62		
1929.86	1880.43	1881.31	0.88	1880.43		
1929.80	1880.25	1881.19	0.94	1880.25		
1929.74	1880.06	1881.06	1.00	1880.06		
1929.68	1880.00	1880.99	0.99	1880.00		
1929.61	1879.94	1880.94	1.00	1879.94		
1929.55	1879.89	1880.89	1.00	1879.89		
1929.49	1879.83	1880.83	1.01	1879.83		
1929.43	1879.77	1880.78	1.01	1879.77		
1929.37	1879.71	1880.71	1.00	1879.71		
1929.30	1879.65	1880.62	0.96	1879.65		
1929.24	1879.60	1880.50	0.90	1879.60		
1929.18	1879.29	1880.28	0.99	1879.29		
1929.12	1878.98	1880.06	1.08	1878.98		
1929.06	1878.67	1879.76	1.09	1878.67		
1928.99	1878.36	1879.41	1.05	1878.36		
1928.93	1878.06	1879.07	1.01	1878.06		
1928.87	1877.75	1878.74	0.99	1877.75		
1928.81	1877.44	1878.41	0.97	1877.44		
1928.75	1877.13	1878.08	0.95	1877.13		
1928.68	1876.82	1877.62	0.80	1876.82		
1928.62	1876.28	1877.07	0.78	1876.28		
1928.56	1875.74	1876.51	0.77	1875.74		
1928.50	1875.20	1876.03	0.83	1875.20		
1928.44	1874.66	1875.66	1.00	1874.66		
1928.37	1874.40	1875.30	0.89	1874.40		
1928.31	1874.14	1874.99	0.85	1874.14		
1928.25	1873.88	1874.88	1.00	1873.88		
1928.19	1873.93	1874.78	0.85	1873.93		
1928.13	1873.97	1874.81	0.85	1873.97		
1928.06	1874.01	1875.01	1.00	1874.01		
1928.00	1874.13	1875.13	0.99	1874.13		
1927.94	1874.26	1875.21	0.95	1874.26		
1927.88	1874.38	1875.29	0.91	1874.38		
1927.82	1874.51	1875.40	0.89	1874.51		
1927.75	1874.63	1875.56	0.93	1874.63		
1927.69	1874.75	1875.72	0.97	1874.75		
1927.63	1874.88	1875.88	1.00	1874.88		
1927.57	1875.00	1876.04	1.03	1875.00		
1927.51	1875.13	1876.18	1.06	1875.13		
1927.44	1875.25	1876.33	1.08	1875.25		
1927.38	1875.38	1876.46	1.08	1875.38		
1927.32	1875.50	1876.55	1.03	1875.50		
1927.26	1875.62	1876.65	1.03	1875.62		
1927.20	1875.75	1876.75	1.00	1875.75		
1927.13	1875.78	1876.80	1.02	1875.78		
1927.07	1875.81	1876.85	1.04	1875.81		
1927.01	1875.84	1876.90	1.07	1875.84		
1926.95	1875.87	1876.96	1.09	1875.87		
1926.89	1875.90	1876.88	0.98	1875.90		
1926.82	1875.93	1876.79	0.86	1875.93		

Tigithi intake to Wamani Tank  
SCALE: HOR 1:2000 VERT 1:1000

**FOR CONSTRUCTION**  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY CHECKED			
	BY CHECKED			
	BY CHECKED			
CO	ISSUED FOR CONSTRUCTION BY CHECKED			

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

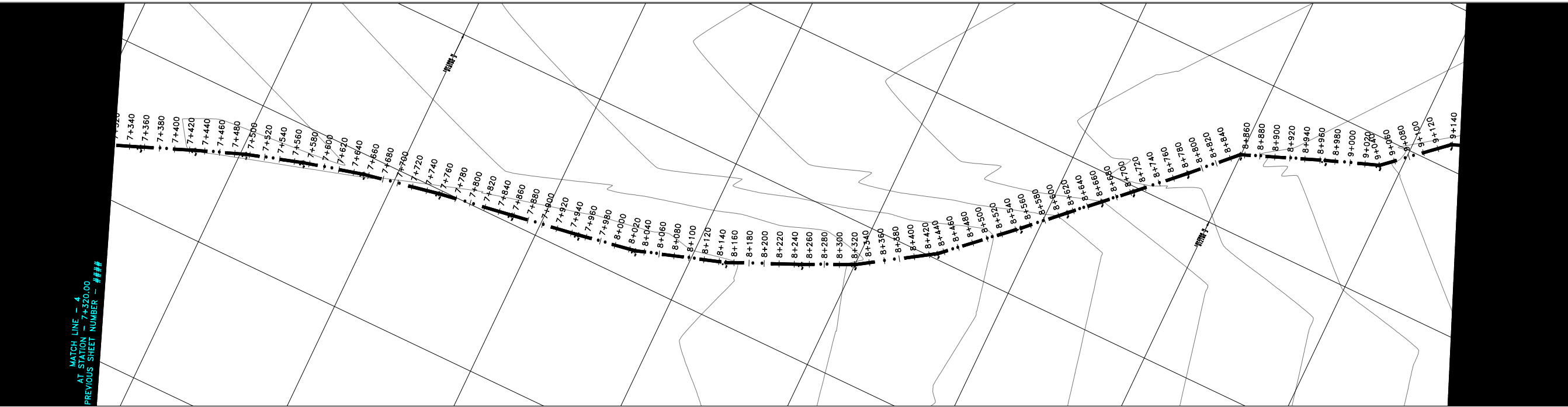
**PROJECT**  
 AUGMENTATION OF TIGITHI-HUMUKA WATER PROJECT

Civil/Structural Engineers

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

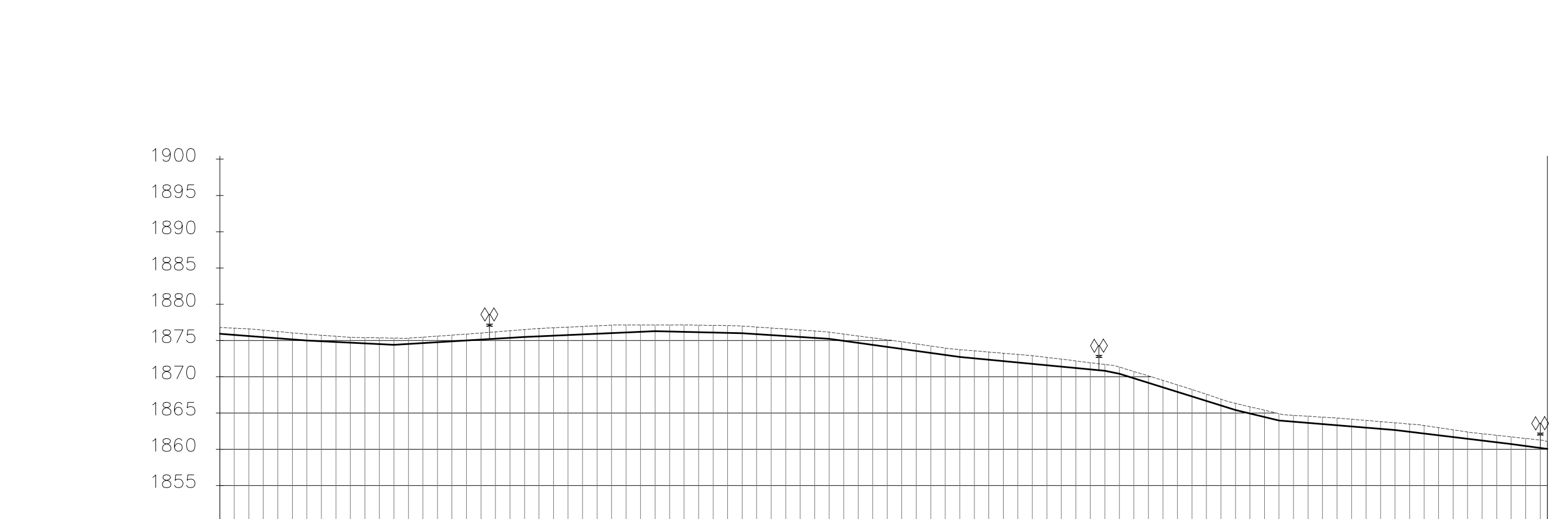
**Drawing Title**  
 TIGITHI INTAKE TO WAMANI TANK LINE  
 PLAN AND PROFILE (SHEET 4 OF 8)

Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/04



- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
  - 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.
  - ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
  - 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
  - W01 WASHOUT TYPE 1
  - W02 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 CONSTRUCTION**  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			
CO	ISSUED FOR CONSTRUCTION	BY		
		CHECKED		

DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	FLOW DATA	TYPE OF PIPE AND SIZE
1926.82	0.86	1875.93	1876.79	7+320.00		
1926.76	0.92	1875.77	1876.70	7+340.00		
1926.70	0.99	1875.62	1876.60	7+360.00		
1926.64	0.96	1875.46	1876.42	7+380.00		
1926.58	0.93	1875.31	1876.23	7+400.00		
1926.51	0.89	1875.15	1876.05	7+420.00		
1926.45	0.87	1875.00	1875.87	7+440.00		
1926.39	0.82	1874.90	1875.72	7+460.00		
1926.33	0.78	1874.80	1875.58	7+480.00		
1926.27	0.73	1874.70	1875.43	7+500.00		
1926.20	0.79	1874.60	1875.39	7+520.00		
1926.14	0.86	1874.50	1875.36	7+540.00		
1926.08	0.93	1874.40	1875.33	7+560.00		
1926.02	0.79	1874.52	1875.31	7+580.00		
1925.96	0.81	1874.64	1875.45	7+600.00		
1925.89	0.83	1874.76	1875.60	7+620.00		
1925.83	0.85	1874.89	1875.74	7+640.00		
1925.77	0.87	1875.01	1875.88	7+660.00		
1925.71	0.90	1875.13	1876.03	7+680.00		
1925.65	0.94	1875.25	1876.19	7+700.00		
1925.58	0.97	1875.37	1876.34	7+720.00		
1925.52	1.00	1875.50	1876.50	7+740.00		
1925.46	1.07	1875.58	1876.65	7+760.00		
1925.40	1.08	1875.67	1876.75	7+780.00		
1925.34	1.09	1875.75	1876.84	7+800.00		
1925.28	1.09	1875.84	1876.93	7+820.00		
1925.21	1.09	1875.93	1877.02	7+840.00		
1925.15	1.10	1876.01	1877.11	7+860.00		
1925.09	1.03	1876.10	1877.13	7+880.00		
1925.03	0.95	1876.19	1877.14	7+900.00		
1924.97	0.87	1876.27	1877.14	7+920.00		
1924.90	0.92	1876.23	1877.14	7+940.00		
1924.84	0.96	1876.18	1877.14	7+960.00		
1924.78	0.98	1876.13	1877.11	7+980.00		
1924.72	1.00	1876.08	1877.08	8+000.00		
1924.66	1.02	1876.03	1877.05	8+020.00		
1924.59	1.00	1875.99	1876.99	8+040.00		
1924.53	0.99	1875.86	1876.85	8+060.00		
1924.47	0.98	1875.73	1876.72	8+080.00		
1924.41	0.97	1875.61	1876.58	8+100.00		
1924.35	0.96	1875.48	1876.44	8+120.00		
1924.28	0.95	1875.36	1876.31	8+140.00		
1924.22	0.91	1875.23	1876.14	8+160.00		
1924.16	0.93	1874.95	1875.88	8+180.00		
1924.10	0.94	1874.68	1875.62	8+200.00		
1924.04	0.96	1874.40	1875.35	8+220.00		
1923.97	0.97	1874.12	1875.09	8+240.00		
1923.91	0.98	1873.85	1874.82	8+260.00		
1923.85	0.96	1873.57	1874.53	8+280.00		
1923.79	0.95	1873.29	1874.24	8+300.00		
1923.73	0.93	1873.02	1873.95	8+320.00		
1923.66	1.00	1872.74	1873.74	8+340.00		
1923.60	1.03	1872.55	1873.57	8+360.00		
1923.54	1.05	1872.35	1873.41	8+380.00		
1923.48	1.08	1872.16	1873.24	8+400.00		
1923.42	1.10	1871.97	1873.07	8+420.00		
1923.35	1.12	1871.78	1872.90	8+440.00		
1923.29	1.08	1871.58	1872.66	8+460.00		
1923.23	1.03	1871.39	1872.42	8+480.00		
1923.17	0.98	1871.20	1872.18	8+500.00		
1923.11	0.94	1871.00	1871.94	8+520.00		
1923.04	0.89	1870.81	1871.70	8+540.00		
1922.98	0.92	1870.42	1871.34	8+560.00		
1922.92	0.94	1869.79	1870.73	8+580.00		
1922.86	0.95	1869.16	1870.12	8+600.00		
1922.80	0.97	1868.54	1869.50	8+620.00		
1922.73	0.96	1867.91	1868.87	8+640.00		
1922.67	0.96	1867.28	1868.24	8+660.00		
1922.61	0.93	1866.65	1867.58	8+680.00		
1922.55	0.88	1866.03	1866.90	8+700.00		
1922.49	0.93	1865.40	1866.33	8+720.00		
1922.42	0.93	1864.93	1865.86	8+740.00		
1922.36	0.93	1864.45	1865.38	8+760.00		
1922.30	0.93	1863.98	1864.91	8+780.00		
1922.24	0.87	1863.81	1864.68	8+800.00		
1922.18	0.91	1863.64	1864.55	8+820.00		
1922.11	0.95	1863.48	1864.43	8+840.00		
1922.05	0.99	1863.31	1864.31	8+860.00		
1921.99	1.00	1863.14	1864.14	8+880.00		
1921.93	1.00	1862.98	1863.98	8+900.00		
1921.87	1.00	1862.81	1863.81	8+920.00		
1921.80	1.00	1862.65	1863.65	8+940.00		
1921.74	1.08	1862.40	1863.48	8+960.00		
1921.68	1.11	1862.16	1863.27	8+980.00		
1921.62	1.06	1861.92	1862.98	9+000.00		
1921.56	1.00	1861.68	1862.68	9+020.00		
1921.49	0.95	1861.44	1862.39	9+040.00		
1921.43	0.95	1861.19	1862.15	9+060.00		
1921.37	0.98	1860.95	1861.93	9+080.00		
1921.31	1.00	1860.71	1861.71	9+100.00		
1921.25	1.04	1860.45	1861.49	9+120.00		
1921.18	1.08	1860.19	1861.27	9+140.00		
1921.15	1.01	1860.06	1861.07	9+150.00		

CLIENT

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

PROJECT

AUGMENTATION OF TIGITHI-HUMUKA WATER PROJECT

Civil/Structural Engineers

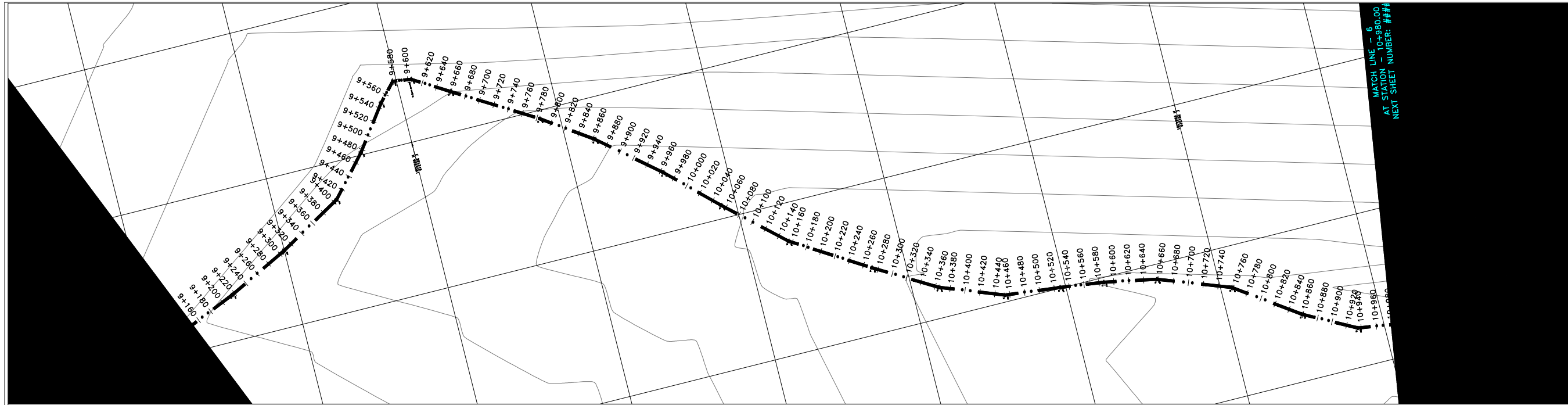
TANA WATER WORKS DEVELOPMENT AGENCY  
P. O. BOX 1292-10100  
NYERI

Drawing Title

TIGITHI INTAKE TO WAMANI TANK LINE  
PLAN AND PROFILE (SHEET 5 OF 8)

Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/05

Tigithi intake to Wamani Tank  
SCALE: HOR 1:2000 VERT 1:1000



MATCH LINE 10+980.00  
AT STATION NUMBER: ###

- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
  - 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.
  - ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
  - 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
  - DOUBLE AIR VALVE
  - WASHOUT
  - W01 - WASHOUT TYPE 1
  - W02 - 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 CONSTRUCTION**  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY CHECKED			
	BY CHECKED			
	BY CHECKED			
CO	ISSUED FOR CONSTRUCTION BY CHECKED			

**CLIENT**

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

**PROJECT**

AUGMENTATION OF TIGITHI-HUMUKA  
WATER PROJECT

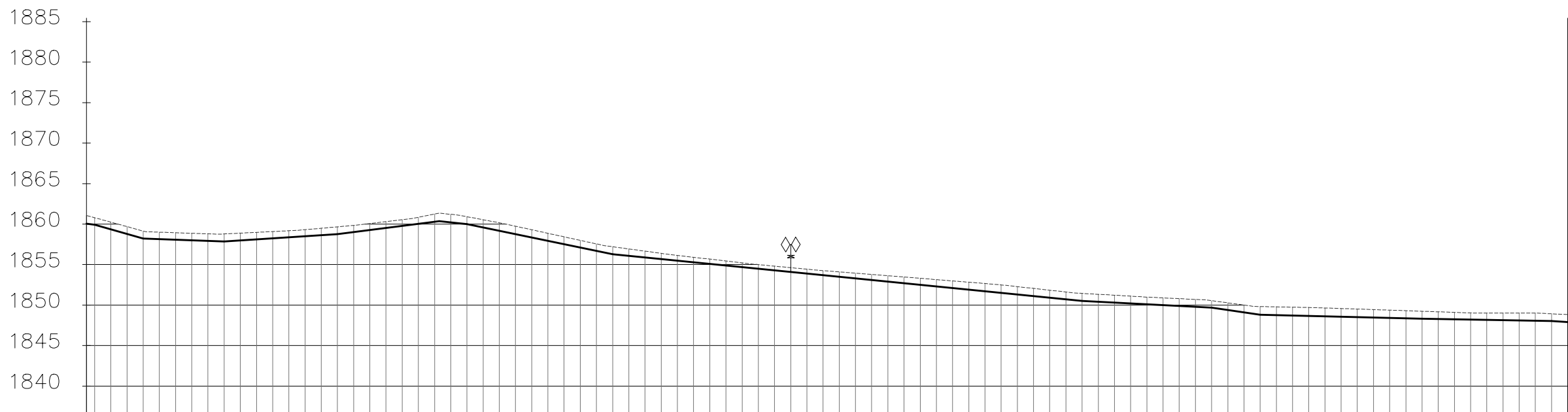
Civil/Structural Engineers

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

**Drawing Title**

TIGITHI INTAKE TO WAMANI TANK  
LINE  
PLAN AND PROFILE (SHEET 6 OF 8)

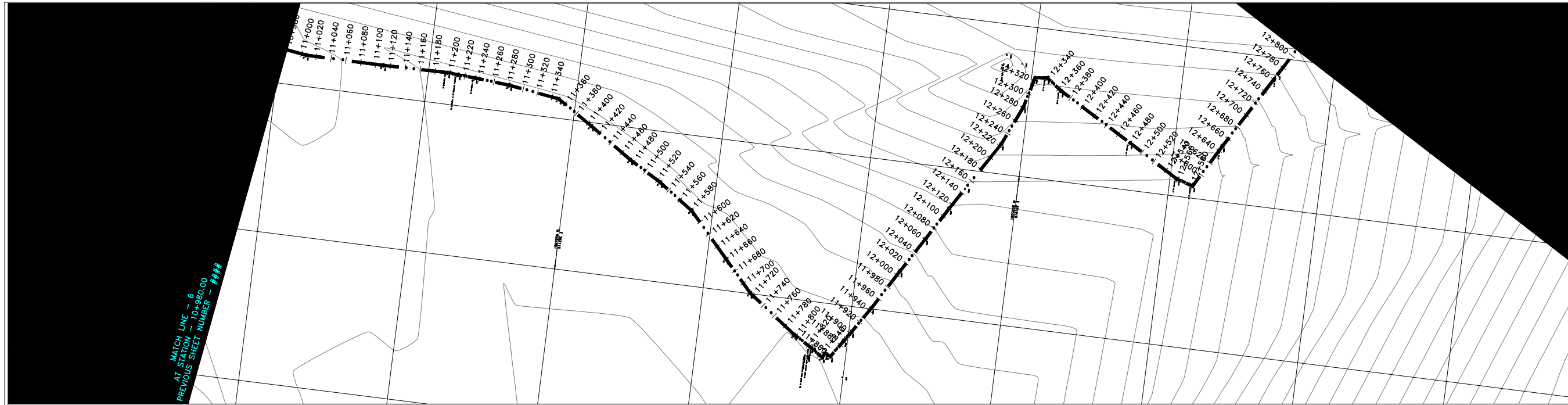
Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/06



DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	FLOW DATA	TYPE OF PIPE AND SIZE
9+150.00	1860.06	1858.00	0.06	1860.06		
9+160.00	1859.56	1856.24	0.88	1859.56		
9+180.00	1858.79	1859.69	0.90	1858.79		
9+200.00	1858.24	1859.14	0.92	1858.24		
9+220.00	1858.15	1859.00	0.85	1858.15		
9+240.00	1858.08	1858.94	0.86	1858.08		
9+260.00	1858.00	1858.87	0.87	1858.00		
9+280.00	1857.93	1858.80	0.87	1857.93		
9+300.00	1857.85	1858.79	0.93	1857.85		
9+320.00	1857.98	1858.88	0.90	1857.98		
9+340.00	1858.11	1858.98	0.87	1858.11		
9+360.00	1858.24	1859.08	0.84	1858.24		
9+380.00	1858.37	1859.18	0.81	1858.37		
9+400.00	1858.50	1859.31	0.82	1858.50		
9+420.00	1858.62	1859.49	0.86	1858.62		
9+440.00	1858.75	1859.66	0.91	1858.75		
9+460.00	1858.88	1859.84	0.83	1858.88		
9+480.00	1859.01	1859.99	0.83	1859.01		
9+500.00	1859.14	1860.17	0.79	1859.14		
9+520.00	1859.27	1860.31	0.77	1859.27		
9+540.00	1859.40	1860.54	0.77	1859.40		
9+560.00	1859.53	1860.84	0.81	1859.53		
9+580.00	1859.66	1861.24	0.96	1859.66		
9+600.00	1859.79	1861.21	1.00	1859.79		
9+620.00	1859.92	1860.92	0.92	1859.92		
9+640.00	1860.05	1860.54	0.95	1860.05		
9+660.00	1860.18	1860.16	0.99	1860.18		
9+680.00	1860.31	1859.74	0.98	1860.31		
9+700.00	1860.44	1859.30	0.96	1860.44		
9+720.00	1860.57	1858.87	0.93	1860.57		
9+740.00	1860.70	1858.43	0.91	1860.70		
9+760.00	1860.83	1857.99	0.89	1860.83		
9+780.00	1860.96	1857.56	0.87	1860.96		
9+800.00	1861.09	1857.20	0.87	1861.09		
9+820.00	1861.22	1856.84	0.93	1861.22		
9+840.00	1861.35	1856.48	0.86	1861.35		
9+860.00	1861.48	1856.14	0.78	1861.48		
9+880.00	1861.61	1855.81	0.66	1861.61		
9+900.00	1861.74	1855.49	0.71	1861.74		
9+920.00	1861.87	1855.18	0.62	1861.87		
9+940.00	1862.00	1854.87	0.59	1862.00		
9+960.00	1862.13	1854.56	0.56	1862.13		
9+980.00	1862.26	1854.25	0.52	1862.26		
10+000.00	1862.39	1853.94	0.54	1862.39		
10+020.00	1862.52	1853.63	0.55	1862.52		
10+040.00	1862.65	1853.32	0.60	1862.65		
10+060.00	1862.78	1853.01	0.64	1862.78		
10+080.00	1862.91	1852.70	0.68	1862.91		
10+100.00	1863.04	1852.39	0.72	1863.04		
10+120.00	1863.17	1852.08	0.76	1863.17		
10+140.00	1863.30	1851.77	0.80	1863.30		
10+160.00	1863.43	1851.46	0.84	1863.43		
10+180.00	1863.56	1851.15	0.88	1863.56		
10+200.00	1863.69	1850.84	0.92	1863.69		
10+220.00	1863.82	1850.53	0.96	1863.82		
10+240.00	1863.95	1850.22	0.99	1863.95		
10+260.00	1864.08	1849.91	1.03	1864.08		
10+280.00	1864.21	1849.60	1.04	1864.21		
10+300.00	1864.34	1849.29	1.03	1864.34		
10+320.00	1864.47	1848.98	1.00	1864.47		
10+340.00	1864.60	1848.67	0.99	1864.60		
10+360.00	1864.73	1848.36	0.98	1864.73		
10+380.00	1864.86	1848.05	0.97	1864.86		
10+400.00	1864.99	1847.74	0.96	1864.99		
10+420.00	1865.12	1847.43	0.95	1865.12		
10+440.00	1865.25	1847.12	0.94	1865.25		
10+460.00	1865.38	1846.81	0.93	1865.38		
10+480.00	1865.51	1846.50	0.92	1865.51		
10+500.00	1865.64	1846.19	0.91	1865.64		
10+520.00	1865.77	1845.88	0.90	1865.77		
10+540.00	1865.90	1845.57	0.89	1865.90		
10+560.00	1866.03	1845.26	0.88	1866.03		
10+580.00	1866.16	1844.95	0.87	1866.16		
10+600.00	1866.29	1844.64	0.86	1866.29		
10+620.00	1866.42	1844.33	0.85	1866.42		
10+640.00	1866.55	1844.02	0.84	1866.55		
10+660.00	1866.68	1843.71	0.83	1866.68		
10+680.00	1866.81	1843.40	0.82	1866.81		
10+700.00	1866.94	1843.09	0.81	1866.94		
10+720.00	1867.07	1842.78	0.80	1867.07		
10+740.00	1867.20	1842.47	0.79	1867.20		
10+760.00	1867.33	1842.16	0.78	1867.33		
10+780.00	1867.46	1841.85	0.77	1867.46		
10+800.00	1867.59	1841.54	0.76	1867.59		
10+820.00	1867.72	1841.23	0.75	1867.72		
10+840.00	1867.85	1840.92	0.74	1867.85		
10+860.00	1867.98	1840.61	0.73	1867.98		
10+880.00	1868.11	1840.30	0.72	1868.11		
10+900.00	1868.24	1840.00	0.71	1868.24		
10+920.00	1868.37	1839.69	0.70	1868.37		
10+940.00	1868.50	1839.38	0.69	1868.50		
10+960.00	1868.63	1839.07	0.68	1868.63		
10+980.00	1868.76	1838.76	0.67	1868.76		

Tigithi intake to Wamani Tank  
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
- W01 — WASHOUT TYPE 1
- W02 — 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 CONSTRUCTION  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			
CO	ISSUED FOR CONSTRUCTION	BY		
		CHECKED		

CLIENT




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

PROJECT

AUGMENTATION OF TIGITHI-HUMUKA  
WATER PROJECT

Civil/Structural Engineers

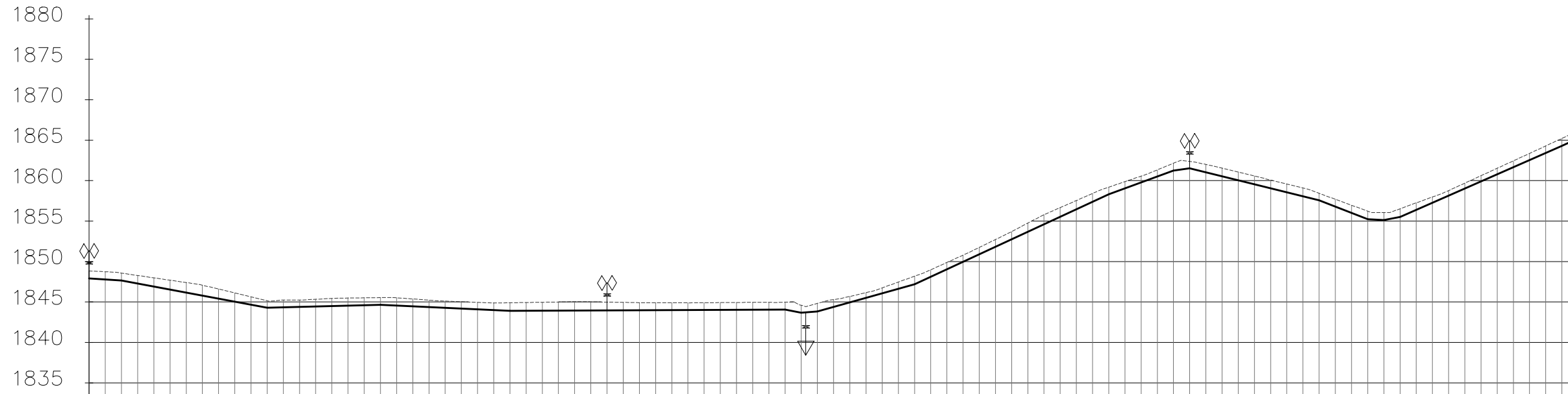


TANA WATER WORKS  
DEVELOPMENT AGENCY  
P. O. BOX 1292-10100  
NYERI

Drawing Title

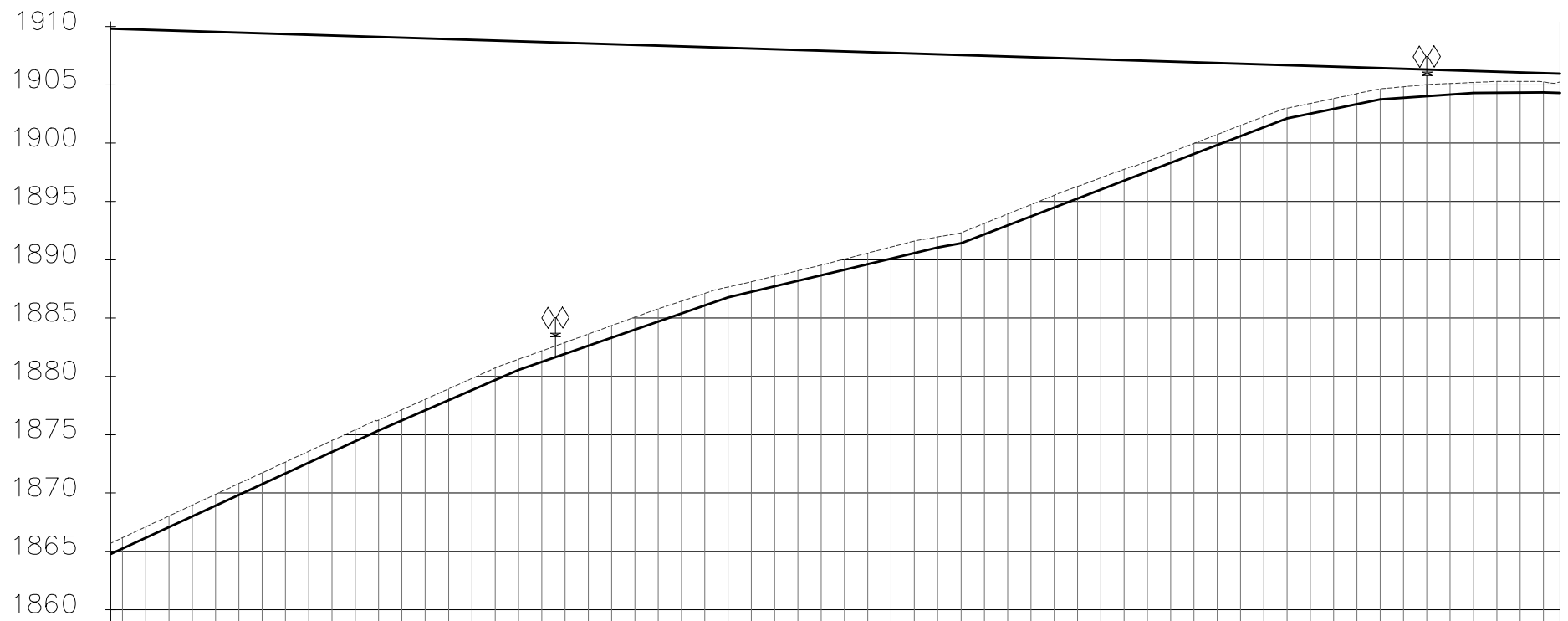
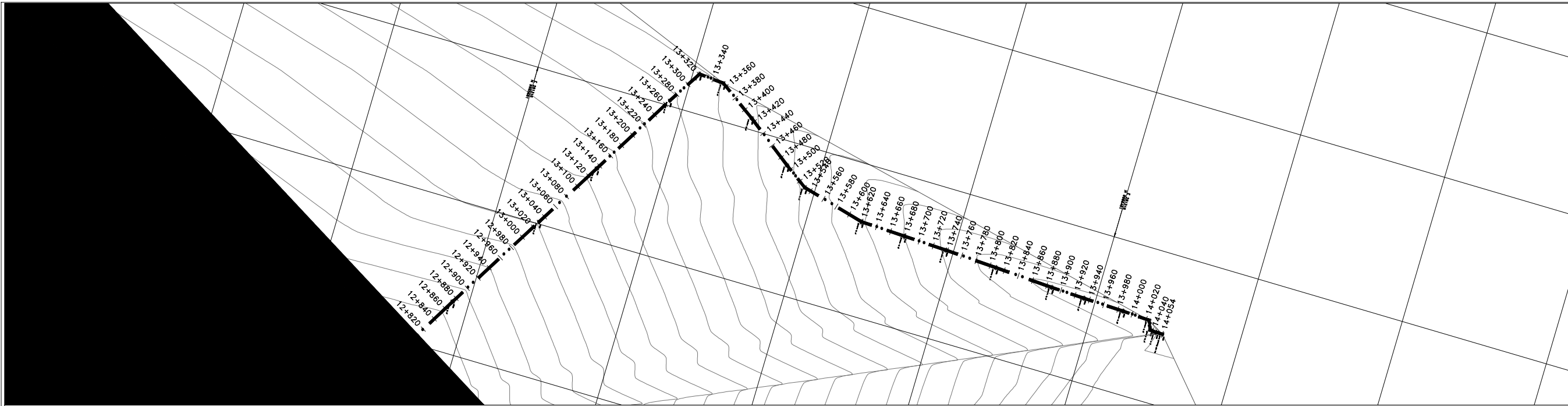
TIGITHI INTAKE TO WAMANI TANK  
LINE  
PLAN AND PROFILE (SHEET 7 OF 8)

Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/08



DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	FLOW DATA	TYPE OF PIPE AND SIZE
1915.48	0.92	1847.92	1848.83	1848.00		
1915.42	0.95	1847.79	1848.74	1848.00		
1915.36	0.90	1847.67	1848.57	1848.00		
1915.30	0.99	1847.29	1848.28	1848.00		
1915.23	1.07	1846.92	1847.99	1848.00		
1915.17	1.16	1846.54	1847.70	1848.00		
1915.11	1.24	1846.16	1847.40	1848.00		
1915.05	1.29	1845.79	1847.08	1848.00		
1914.99	1.18	1845.41	1846.60	1848.00		
1914.92	1.07	1845.04	1846.11	1848.00		
1914.86	0.97	1844.66	1845.63	1848.00		
1914.80	0.86	1844.29	1845.15	1848.00		
1914.74	0.90	1844.34	1845.24	1848.00		
1914.68	0.84	1844.39	1845.24	1848.00		
1914.61	0.89	1844.45	1845.34	1848.00		
1914.55	0.94	1844.50	1845.44	1848.00		
1914.49	0.94	1844.55	1845.49	1848.00		
1914.43	0.91	1844.61	1845.51	1848.00		
1914.37	0.88	1844.66	1845.54	1848.00		
1914.31	0.96	1844.56	1845.52	1848.00		
1914.24	0.91	1844.47	1845.38	1848.00		
1914.18	0.85	1844.38	1845.23	1848.00		
1914.12	0.83	1844.28	1845.11	1848.00		
1914.06	0.85	1844.19	1845.03	1848.00		
1914.00	0.86	1844.09	1844.96	1848.00		
1913.93	0.88	1844.00	1844.88	1848.00		
1913.87	1.00	1843.90	1844.90	1848.00		
1913.81	1.02	1843.91	1844.93	1848.00		
1913.75	1.04	1843.92	1844.97	1848.00		
1913.69	1.07	1843.93	1845.00	1848.00		
1913.62	1.09	1843.94	1845.03	1848.00		
1913.56	1.07	1843.95	1845.02	1848.00		
1913.50	1.03	1843.96	1844.99	1848.00		
1913.44	0.98	1843.97	1844.95	1848.00		
1913.38	0.94	1843.98	1844.92	1848.00		
1913.31	0.92	1843.99	1844.90	1848.00		
1913.25	0.90	1844.00	1844.90	1848.00		
1913.19	0.89	1844.01	1844.90	1848.00		
1913.13	0.89	1844.02	1844.91	1848.00		
1913.07	0.90	1844.03	1844.92	1848.00		
1913.00	0.90	1844.04	1844.94	1848.00		
1912.94	0.91	1844.05	1844.96	1848.00		
1912.88	0.89	1844.06	1844.95	1848.00		
1912.82	0.91	1844.07	1844.98	1848.00		
1912.76	0.91	1843.68	1844.59	1848.00		
1912.69	1.00	1843.82	1844.82	1848.00		
1912.63	0.91	1844.38	1845.30	1848.00		
1912.57	0.74	1844.94	1845.69	1848.00		
1912.51	0.65	1845.51	1846.15	1848.00		
1912.45	0.68	1846.07	1846.74	1848.00		
1912.38	0.84	1846.63	1847.46	1848.00		
1912.32	1.00	1847.19	1848.19	1848.00		
1912.26	0.86	1848.11	1848.98	1848.00		
1912.20	0.84	1849.04	1849.88	1848.00		
1912.14	0.82	1849.97	1850.79	1848.00		
1912.07	0.85	1850.90	1851.74	1848.00		
1912.01	0.90	1851.82	1852.72	1848.00		
1911.95	0.95	1852.75	1853.70	1848.00		
1911.89	1.08	1853.68	1854.75	1848.00		
1911.83	1.19	1854.60	1855.79	1848.00		
1911.76	1.14	1855.53	1856.67	1848.00		
1911.70	1.09	1856.46	1857.54	1848.00		
1911.64	1.03	1857.39	1858.42	1848.00		
1911.58	0.88	1858.31	1859.19	1848.00		
1911.52	0.83	1859.04	1859.88	1848.00		
1911.45	0.78	1859.77	1860.56	1848.00		
1911.39	0.82	1860.51	1861.33	1848.00		
1911.33	0.91	1861.24	1862.15	1848.00		
1911.27	0.86	1861.52	1862.38	1848.00		
1911.21	0.97	1861.03	1862.00	1848.00		
1911.14	1.01	1860.53	1861.55	1848.00		
1911.08	1.02	1860.04	1861.06	1848.00		
1911.02	1.02	1859.55	1860.57	1848.00		
1910.96	1.03	1859.05	1860.08	1848.00		
1910.90	1.03	1858.56	1859.59	1848.00		
1910.83	1.04	1858.06	1859.10	1848.00		
1910.77	0.86	1857.57	1858.43	1848.00		
1910.71	0.91	1856.79	1857.70	1848.00		
1910.65	0.95	1856.01	1856.96	1848.00		
1910.59	1.00	1855.23	1856.23	1848.00		
1910.52	0.92	1855.14	1856.06	1848.00		
1910.46	1.00	1855.52	1856.52	1848.00		
1910.40	0.85	1856.40	1857.25	1848.00		
1910.34	0.71	1857.28	1857.98	1848.00		
1910.28	0.62	1858.16	1858.77	1848.00		
1910.21	0.66	1859.03	1859.69	1848.00		
1910.15	0.70	1859.91	1860.61	1848.00		
1910.09	0.74	1860.79	1861.53	1848.00		
1910.03	0.78	1861.67	1862.45	1848.00		
1909.97	0.82	1862.55	1863.37	1848.00		
1909.90	0.86	1863.43	1864.29	1848.00		
1909.84	0.92	1864.30	1865.21	1848.00		
1909.81	0.93	1864.78	1865.68	1848.00		

Tigithi intake to Wamani Tank  
SCALE: HOR 1:2000 VERT 1:1000




DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	FLOW DATA	TYPE OF PIPE AND SIZE
1909.81	1864.76	1865.69	0.93	1909.81		
1909.78	1865.21	1866.16	0.94	1909.78		
1909.72	1866.15	1867.10	0.95	1909.72		
1909.66	1867.07	1868.03	0.96	1909.66		
1909.59	1867.99	1868.96	0.98	1909.59		
1909.53	1868.91	1869.89	0.98	1909.53		
1909.47	1869.83	1870.81	0.98	1909.47		
1909.41	1870.75	1871.73	0.98	1909.41		
1909.35	1871.67	1872.65	0.98	1909.35		
1909.28	1872.59	1873.58	0.98	1909.28		
1909.22	1873.51	1874.50	0.99	1909.22		
1909.16	1874.44	1875.42	0.99	1909.16		
1909.10	1875.36	1876.35	0.99	1909.10		
1909.04	1876.28	1877.27	0.99	1909.04		
1908.97	1877.20	1878.19	0.99	1908.97		
1908.91	1878.12	1879.11	1.01	1908.91		
1908.85	1879.04	1880.03	1.03	1908.85		
1908.79	1880.00	1881.00	1.03	1908.79		
1908.73	1880.96	1881.96	0.99	1908.73		
1908.67	1881.92	1882.92	0.99	1908.67		
1908.60	1882.88	1883.88	0.99	1908.60		
1908.54	1883.84	1884.84	1.04	1908.54		
1908.48	1884.80	1885.80	1.04	1908.48		
1908.42	1885.76	1886.76	1.07	1908.42		
1908.36	1886.72	1887.72	1.08	1908.36		
1908.29	1887.68	1888.68	1.06	1908.29		
1908.23	1888.64	1889.64	1.03	1908.23		
1908.17	1889.60	1890.60	0.89	1908.17		
1908.11	1890.56	1891.56	0.86	1908.11		
1908.05	1891.52	1892.52	0.86	1908.05		
1907.98	1892.48	1893.48	0.87	1907.98		
1907.92	1893.44	1894.44	0.87	1907.92		
1907.86	1894.40	1895.40	0.90	1907.86		
1907.80	1895.36	1896.36	0.94	1907.80		
1907.74	1896.32	1897.32	0.98	1907.74		
1907.67	1897.28	1898.28	1.02	1907.67		
1907.61	1898.24	1899.24	0.90	1907.61		
1907.55	1899.20	1900.20	0.90	1907.55		
1907.49	1900.16	1901.16	0.94	1907.49		
1907.43	1901.12	1902.12	0.97	1907.43		
1907.36	1902.08	1903.08	1.01	1907.36		
1907.30	1903.04	1904.04	1.04	1907.30		
1907.24	1904.00	1905.00	1.04	1907.24		
1907.18	1904.96	1905.96	1.01	1907.18		
1907.12	1905.92	1906.92	0.98	1907.12		
1907.05	1906.88	1907.88	0.89	1907.05		
1906.99	1907.84	1908.84	0.89	1906.99		
1906.93	1908.80	1909.80	0.90	1906.93		
1906.87	1909.76	1910.76	0.91	1906.87		
1906.81	1910.72	1911.72	0.92	1906.81		
1906.74	1911.68	1912.68	0.93	1906.74		
1906.68	1912.64	1913.64	0.89	1906.68		
1906.62	1913.60	1914.60	0.88	1906.62		
1906.56	1914.56	1915.56	0.89	1906.56		
1906.50	1915.52	1916.52	0.90	1906.50		
1906.43	1916.48	1917.48	0.91	1906.43		
1906.37	1917.44	1918.44	0.94	1906.37		
1906.31	1918.40	1919.40	0.98	1906.31		
1906.25	1919.36	1920.36	0.95	1906.25		
1906.19	1920.32	1921.32	0.89	1906.19		
1906.12	1921.28	1922.28	0.96	1906.12		
1906.06	1922.24	1923.24	0.95	1906.06		
1905.96	1923.20	1924.20	0.94	1905.96		

- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - GROUND AND INVERT LEVEL SHOWN ARE AS SHOWN ON DRAWING UNLESS OTHERWISE INDICATED ON SITE BY THE ENGINEER.
  - 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.
  - ALL BENDS ARE HORIZONTAL UNLESS OTHERWISE STATED.
  - 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
  - W01 WASHOUT TYPE 1
  - W02 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 CONSTRUCTION**  
signed CMTS

REV	REVISIONS	SIGN	DATE	APPROVED
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			
CO	ISSUED FOR CONSTRUCTION	BY		
		CHECKED		

**CLIENT**  

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

**PROJECT**  
 AUGMENTATION OF TIGITHI-HUMUKA WATER PROJECT

Civil/Structural Engineers  

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

**Drawing Title**  
 TIGITHI INTAKE TO WAMANI TANK LINE  
 PLAN AND PROFILE (SHEET 8 OF 8)

Designed by KNG	Drawn by MK
Checked by JMM	Approved by
Scale AS SHOWN (A1)	Date SEPTEMBER 2023
Job No. 1	ACAD File:
PD STATUS	DRAWING No.TWWD/THWP/TIWT/08

Tigithi intake to Wamani Tank  
 SCALE: HOR 1:2000 VERT 1:1000