


- NOTES**
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 - 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			
GO	ISSUED FOR CONSTRUCTION	BY		
		CHECKED		

CLIENT




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

PROJECT

DESIGNS FOR AUGMENTATION OF
TIGITHI-HUMUKA WATER PROJECT

Civil/Structural Engineers



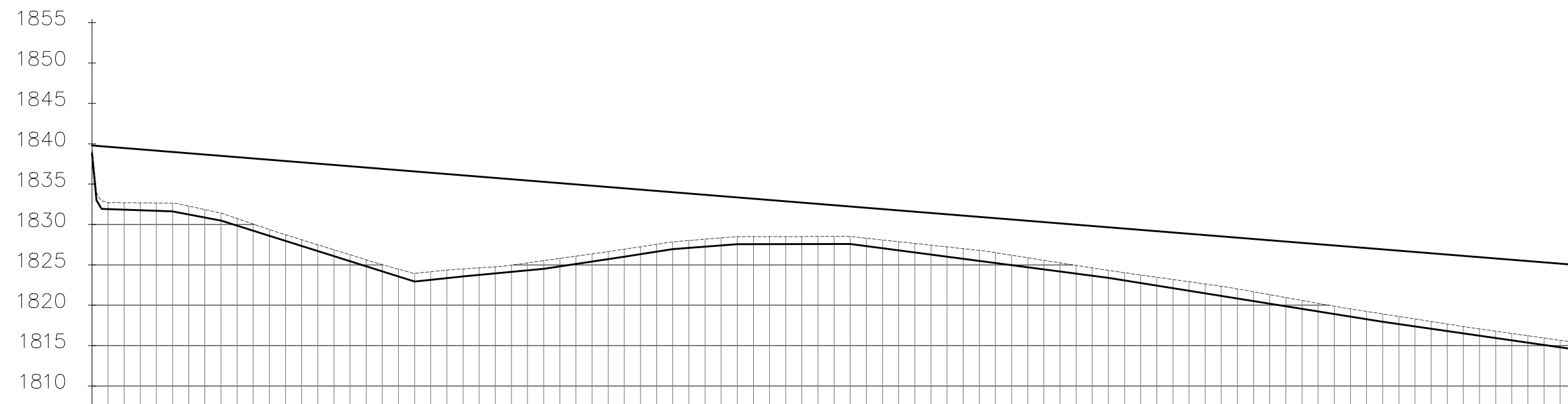
TANA WATER WORKS
DEVELOPMENT AGENCY
P. O. BOX 1292-10100
NYERI

Drawing Title

CHUMA TANK SUPPLY LINE

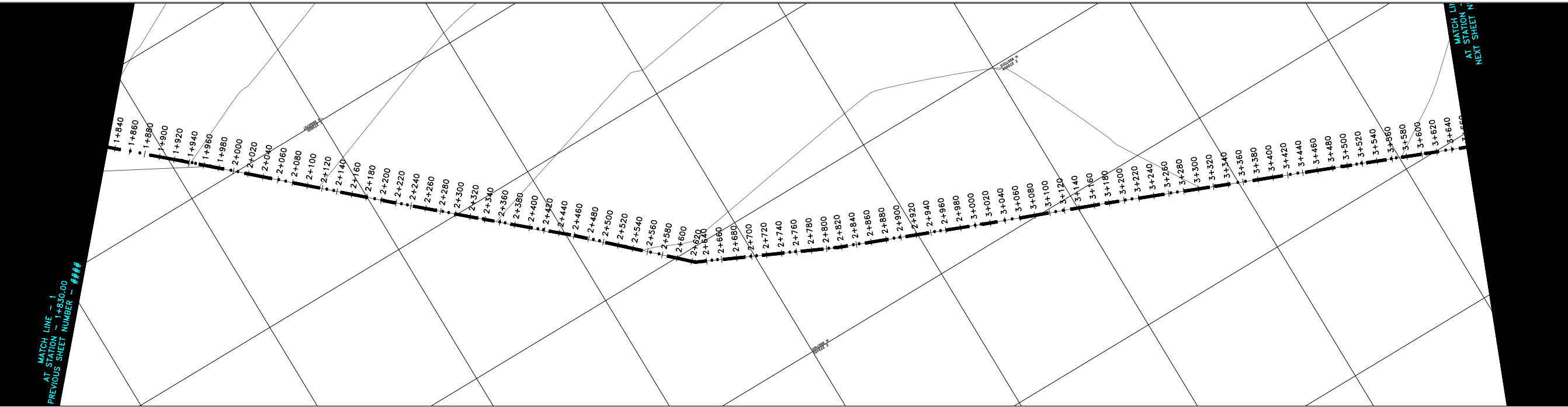
PLAN AND PROFILE (SHEET 1 OF 3)

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/CTSL/01
	CO REV



DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	TYPE OF PIPE AND SIZE
1839.80	1839.80	1838.80	1.00	1839.80	PN10 0D114MM PVC
1839.64	1839.64	1838.64	0.83	1839.64	
1839.48	1839.48	1838.48	0.87	1839.48	
1839.32	1839.32	1838.32	0.91	1839.32	
1839.16	1839.16	1838.16	0.96	1839.16	
1839.00	1839.00	1838.00	1.01	1839.00	
1838.83	1838.83	1837.83	1.03	1838.83	
1838.67	1838.67	1837.67	0.98	1838.67	
1838.51	1838.51	1837.51	0.92	1838.51	
1838.35	1838.35	1837.35	0.87	1838.35	
1838.19	1838.19	1837.19	0.82	1838.19	PN10 0D63MM HDPE
1838.03	1838.03	1837.03	0.77	1838.03	
1837.87	1837.87	1836.87	0.75	1837.87	
1837.71	1837.71	1836.71	0.76	1837.71	
1837.55	1837.55	1836.55	0.77	1837.55	
1837.39	1837.39	1836.39	0.78	1837.39	
1837.22	1837.22	1836.22	0.79	1837.22	
1837.06	1837.06	1836.06	0.80	1837.06	
1836.90	1836.90	1835.90	0.83	1836.90	
1836.74	1836.74	1835.74	0.89	1836.74	
1836.58	1836.58	1835.58	1.01	1836.58	PN10 0D50MM HDPE
1836.42	1836.42	1835.42	1.01	1836.42	
1836.26	1836.26	1835.26	1.01	1836.26	
1836.10	1836.10	1835.10	0.94	1836.10	
1835.94	1835.94	1834.94	0.88	1835.94	
1835.77	1835.77	1834.77	0.81	1835.77	
1835.61	1835.61	1834.61	0.84	1835.61	
1835.45	1835.45	1834.45	0.93	1835.45	
1835.29	1835.29	1834.29	1.01	1835.29	
1835.13	1835.13	1834.13	0.99	1835.13	
1834.97	1834.97	1833.97	0.97	1834.97	PN10 0D50MM HDPE
1834.81	1834.81	1833.81	0.95	1834.81	
1834.65	1834.65	1833.65	0.93	1834.65	
1834.49	1834.49	1833.49	0.93	1834.49	
1834.33	1834.33	1833.33	0.92	1834.33	
1834.16	1834.16	1833.16	0.91	1834.16	
1834.00	1834.00	1833.00	0.89	1834.00	
1833.84	1833.84	1832.84	0.90	1833.84	
1833.68	1833.68	1832.68	0.91	1833.68	
1833.52	1833.52	1832.52	0.93	1833.52	
1833.36	1833.36	1832.36	0.92	1833.36	
1833.20	1833.20	1832.20	0.92	1833.20	
1833.04	1833.04	1832.04	0.93	1833.04	
1832.88	1832.88	1831.88	0.93	1832.88	
1832.72	1832.72	1831.72	0.94	1832.72	
1832.55	1832.55	1831.55	0.94	1832.55	
1832.39	1832.39	1831.39	0.94	1832.39	
1832.23	1832.23	1831.23	0.93	1832.23	
1832.07	1832.07	1831.07	0.98	1832.07	
1831.91	1831.91	1830.91	1.03	1831.91	
1831.75	1831.75	1830.75	1.08	1831.75	
1831.59	1831.59	1830.59	1.13	1831.59	
1831.43	1831.43	1830.43	1.17	1831.43	
1831.27	1831.27	1830.27	1.22	1831.27	
1831.10	1831.10	1830.10	1.27	1831.10	
1830.94	1830.94	1829.94	1.32	1830.94	
1830.78	1830.78	1829.78	1.29	1830.78	
1830.62	1830.62	1829.62	1.24	1830.62	
1830.46	1830.46	1829.46	1.19	1830.46	
1830.30	1830.30	1829.30	1.14	1830.30	
1830.14	1830.14	1829.14	1.09	1830.14	
1829.98	1829.98	1828.98	1.04	1829.98	
1829.82	1829.82	1828.82	0.99	1829.82	
1829.66	1829.66	1828.66	0.93	1829.66	
1829.49	1829.49	1828.49	0.97	1829.49	
1829.33	1829.33	1828.33	1.01	1829.33	
1829.17	1829.17	1828.17	1.05	1829.17	
1829.01	1829.01	1828.01	1.09	1829.01	
1828.85	1828.85	1827.85	1.13	1828.85	
1828.69	1828.69	1827.69	1.17	1828.69	
1828.53	1828.53	1827.53	1.21	1828.53	
1828.37	1828.37	1827.37	1.20	1828.37	
1828.21	1828.21	1827.21	1.16	1828.21	
1828.04	1828.04	1827.04	1.12	1828.04	
1827.88	1827.88	1826.88	1.08	1827.88	
1827.72	1827.72	1826.72	1.05	1827.72	
1827.56	1827.56	1826.56	1.01	1827.56	
1827.40	1827.40	1826.40	0.97	1827.40	
1827.24	1827.24	1826.24	0.96	1827.24	
1827.08	1827.08	1826.08	0.97	1827.08	
1826.92	1826.92	1825.92	0.97	1826.92	
1826.76	1826.76	1825.76	0.95	1826.76	
1826.60	1826.60	1825.60	0.92	1826.60	
1826.43	1826.43	1825.43	0.90	1826.43	
1826.27	1826.27	1825.27	0.87	1826.27	
1826.11	1826.11	1825.11	0.85	1826.11	
1825.95	1825.95	1824.95	0.84	1825.95	
1825.79	1825.79	1824.79	0.85	1825.79	
1825.63	1825.63	1824.63	0.83	1825.63	
1825.47	1825.47	1824.47	0.86	1825.47	
1825.31	1825.31	1824.31	0.86	1825.31	
1825.15	1825.15	1824.15	0.86	1825.15	
1825.00	1825.00	1824.00	0.87	1825.00	

Chuma tank supply line
SCALE: HOR 1:2000 VERT 1:1000



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FOR CONSTRUCTION
signed CMTS

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

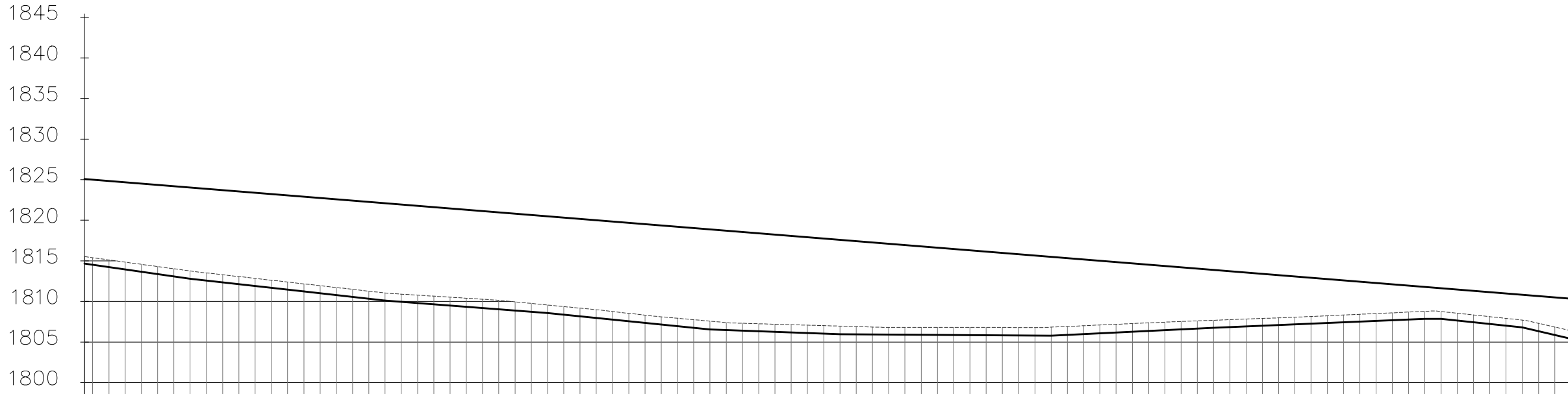
CLIENT
TANA WATER WORKS DEVELOPMENT AGENCY
 P. O. BOX 1292-10100
 NYERI

PROJECT
 DESIGNS FOR AUGMENTATION OF
 TIGITHI-HUMUKA WATER PROJECT

Civil/Structural Engineers
TANA WATER WORKS DEVELOPMENT AGENCY
 P. O. BOX 1292-10100
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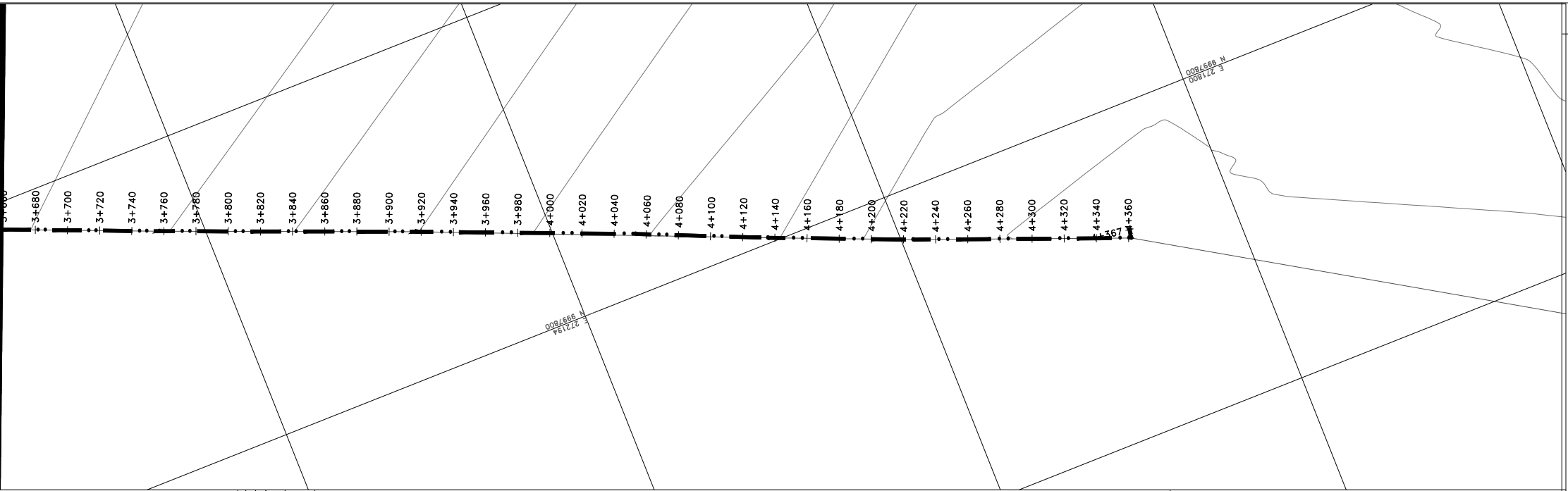
Drawing Title
 CHUMA TANK SUPPLY
 LINE
 PLAN AND PROFILE (SHEET 2 OF 3)

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/CTSL/02/CO



DISTANCE DATUM (m)	GROUND LEVELS (m)	INVERT LEVELS(m)	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	HGL(m)	TYPE OF PIPE AND SIZE
1825.07	1814.55	1815.52	0.87	1815.52	PN10 0D50MM HDPE
1824.99	1814.51	1815.35	0.88	1815.35	
1824.82	1814.22	1815.11	0.89	1815.11	
1824.66	1813.94	1814.84	0.91	1814.84	
1824.50	1813.65	1814.57	0.92	1814.57	
1824.34	1813.36	1814.30	0.94	1814.30	
1824.18	1813.08	1814.03	0.95	1814.03	
1824.02	1812.79	1813.76	0.97	1813.76	
1823.86	1812.51	1813.52	0.95	1813.52	
1823.70	1812.24	1813.29	0.95	1813.29	
1823.54	1811.96	1813.07	0.94	1813.07	
1823.37	1811.68	1812.84	0.94	1812.84	
1823.21	1811.40	1812.62	0.94	1812.62	
1823.05	1811.12	1812.39	0.94	1812.39	
1822.89	1810.84	1812.17	0.94	1812.17	
1822.73	1810.56	1811.94	0.94	1811.94	
1822.57	1810.28	1811.72	0.94	1811.72	
1822.41	1810.00	1811.49	0.94	1811.49	
1822.25	1809.72	1811.27	0.94	1811.27	
1822.09	1809.44	1811.04	0.94	1811.04	
1821.93	1809.16	1810.82	0.94	1810.82	
1821.76	1808.88	1810.59	0.98	1810.59	
1821.60	1808.60	1810.37	1.01	1810.37	
1821.44	1808.32	1810.15	1.03	1810.15	
1821.28	1808.04	1810.00	1.06	1810.00	
1821.12	1807.76	1809.84	1.09	1809.84	
1820.96	1807.48	1809.68	1.11	1809.68	
1820.80	1807.20	1809.52	1.07	1809.52	
1820.64	1806.92	1809.36	1.02	1809.36	
1820.48	1806.64	1809.20	0.98	1809.20	
1820.31	1806.36	1809.04	0.99	1809.04	
1820.15	1806.08	1808.88	1.00	1808.88	
1820.00	1805.80	1808.72	1.00	1808.72	
1819.83	1805.52	1808.56	0.99	1808.56	
1819.67	1805.24	1808.40	0.97	1808.40	
1819.51	1804.96	1808.24	0.94	1808.24	
1819.35	1804.68	1808.08	0.94	1808.08	
1819.19	1804.40	1807.92	0.97	1807.92	
1819.03	1804.12	1807.76	0.99	1807.76	
1818.87	1803.84	1807.60	1.02	1807.60	
1818.70	1803.56	1807.44	0.91	1807.44	
1818.54	1803.28	1807.28	0.90	1807.28	
1818.38	1803.00	1807.12	0.92	1807.12	
1818.22	1802.72	1806.96	0.93	1806.96	
1818.06	1802.44	1806.80	0.95	1806.80	
1817.90	1802.16	1806.64	0.97	1806.64	
1817.74	1801.88	1806.48	0.98	1806.48	
1817.58	1801.60	1806.32	1.00	1806.32	
1817.42	1801.32	1806.16	0.96	1806.16	
1817.26	1801.04	1806.00	0.91	1806.00	
1817.09	1800.76	1805.84	0.89	1805.84	
1816.93	1800.48	1805.68	0.90	1805.68	
1816.77	1800.20	1805.52	0.91	1805.52	
1816.61	1799.92	1805.36	0.92	1805.36	
1816.45	1799.64	1805.20	0.94	1805.20	
1816.29	1799.36	1805.04	0.95	1805.04	
1816.13	1799.08	1804.88	0.96	1804.88	
1815.97	1798.80	1804.72	0.97	1804.72	
1815.81	1798.52	1804.56	0.98	1804.56	
1815.64	1798.24	1804.40	0.99	1804.40	
1815.48	1797.96	1804.24	1.05	1804.24	
1815.32	1797.68	1804.08	1.04	1804.08	
1815.16	1797.40	1803.92	1.03	1803.92	
1815.00	1797.12	1803.76	1.03	1803.76	
1814.84	1796.84	1803.60	1.02	1803.60	
1814.68	1796.56	1803.44	1.01	1803.44	
1814.52	1796.28	1803.28	1.00	1803.28	
1814.36	1796.00	1803.12	0.99	1803.12	
1814.20	1795.72	1802.96	0.98	1802.96	
1814.03	1795.44	1802.80	0.96	1802.80	
1813.87	1795.16	1802.64	0.94	1802.64	
1813.71	1794.88	1802.48	0.93	1802.48	
1813.55	1794.60	1802.32	0.92	1802.32	
1813.39	1794.32	1802.16	0.91	1802.16	
1813.23	1794.04	1802.00	0.89	1802.00	
1813.07	1793.76	1801.84	0.88	1801.84	
1812.91	1793.48	1801.68	0.89	1801.68	
1812.75	1793.20	1801.52	0.89	1801.52	
1812.58	1792.92	1801.36	0.90	1801.36	
1812.42	1792.64	1801.20	0.90	1801.20	
1812.26	1792.36	1801.04	0.91	1801.04	
1812.10	1792.08	1800.88	0.92	1800.88	
1811.94	1791.80	1800.72	0.93	1800.72	
1811.78	1791.52	1800.56	0.93	1800.56	
1811.62	1791.24	1800.40	0.90	1800.40	
1811.46	1790.96	1800.24	0.90	1800.24	
1811.30	1790.68	1800.08	0.90	1800.08	
1811.14	1790.40	1800.00	0.90	1800.00	
1811.00	1790.12	1800.00	0.90	1800.00	
1810.81	1789.84	1800.00	0.90	1800.00	
1810.65	1789.56	1800.00	0.97	1800.00	
1810.49	1789.28	1800.00	0.98	1800.00	
1810.33	1789.00	1800.00	0.99	1800.00	

Chuma tank supply line
 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)	TYPE OF PIPE AND SIZE
3+680	1810.33	1805.40	0.99	1810.33	PN10 OD50MM HDPE
3+700	1810.17	1804.93	1.00	1810.17	
3+720	1810.01	1804.46	1.02	1810.01	
3+740	1809.85	1803.99	1.03	1809.85	
3+760	1809.69	1803.52	1.04	1809.69	
3+780	1809.53	1803.05	1.04	1809.53	
3+800	1809.36	1802.58	0.99	1809.36	
3+820	1809.20	1802.11	0.95	1809.20	
3+840	1809.04	1801.65	0.90	1809.04	
3+860	1808.88	1801.19	0.93	1808.88	
3+880	1808.72	1800.72	0.96	1808.72	
3+900	1808.56	1800.25	0.99	1808.56	
3+920	1808.40	1800.00	1.02	1808.40	
3+940	1808.24	1799.47	1.04	1808.24	
3+960	1808.08	1798.94	1.02	1808.08	
3+980	1807.91	1798.41	0.98	1807.91	
4+000	1807.75	1797.88	0.97	1807.75	
4+020	1807.59	1797.35	0.95	1807.59	
4+040	1807.43	1796.82	0.88	1807.43	
4+060	1807.27	1796.29	0.84	1807.27	
4+080	1807.11	1795.76	0.87	1807.11	
4+100	1806.95	1795.23	0.90	1806.95	
4+120	1806.79	1794.70	0.92	1806.79	
4+140	1806.63	1794.17	0.88	1806.63	
4+160	1806.47	1793.64	0.89	1806.47	
4+180	1806.30	1793.11	0.90	1806.30	
4+200	1806.14	1792.58	0.91	1806.14	
4+220	1805.98	1792.05	0.92	1805.98	
4+240	1805.82	1791.52	0.78	1805.82	
4+260	1805.66	1790.99	0.80	1805.66	
4+280	1805.50	1790.46	0.82	1805.50	
4+300	1805.34	1789.93	0.84	1805.34	
4+320	1805.18	1789.40	0.86	1805.18	
4+340	1805.02	1788.87	0.88	1805.02	
4+360	1804.85	1788.34	0.90	1804.85	


Chuma tank supply line
SCALE: HOR 1:2000 VERT 1:1000

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 - EXISTING GROUND PROFILE
 - PIPE INVERT PROFILE
 - EXISTING ROAD
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 - DAV — DOUBLE AIR VALVE
 - ⬆ WASHOUT
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 - 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

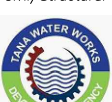


TANA WATER WORKS
DEVELOPMENT AGENCY
P. O. BOX 1292-10100
NYERI

PROJECT

DESIGNS FOR AUGMENTATION OF
TIGITHI-HUMUKA WATER PROJECT

Civil/Structural Engineers



TANA WATER WORKS
DEVELOPMENT AGENCY
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NYERI

Drawing Title

CHUMA TANK SUPPLY
LINE
PLAN AND PROFILE (SHEET 3 OF 3)

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/CTSL/03
	REV