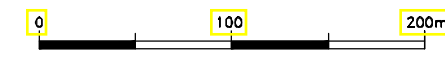


CHAINAGE (m)	0+000.00	0+013.21	0+030.00	0+040.00	0+060.00	0+080.00	0+100.00	0+120.00	0+140.00	0+155.71	0+180.00	0+200.00	0+220.00	0+228.38	0+240.00	0+260.00	0+280.00	0+300.00	0+320.00	0+340.00	0+360.00	0+380.00	0+400.00	0+420.00	0+440.00	0+460.00	0+500.00	0+520.00	0+527.97	0+540.00	0+560.00	0+580.00	0+600.00	0+620.00	0+640.00	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	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														
EXISTING GROUND LEVEL (m)	705.82	708.03	708.05	707.90	707.70	707.29	707.02	706.75	706.54	707.15	707.44	707.11	707.90	707.18	706.74	706.28	706.35	706.32	706.17	706.07	705.87	705.63	705.87	705.38	705.23	705.20	705.08	705.28	705.98	706.29	706.40	706.29	706.10	705.89	705.45	705.36	705.23	705.08	704.82	704.92	704.78	704.53	704.32	704.18	703.83	703.55	703.30	703.25	703.16	703.02	702.88	702.83	702.85	703.15	703.40	703.34	703.33	703.28	703.18	703.04	702.89	702.69	702.35	702.04	701.83												
INVERT LEVELS (m)	704.32	706.97	706.73	706.49	706.25	706.01	705.76	705.52	705.34	705.94	705.66	705.78	705.90	705.94	705.85	705.66	705.49	705.33	705.16	705.00	704.85	704.66	704.50	704.33	704.16	704.00	703.88	704.06	704.62	705.18	705.40	705.29	705.11	704.93	704.75	704.57	704.39	704.21	704.03	703.85	703.67	703.49	703.31	703.13	702.95	702.77	702.59	702.41	702.23	702.05	701.87	701.81	701.76	701.71	701.67	701.62	701.58	701.53	701.48	701.44	701.39	701.34	701.29	701.24	701.19	701.14	701.09	701.04	700.99	700.94	700.89	700.84	700.79	700.74	700.69	700.64	700.59
DEPTH OF INVERT (m)	1.50	1.08	1.31	1.41	1.45	1.28	1.25	1.35	1.23	1.23	1.81	1.78	1.33	1.28	1.23	0.81	0.82	0.88	1.00	1.00	1.07	1.04	0.87	1.17	1.05	1.06	1.20	1.20	1.00	1.00	0.89	0.96	1.06	0.88	0.87	1.02	1.05	1.07	1.10	1.04	1.01	1.05	0.88	0.83	0.83	0.87	0.71	0.83	0.83	0.87	1.08	1.03	1.19	1.44	1.73	1.72	1.75	1.73	1.69	1.60	1.80	1.51	1.37	1.26	1.07												
FLOW PARAMETERS DATUM (m)																																																																													
TYPE OF PIPE AND SIZE	110mm DIA. HDPE PIPE PN 18																																																																												
GEOLOGICAL CONDITION	TYPE 'RED LOAMY SOIL'																																																																												

**LONGITUDINAL SECTION**



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

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - 1:480 CONTOURS
  - RIVER/STREAM
  - V.J. VIKING JOHNSON
  - GV GATE VALVE
  - SV-01 SECTIONAL VALVE & No.
  - WO-01 WASHOUT VALVE & No.
  - SAV-01 AIR VALVE & No.
  - WM WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE

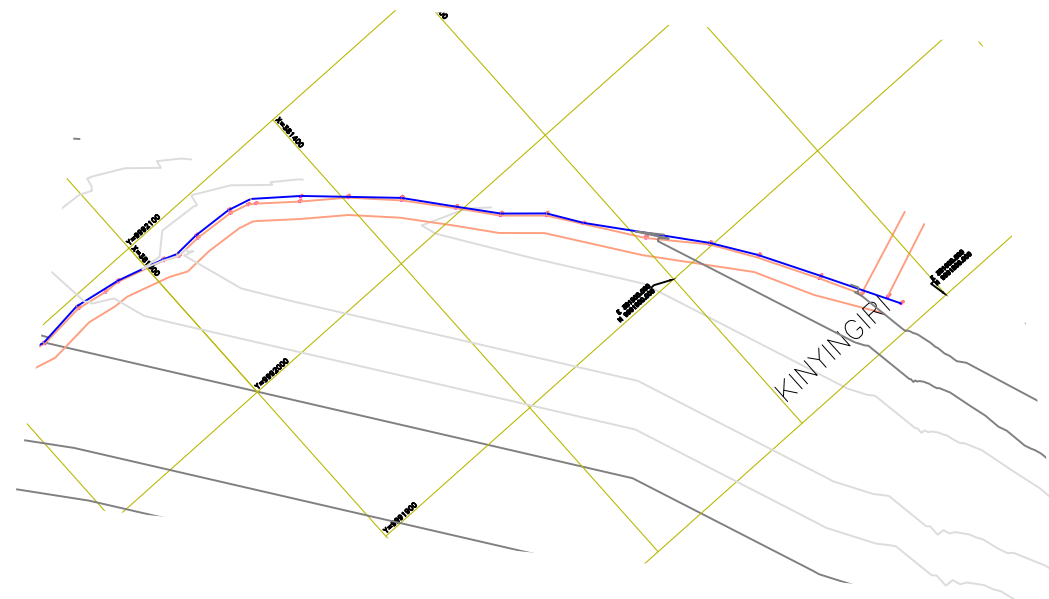
CLIENT: THE CHIEF EXECUTIVE OFFICER  
**TANA WATER WORKS DEVELOPMENT AGENCY**  
 P.O BOX 1292 - 10100,  
 NYERI, KENYA

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

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

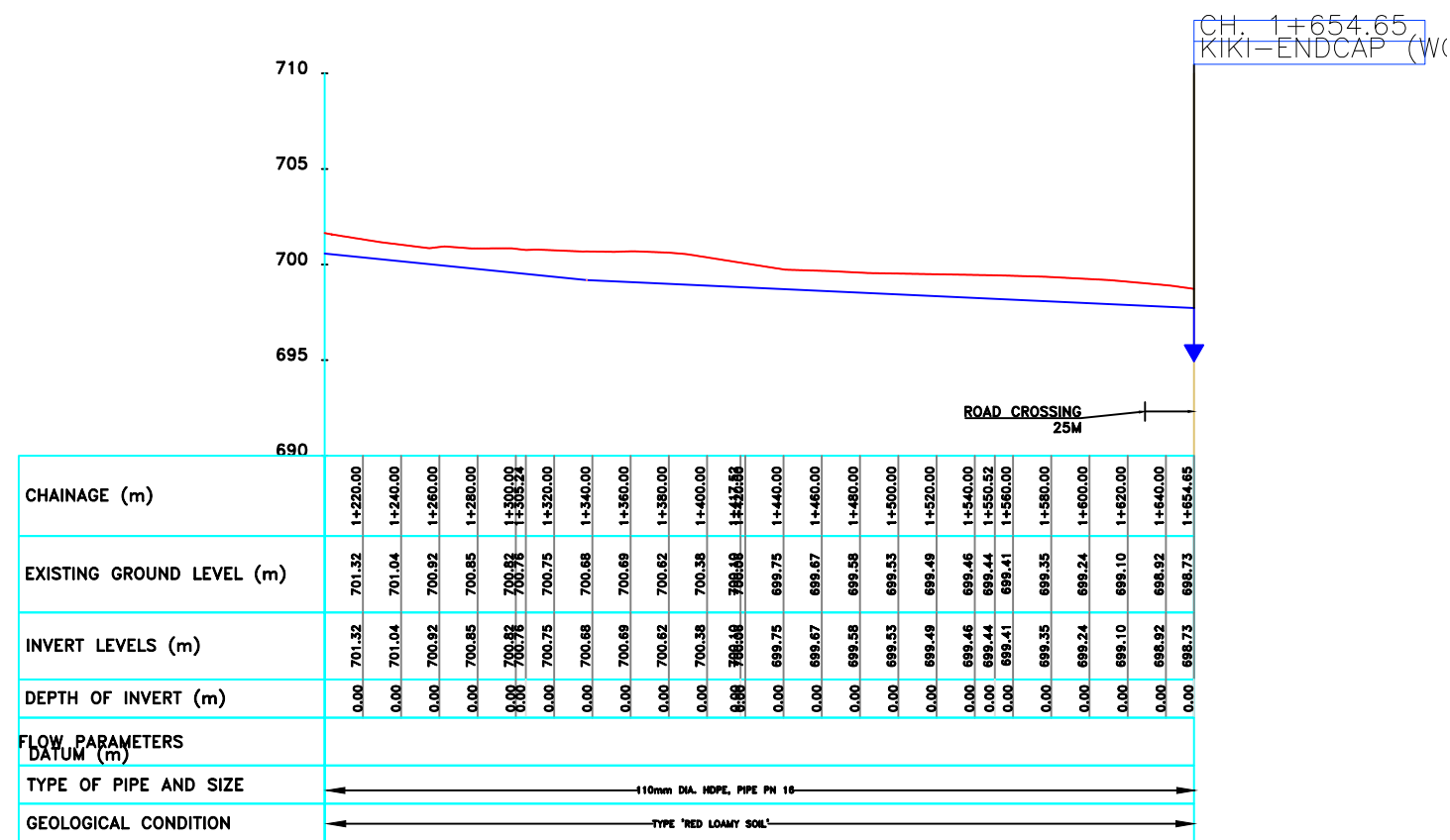
DRAWING TITLE:  
**KIBUNG'A TO KINYINGIRI PLAN AND PROFILE SECTION**  
 CH. 0+000.00 - 1+200.00  
 SHEET 1 OF 2

Designed by: A.M.M Drawn by: A.M.M  
 Checked by: D.N.W Approved by: D.N.W  
 Scale: H: 1:4000, V: 1:400 Date: MAY 2022  
 DRG No. **KIKI/01**

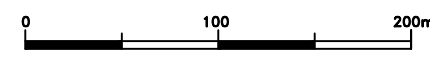


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  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

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



**LONGITUDINAL SECTION**



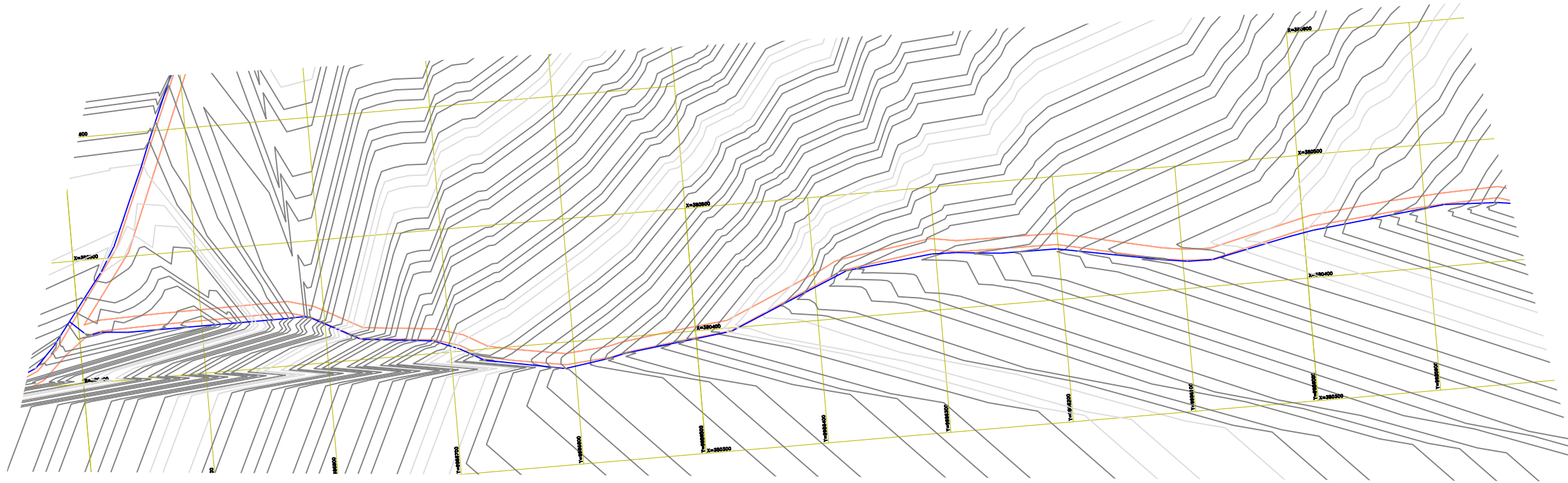
CLIENT: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

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

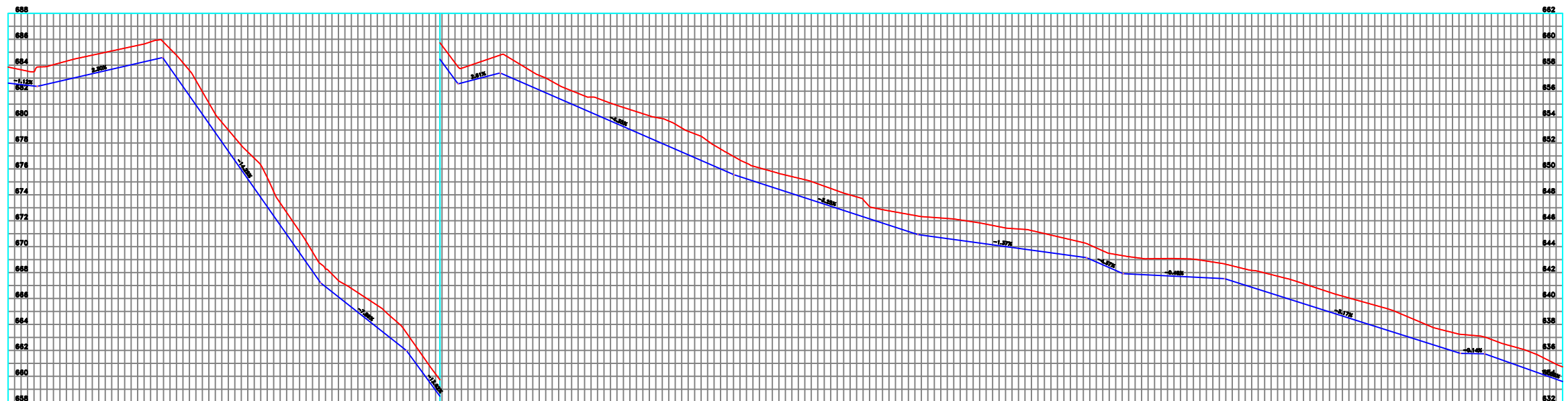
DRAWING TITLE:  
**KIBUNG'A TO KINYINGIRI PLAN AND  
PROFILE SECTION  
CH. 0+000.00 - 1+200.00  
SHEET 2 OF 2**

Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
DRG No. <b>KIKI/02</b>	REV

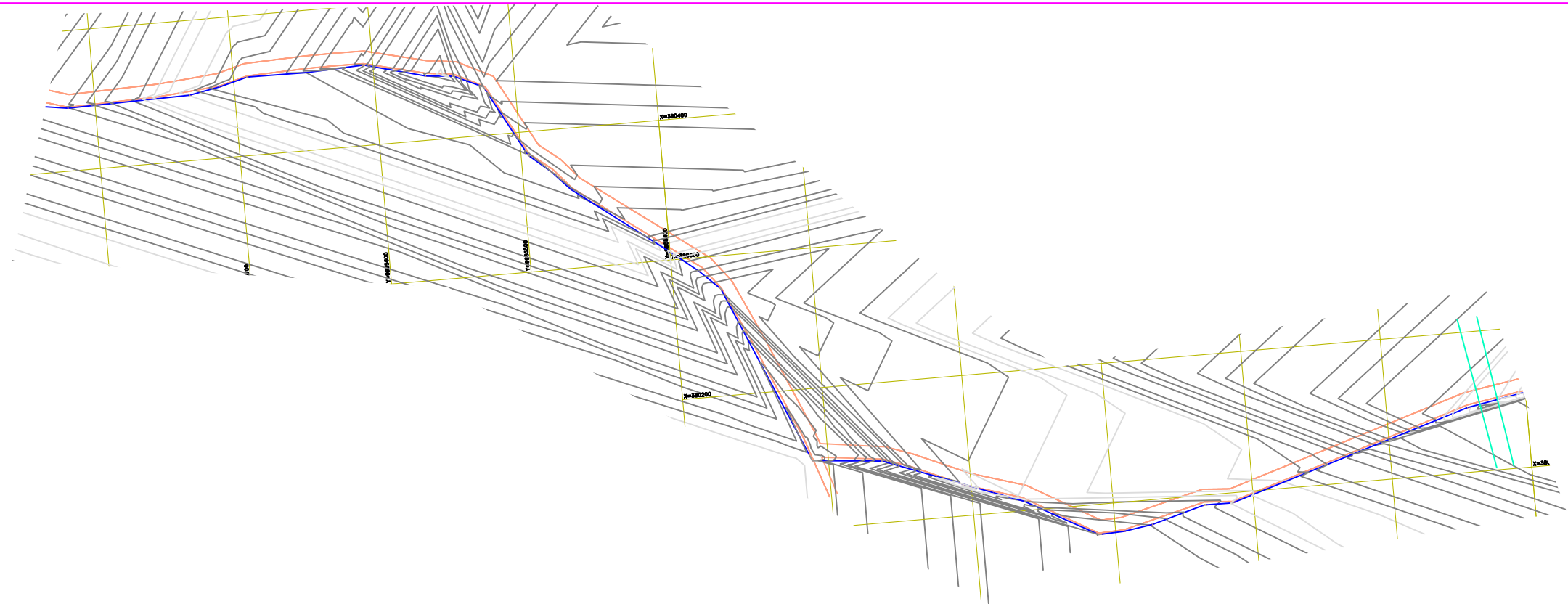


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  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
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- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - CONTOURS
  - RIVER/STREAM
  - V.J. VIKING JOHNSON
  - GV GATE VALVE
  - SV-01 SECTIONAL VALVE & No.
  - WO-01 WASHOUT VALVE & No.
  - SAV-01 AIR VALVE & No.
  - WM WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE

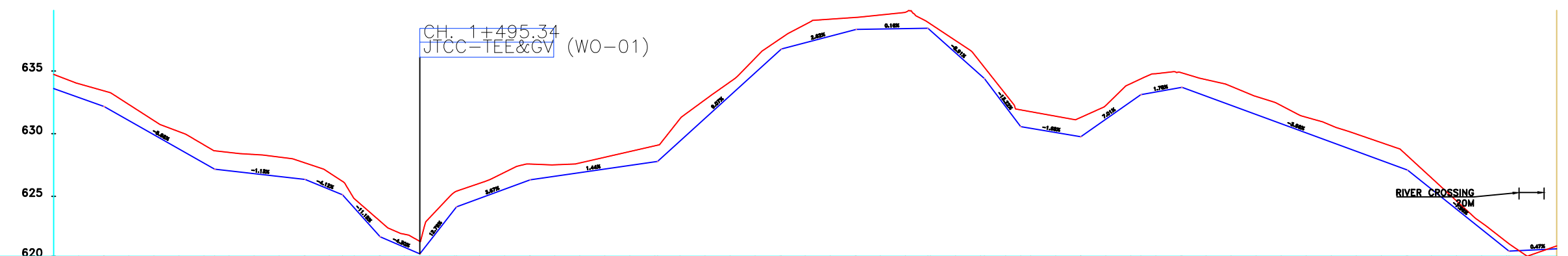


CHAINAGE (m)	0+000.00	0+020.00	0+040.00	0+060.00	0+080.00	0+100.00	0+120.00	0+140.00	0+160.00	0+180.00	0+200.00	0+220.00	0+240.00	0+260.00	0+280.00	0+300.00	0+320.00	0+340.00	0+360.00	0+380.00	0+400.00	0+420.00	0+440.00	0+460.00	0+480.00	0+500.00	0+520.00	0+540.00	0+560.00	0+580.00	0+600.00	0+620.00	0+640.00	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	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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
EXISTING GROUND LEVEL (m)	683.85	683.89	684.17	684.67	685.10	685.53	686.00	686.59	687.21	687.82	688.34	688.91	689.52	690.17	690.85	691.56	692.30	693.07	693.87	694.69	695.53	696.39	697.27	698.16	699.06	699.97	700.89	701.82	702.76	703.71	704.66	705.61	706.56	707.51	708.46	709.41	710.36	711.31	712.26	713.21	714.16	715.11	716.06	717.01	717.96	718.91	719.86	720.81	721.76	722.71	723.66	724.61	725.56	726.51	727.46	728.41	729.36	730.31	731.26	732.21	733.16	734.11	735.06	736.01	736.96	737.91	738.86	739.81	740.76	741.71	742.66	743.61	744.56	745.51	746.46	747.41	748.36	749.31	750.26	751.21	752.16	753.11	754.06	755.01	755.96	756.91	757.86	758.81	759.76	760.71	761.66	762.61	763.56	764.51	765.46	766.41	767.36	768.31	769.26	770.21	771.16	772.11	773.06	774.01	774.96	775.91	776.86	777.81	778.76	779.71	780.66	781.61	782.56	783.51	784.46	785.41	786.36	787.31	788.26	789.21	790.16	791.11	792.06	793.01	793.96	794.91	795.86	796.81	797.76	798.71	799.66	800.61	801.56	802.51	803.46	804.41	805.36	806.31	807.26	808.21	809.16	810.11	811.06	812.01	812.96	813.91	814.86	815.81	816.76	817.71	818.66	819.61	820.56	821.51	822.46	823.41	824.36	825.31	826.26	827.21	828.16	829.11	830.06	831.01	831.96	832.91	833.86	834.81	835.76	836.71	837.66	838.61	839.56	840.51	841.46	842.41	843.36	844.31	845.26	846.21	847.16	848.11	849.06	850.01	850.96	851.91	852.86	853.81	854.76	855.71	856.66	857.61	858.56	859.51	860.46	861.41	862.36	863.31	864.26	865.21	866.16	867.11	868.06	869.01	870.00	870.96	871.91	872.86	873.81	874.76	875.71	876.66	877.61	878.56	879.51	880.46	881.41	882.36	883.31	884.26	885.21	886.16	887.11	888.06	889.01	890.00	890.96	891.91	892.86	893.81	894.76	895.71	896.66	897.61	898.56	899.51	900.46	901.41	902.36	903.31	904.26	905.21	906.16	907.11	908.06	909.01	910.00	910.96	911.91	912.86	913.81	914.76	915.71	916.66	917.61	918.56	919.51	920.46	921.41	922.36	923.31	924.26	925.21	926.16	927.11	928.06	929.01	930.00	930.96	931.91	932.86	933.81	934.76	935.71	936.66	937.61	938.56	939.51	940.46	941.41	942.36	943.31	944.26	945.21	946.16	947.11	948.06	949.01	950.00	950.96	951.91	952.86	953.81	954.76	955.71	956.66	957.61	958.56	959.51	960.46	961.41	962.36	963.31	964.26	965.21	966.16	967.11	968.06	969.01	970.00	970.96	971.91	972.86	973.81	974.76	975.71	976.66	977.61	978.56	979.51	980.46	981.41	982.36	983.31	984.26	985.21	986.16	987.11	988.06	989.01	990.00	990.96	991.91	992.86	993.81	994.76	995.71	996.66	997.61	998.56	999.51	1000.46	1001.41	1002.36	1003.31	1004.26	1005.21	1006.16	1007.11	1008.06	1009.01	1010.00	1010.96	1011.91	1012.86	1013.81	1014.76	1015.71	1016.66	1017.61	1018.56	1019.51	1020.46	1021.41	1022.36	1023.31	1024.26	1025.21	1026.16	1027.11	1028.06	1029.01	1030.00	1030.96	1031.91	1032.86	1033.81	1034.76	1035.71	1036.66	1037.61	1038.56	1039.51	1040.46	1041.41	1042.36	1043.31	1044.26	1045.21	1046.16	1047.11	1048.06	1049.01	1050.00	1050.96	1051.91	1052.86	1053.81	1054.76	1055.71	1056.66	1057.61	1058.56	1059.51	1060.46	1061.41	1062.36	1063.31	1064.26	1065.21	1066.16	1067.11	1068.06	1069.01	1070.00	1070.96	1071.91	1072.86	1073.81	1074.76	1075.71	1076.66	1077.61	1078.56	1079.51	1080.46	1081.41	1082.36	1083.31	1084.26	1085.21	1086.16	1087.11	1088.06	1089.01	1090.00	1090.96	1091.91	1092.86	1093.81	1094.76	1095.71	1096.66	1097.61	1098.56	1099.51	1100.46	1101.41	1102.36	1103.31	1104.26	1105.21	1106.16	1107.11	1108.06	1109.01	1110.00	1110.96	1111.91	1112.86	1113.81	1114.76	1115.71	1116.66	1117.61	1118.56	1119.51	1120.46	1121.41	1122.36	1123.31	1124.26	1125.21	1126.16	1127.11	1128.06	1129.01	1130.00	1130.96	1131.91	1132.86	1133.81	1134.76	1135.71	1136.66	1137.61	1138.56	1139.51	1140.46	1141.41	1142.36	1143.31	1144.26	1145.21	1146.16	1147.11	1148.06	1149.01	1150.00	1150.96	1151.91	1152.86	1153.81	1154.76	1155.71	1156.66	1157.61	1158.56	1159.51	1160.46	1161.41	1162.36	1163.31	1164.26	1165.21	1166.16	1167.11	1168.06	1169.01	1170.00	1170.96	1171.91	1172.86	1173.81	1174.76	1175.71	1176.66	1177.61	1178.56	1179.51	1180.46	1181.41	1182.36	1183.31	1184.26	1185.21	1186.16	1187.11	1188.06	1189.01	1190.00	1190.96	1191.91	1192.86	1193.81	1194.76	1195.71	1196.66	1197.61	1198.56	1199.51	1200.46	1201.41	1202.36	1203.31	1204.26	1205.21	1206.16	1207.11	1208.06	1209.01	1210.00	1210.96	1211.91	1212.86	1213.81	1214.76	1215.71	1216.66	1217.61	1218.56	1219.51	1220.46	1221.41	1222.36	1223.31	1224.26	1225.21	1226.16	1227.11	1228.06	1229.01	1230.00	1230.96	1231.91	1232.86	1233.81	1234.76	1235.71	1236.66	1237.61	1238.56	1239.51	1240.46	1241.41	1242.36	1243.31	1244.26	1245.21	1246.16	1247.11	1248.06	1249.01	1250.00	1250.96	1251.91	1252.86	1253.81	1254.76	1255.71	1256.66	1257.61	1258.56	1259.51	1260.46	1261.41	1262.36	1263.31	1264.26	1265.21	1266.16	1267.11	1268.06	1269.01	1270.00	1270.96	1271.91	1272.86	1273.81	1274.76	1275.71	1276.66	1277.61	1278.56	1279.51	1280.46	1281.41	1282.36	1283.31	1284.26	1285.21	1286.16	1287.11	1288.06	1289.01	1290.00	1290.96	1291.91	1292.86	1293.81	1294.76	1295.71	1296.66	1297.61	1298.56	1299.51	1300.46	1301.41	1302.36	1303.31	1304.26	1305.21	1306.16	1307.11	1308.06	1309.01	1310.00	1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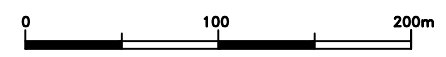
- NOTES:**
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- LEGEND:**
- MURRAM ROAD
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  - CONTOURS
  - RIVER/STREAM
  - V.J. VIKING JOHNSON
  - GV GATE VALVE
  - SV-01 SECTIONAL VALVE & No.
  - WO-01 WASHOUT VALVE & No.
  - SAV-01 AIR VALVE & No.
  - WM WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	FLOW PARAMETERS DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION
1+200.00	634.73	633.60	1.13			
1+220.00	633.98	632.89	1.10			
1+240.00	633.43	632.18	1.24			
1+260.00	632.33	631.05	1.28			
1+280.00	631.05	629.92	1.13			
1+300.00	630.16	628.78	1.38			
1+320.00	629.10	627.65	1.45			
1+340.00	628.64	627.17	1.47			
1+360.00	628.34	626.81	1.53			
1+380.00	628.13	626.59	1.55			
1+400.00	627.69	626.35	1.33			
1+420.00	626.89	625.56	1.33			
1+440.00	626.20	625.12	1.07			
1+460.00	624.62	624.06	0.74			
1+480.00	623.08	623.08	1.25			
1+500.00	621.41	620.41	1.00			
1+520.00	623.28	621.39	1.89			
1+540.00	626.04	624.84	1.20			
1+560.00	626.92	625.57	1.35			
1+580.00	627.58	626.30	1.28			
1+600.00	627.52	626.60	0.91			
1+620.00	627.66	626.89	0.77			
1+640.00	628.12	627.18	0.94			
1+660.00	628.58	627.47	1.11			
1+680.00	629.06	627.78	1.28			
1+700.00	631.16	629.41	1.78			
1+720.00	632.70	631.22	1.48			
1+740.00	634.13	633.03	1.09			
1+760.00	636.02	634.85	1.17			
1+780.00	637.88	636.69	1.19			
1+800.00	638.71	637.25	1.45			
1+820.00	639.13	637.78	1.36			
1+840.00	639.28	638.02	1.26			
1+860.00	639.47	638.35	1.12			
1+880.00	639.69	638.38	1.30			
1+900.00	639.79	638.44	1.35			
1+920.00	637.43	636.45	0.98			
1+940.00	635.98	634.62	1.36			
1+960.00	633.15	632.16	1.00			
1+972.07	631.90	630.96	1.34			
1+980.00	631.75	630.45	1.33			
2+000.00	631.39	630.09	1.30			
2+020.00	631.30	629.75	1.54			
2+040.00	632.25	631.15	1.10			
2+060.00	634.00	632.95	1.05			
2+087.98	634.37	635.11	1.26			
2+090.00	634.76	635.53	1.46			
2+100.00	634.85	635.89	1.13			
2+120.00	634.31	632.99	1.32			
2+140.00	633.78	632.26	1.52			
2+160.00	632.97	631.53	1.44			
2+180.00	632.24	630.80	1.45			
2+200.00	631.31	630.08	1.25			
2+220.00	630.66	629.33	1.32			
2+240.00	629.97	628.60	1.38			
2+260.00	629.29	627.87	1.42			
2+280.00	629.24	627.15	1.11			
2+300.00	628.46	626.59	0.80			
2+320.00	624.64	623.88	0.66			
2+340.00	622.90	622.38	0.52			
2+360.00	621.37	620.63	0.69			
2+380.00	620.35	620.72	-0.37			
2+400.00	621.05	620.81	0.23			

**LONGITUDINAL SECTION**



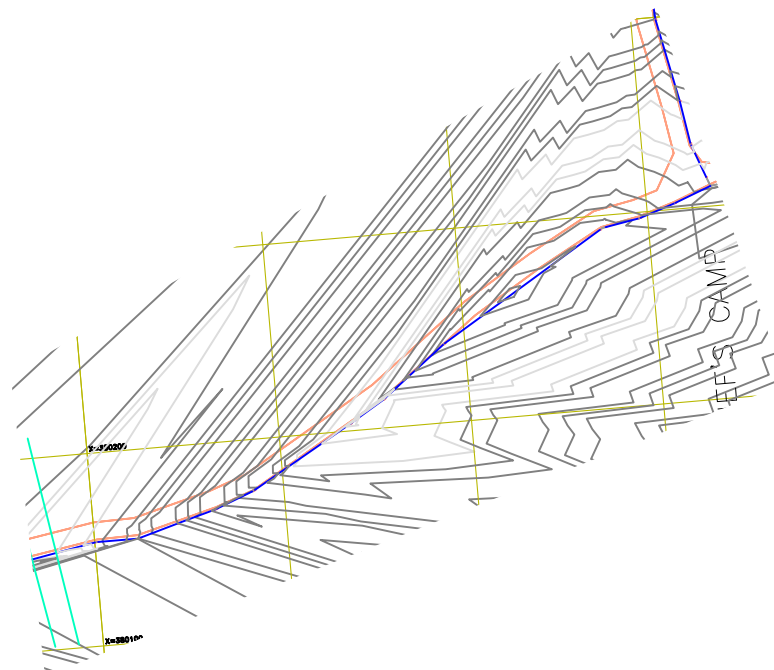
CLIENT: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

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

DRAWING TITLE:  
**JUNCTION TO CHIEF'S CAMP PLAN  
AND PROFILE SECTION  
CH. 1+200.00 - 2+400.00  
SHEET 2 OF 3**

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



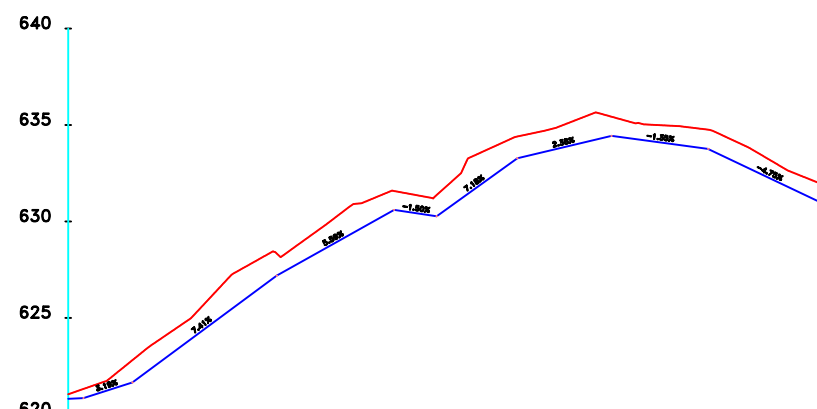
**NOTES:**

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

**LEGEND:**

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

CH. 2+793.43  
JTCC=TEE, GV&ENDCA



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)
2+400.00	621.05	620.81	0.23
2+407.93	621.32	620.85	0.47
2+420.00	621.74	621.23	0.51
2+433.32	622.82	621.66	1.16
2+440.00	623.36	622.15	1.20
2+460.00	624.74	623.63	1.11
2+480.00	626.74	625.12	1.62
2+500.00	628.11	626.60	1.51
2+508.08	628.34	627.20	1.15
2+520.00	628.86	627.86	1.00
2+540.00	630.33	628.98	1.35
2+560.00	631.27	630.10	1.18
2+566.97	631.58	630.60	0.98
2+580.00	631.37	630.43	0.94
2+590.97	631.37	630.27	1.10
2+600.00	632.18	630.92	1.26
2+620.00	633.85	632.35	1.50
2+632.81	634.40	633.27	1.13
2+640.00	634.56	633.44	1.11
2+660.00	635.13	633.92	1.21
2+680.98	636.43	634.48	1.95
2+700.00	635.02	634.19	0.84
2+720.00	634.90	633.92	0.98
2+751.58	634.76	633.76	1.00
2+740.00	634.42	633.36	1.08
2+760.00	633.41	632.41	0.99
2+780.00	632.36	631.46	0.90
2+793.43	631.82	630.82	1.00

**LONGITUDINAL SECTION**

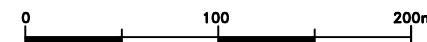
CLIENT: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

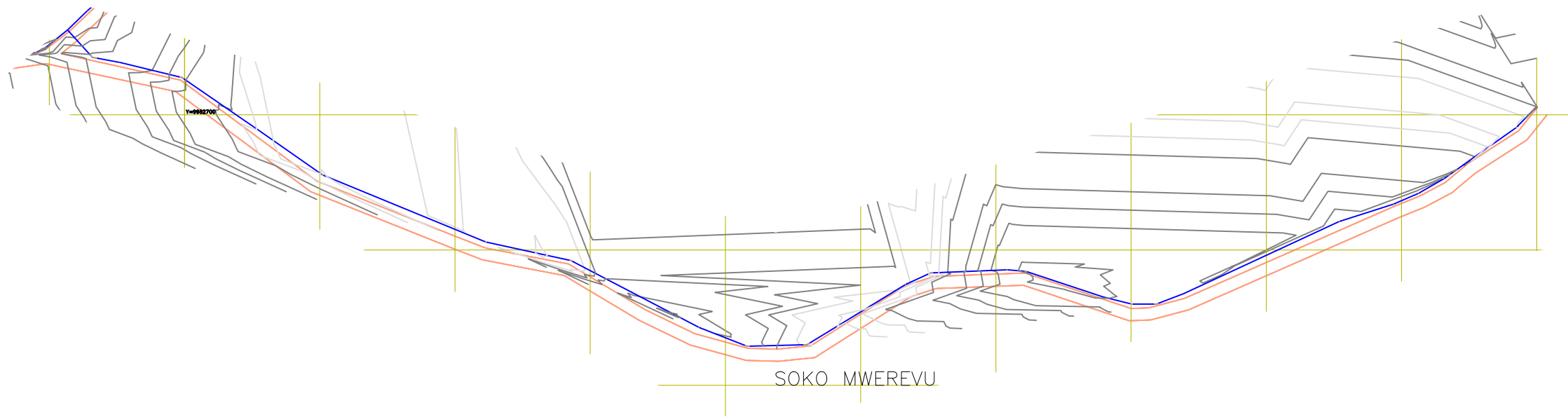
ENGINEER: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

DRAWING TITLE:  
**TURIMA JUNCTION TO KINYINGIRI  
PLAN AND PROFILE SECTION  
CH. 2+400.00 - 2+793.43  
SHEET 3 OF 3**

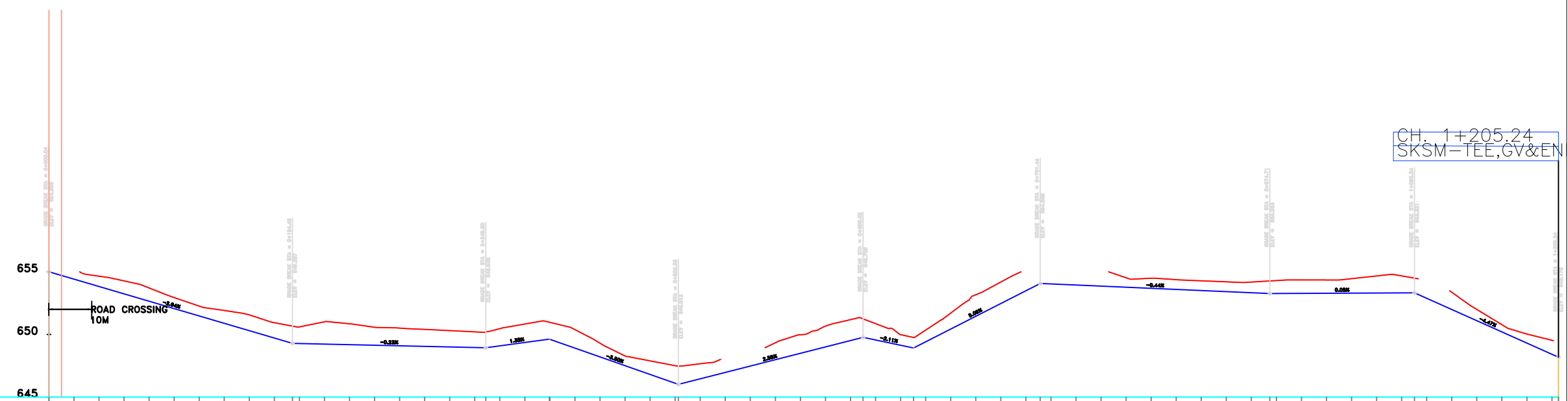
Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
DRG No. JTCC/03	REV





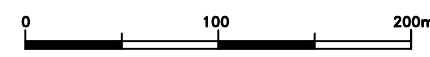
- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT TWO METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:200
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS

- LEGEND:**
- MURRAM ROAD
  - FENCE / HEDGE
  - 1480 CONTOURS
  - RIVER/STREAM
  - V.J. VIKING JOHNSON
  - GV GATE VALVE
  - SV-01 SECTIONAL VALVE & No.
  - WO-01 WASHOUT VALVE & No.
  - SAV-01 AIR VALVE & No.
  - WM WATER METER
  - PROPOSED MASONRY CHAMBER
  - PROPOSED VALVE BOX
  - PROPOSED WATER LINE



CHAINAGE (m)	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	DEPTH OF INVERT (m)	FLOW PARAMETERS DATUM (m)	TYPE OF PIPE AND SIZE	GEOLOGICAL CONDITION
0+000.04	656.45	655.00	1.45			
0+020.00	655.27	654.41	0.86			
0+040.00	654.65	653.82	0.82			
0+060.00	654.27	653.24	1.04			
0+080.00	653.71	652.65	1.06			
0+100.00	652.94	652.06	0.88			
0+120.00	652.28	651.47	0.78			
0+140.00	651.91	650.89	1.02			
0+160.00	651.58	650.30	1.28			
0+180.00	650.94	649.71	1.22			
0+184.45	650.66	649.23	1.37			
0+200.00	650.80	649.27	1.32			
0+220.00	651.01	649.23	1.78			
0+240.00	650.85	649.18	1.66			
0+260.00	650.57	649.14	1.43			
0+280.00	650.50	649.09	1.41			
0+300.00	650.40	649.05	1.35			
0+320.00	650.30	649.00	1.30			
0+340.00	650.20	648.96	1.25			
0+348.90	650.19	648.94	1.25			
0+360.00	650.48	649.09	1.37			
0+380.00	650.83	649.36	1.47			
0+388.98	650.82	649.32	1.38			
0+420.00	650.38	648.90	1.47			
0+440.00	649.30	648.20	1.09			
0+460.00	648.28	647.50	0.77			
0+480.00	647.89	646.80	1.08			
0+500.00	647.59	646.50	1.09			
0+520.00	647.66	646.46	1.20			
0+540.00		646.97				
0+560.00		647.48				
0+580.00	648.34	647.98	1.35			
0+600.00	649.87	648.49	1.48			
0+620.00	650.66	649.00	1.66			
0+640.00	651.18	649.51	1.67			
0+650.02	651.24	649.77	1.47			
0+660.00	650.86	649.56	1.30			
0+680.00	649.88	649.14	0.84			
0+690.28	649.75	648.92	0.84			
0+700.00	650.35	649.41	0.93			
0+720.00	651.71	650.43	1.27			
0+740.00	653.17	651.45	1.72			
0+760.00	654.19	652.47	1.72			
0+780.00	655.19	653.49	1.70			
0+781.44	655.34	654.07	1.27			
0+800.00	655.39	654.03	1.36			
0+820.00	655.20	653.94	1.26			
0+840.00	655.14	653.85	1.29			
0+860.00	654.92	653.77	0.78			
0+880.00	654.49	653.68	0.81			
0+900.00	654.37	653.59	0.78			
0+920.00	654.28	653.50	0.78			
0+940.00	654.20	653.42	0.78			
0+960.00	654.18	653.33	0.85			
0+974.71	654.27	653.26	1.01			
0+980.00	654.30	653.27	1.04			
1+000.00	654.35	653.28	1.07			
1+020.00	654.35	653.29	1.06			
1+040.00	654.45	653.30	1.16			
1+060.00	654.67	653.51	1.36			
1+080.00	654.67	653.32	1.36			
1+090.24	654.49	653.32	1.17			
1+100.00	654.49	652.88	0.82			
1+120.00	653.37	651.99	1.38			
1+140.00	651.99	651.10	0.90			
1+160.00	650.78	650.20	0.58			
1+180.00	650.03	649.31	0.72			
1+200.00	649.53	648.11	1.12			

**LONGITUDINAL SECTION**



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

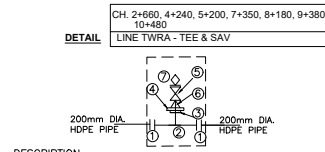
ENGINEER: THE CHIEF EXECUTIVE OFFICER  
TANA WATER WORKS  
DEVELOPMENT AGENCY  
P.O BOX 1292 - 10100,  
NYERI, KENYA

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

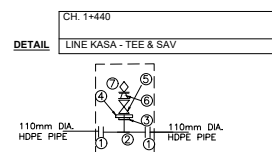
DRAWING TITLE:  
**SOKO M'JINGA TO SOKO MWEREVU  
PLAN AND PROFILE SECTION  
CH. 0+000.00 - 1+200.00  
SHEET 1 OF 1**

Designed by: A.M.M | Drawn by: A.M.M  
Checked by: D.N.W | Approved by: D.N.W  
Scale: H- 1:4000, V- 1:400 | Date: MAY 2022  
DRG No. **SKSM/01** | REV

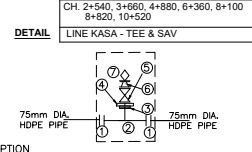
**AIRVALVE DETAILS**



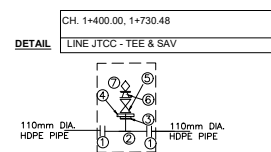
- DESCRIPTION**  
**7 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 200X200X63mm  
 ③ HDPE STUB END 63mm  
 ④ STEEL FLANGE 63mm  
 ⑤ GATE VALVE 50mm  
 ⑥ ALL FLANGED REDUCER 63mm X 50mm  
 ⑦ AIRVALVE 50mm



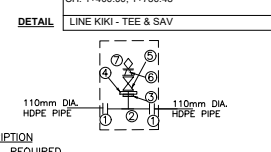
- DESCRIPTION**  
**7 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X50mm  
 ③ HDPE STUB END 50mm  
 ④ STEEL FLANGE 50mm  
 ⑤ GATE VALVE 50mm  
 ⑥ ALL FLANGED REDUCER 50mm X 25mm  
 ⑦ AIRVALVE 25mm



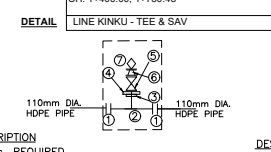
- DESCRIPTION**  
**7 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 75X75X50mm  
 ③ HDPE STUB END 50mm  
 ④ STEEL FLANGE 50mm  
 ⑤ GATE VALVE 50mm  
 ⑥ ALL FLANGED REDUCER 50mm X 25mm  
 ⑦ AIRVALVE 25mm



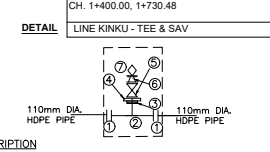
- DESCRIPTION**  
**7 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 50X50X50mm  
 ③ HDPE STUB END 50mm  
 ④ STEEL FLANGE 50mm  
 ⑤ GATE VALVE 50mm  
 ⑥ ALL FLANGED REDUCER 50mm X 25mm  
 ⑦ AIRVALVE 25mm



- DESCRIPTION**  
**7 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X50mm  
 ③ HDPE STUB END 50mm  
 ④ STEEL FLANGE 50mm  
 ⑤ GATE VALVE 50mm  
 ⑥ ALL FLANGED REDUCER 50mm X 25mm  
 ⑦ AIRVALVE 25mm

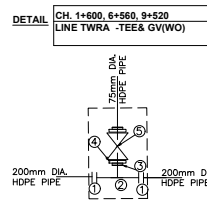


- DESCRIPTION**  
**7 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X50mm  
 ③ HDPE STUB END 50mm  
 ④ STEEL FLANGE 50mm  
 ⑤ GATE VALVE 50mm  
 ⑥ ALL FLANGED REDUCER 50mm X 25mm  
 ⑦ AIRVALVE 25mm

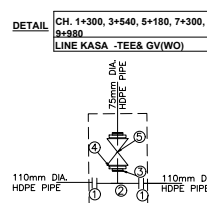


- DESCRIPTION**  
**7 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X50mm  
 ③ HDPE STUB END 50mm  
 ④ STEEL FLANGE 50mm  
 ⑤ GATE VALVE 50mm  
 ⑥ ALL FLANGED REDUCER 50mm X 25mm  
 ⑦ AIRVALVE 25mm

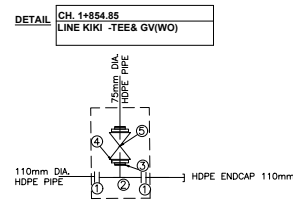
**WASHOUT DETAILS**



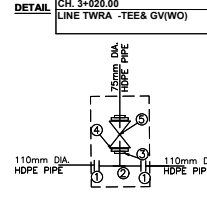
- DESCRIPTION**  
**10 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 200X200X75mm  
 ③ HDPE STUB END 75mm  
 ④ STEEL FLANGE 75mm  
 ⑤ ALL FLANGED GATE VALVE 80mm



- DESCRIPTION**  
**10 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X75mm  
 ③ HDPE STUB END 75mm  
 ④ STEEL FLANGE 75mm  
 ⑤ ALL FLANGED GATE VALVE 80mm

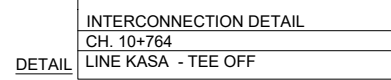
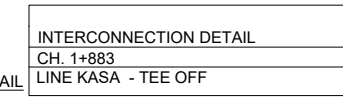


- DESCRIPTION**  
**10 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X75mm  
 ③ HDPE STUB END 75mm  
 ④ STEEL FLANGE 75mm  
 ⑤ ALL FLANGED GATE VALVE 80mm

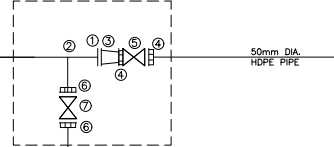


- DESCRIPTION**  
**10 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X75mm  
 ③ HDPE STUB END 75mm  
 ④ STEEL FLANGE 75mm  
 ⑤ ALL FLANGED GATE VALVE 80mm

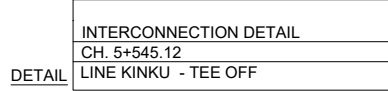
**OFFTAKE DETAILS**



- DESCRIPTION**  
**10 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 110X110X75mm  
 ③ HDPE REDUCER 110X75mm  
 ④ HDPE STUB END WITH STEEL FLANGE 75mm  
 ⑤ ALL FLANGED GATE VALVE 80mm  
 ⑥ HDPE STUB END WITH STEEL FLANGE 75mm  
 ⑦ ALL FLANGED GATE VALVE 80mm



- DESCRIPTION**  
**10 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② SADDLE CLAMP 75mmx75mmx50mm  
 ③ HDPE REDUCER 75mmX50mm  
 ④ HDPE STUB END WITH STEEL FLANGE 50mm  
 ⑤ ALL FLANGED GATE VALVE 50mm  
 ⑥ HDPE STUB END WITH STEEL FLANGE 50mm  
 ⑦ ALL FLANGED GATE VALVE 50mm



- DESCRIPTION**  
**10 Nos. REQUIRED**  
 ① BUTFUSSION  
 ② HDPE TEE 200X200X110mm  
 ③ HDPE REDUCER 200X110mm  
 ④ HDPE STUB END WITH STEEL FLANGE 110mm  
 ⑤ ALL FLANGED GATE VALVE 110mm  
 ⑥ HDPE STUB END WITH STEEL FLANGE 110mm  
 ⑦ ALL FLANGED GATE VALVE 110mm

**NOTES:**

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

**LEGEND:**

- MURRAM ROAD
- FENCE / HEDGE
- 1480 ----- CONTOURS
- RIVER/STREAM
- V.J. VIKING JOHNSON
- GV GATE VALVE
- SV-01 SECTIONAL VALVE & No.
- WO-01 WASHOUT VALVE & No.
- SAV-01 AIR VALVE & No.
- WM WATER METER
- PROPOSED MASONRY CHAMBER
- PROPOSED VALVE BOX
- PROPOSED WATER LINE

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

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

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

DRAWING TITLE:  
**FITTINGS DETAILS**

Designed by: A.M.M	Drawn by: A.M.M
Checked by: D.N.W	Approved by: D.N.W
Scale: H- 1:4000, V- 1:400	Date: MAY 2022
<b>DRG No. FIT/01</b>	REV