

NYAKATO

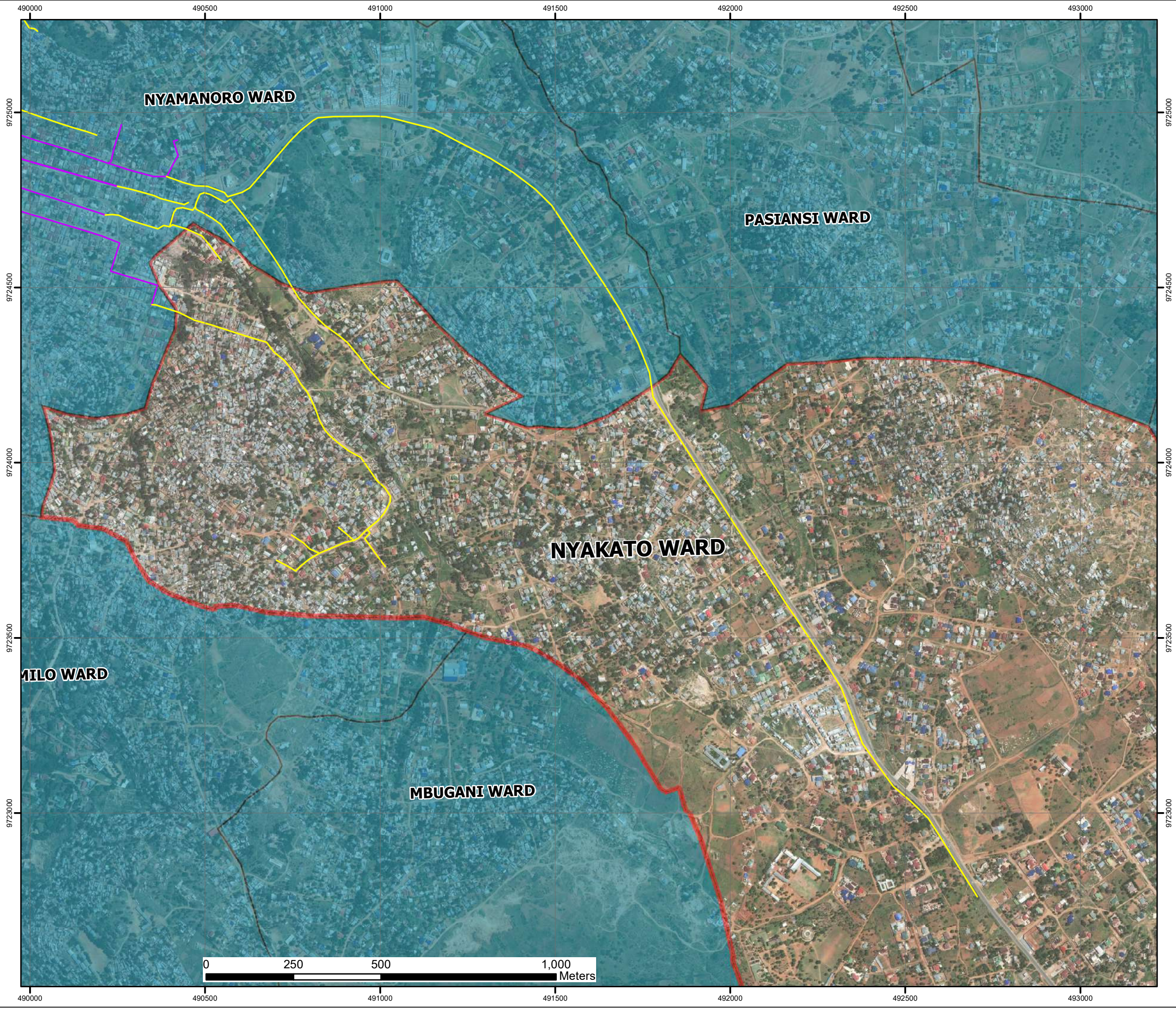
Layout Plan of Existing and Proposed Sewers Nyakato Ward



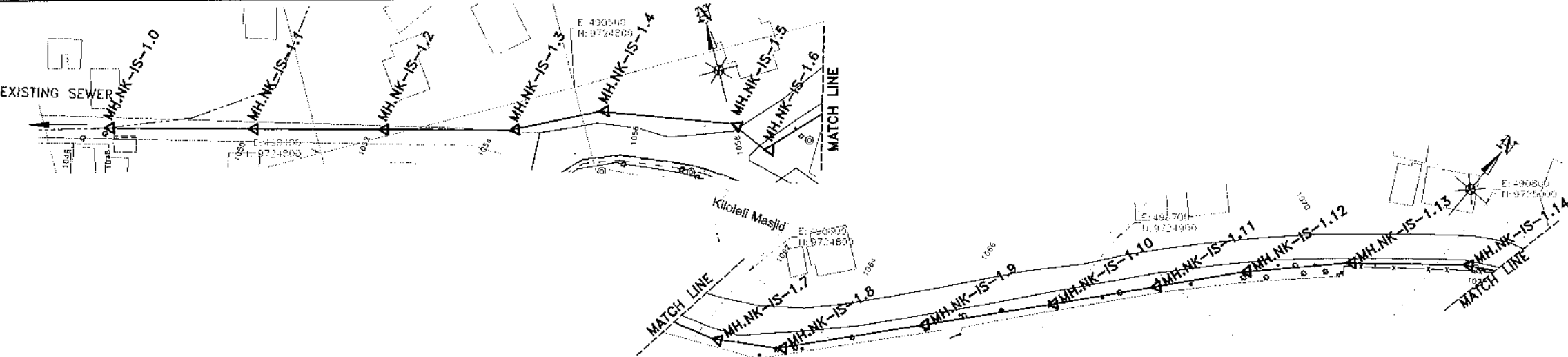
Legend

- Contours 2m Intervals
- Existing Sewers
- Proposed Sewers
[For Design and Construction]
- Administrative (Ward Boundary)

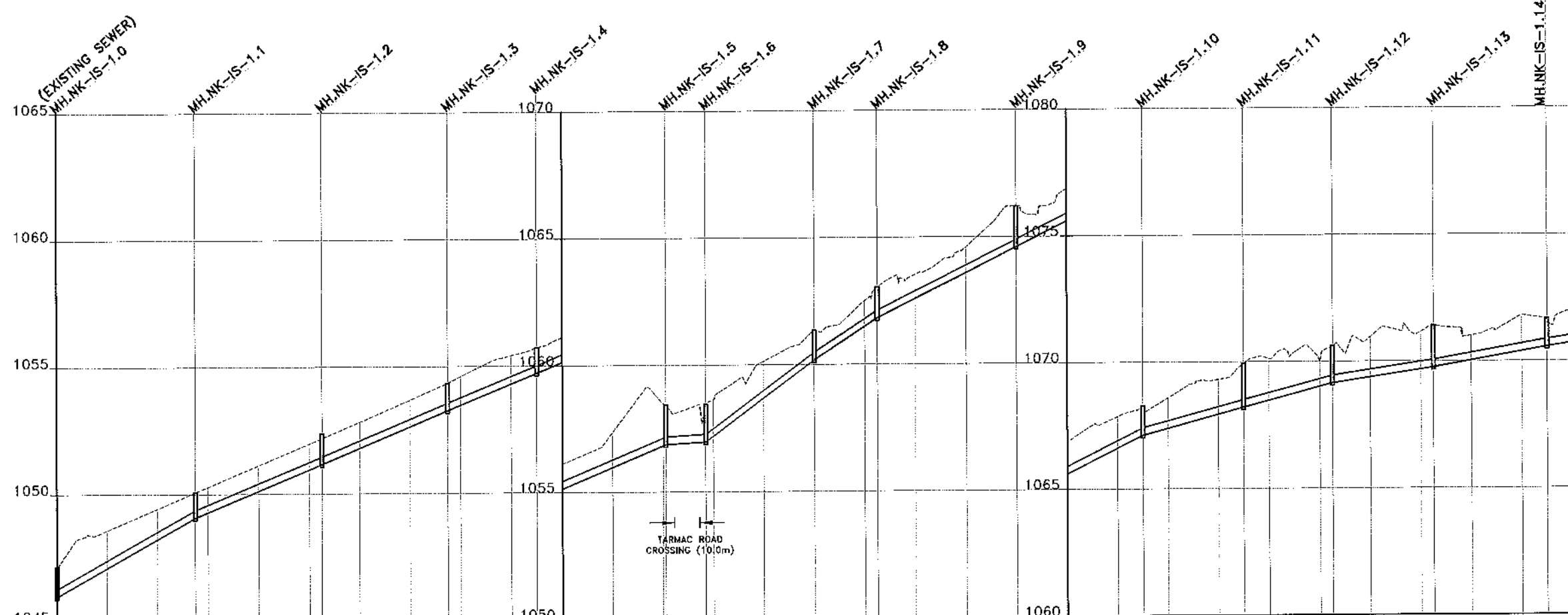
REVISIONS	SIGN	DATE	APPROVED
	BY		
	CHECKED		
Client: EAST AFRICAN COMMUNITY (EAC) LAKE VICTORIA BASIN COMMISSION (LVBC)			
P.O. BOX 1510 - 40100 KISUMU, KENYA TEL: +254 57 202 6344			
PROJECT IMPLEMENTATION CONSULTANTS (PIC): JOINT VENTURE			
CES CONSULTING ENGINEERS SALZGITTER GmbH HAMBURGER STRASSE 227 38114 BRAUNSCHWEIG, GERMANY E-MAIL: info@ces.de TEL: +49 531 - 31704-0			
AKUT PARTNER WATTSTRASSE 10 13355 BERLIN, GERMANY TEL: +49 30 8145460 - 0 FAX: +49 30 8145460 - 19			
MANGAT I.B. PATEL (MIBP) LIMITED P.O BOX 48674,00100-GPO, NAIROBI, KENYA E-MAIL: mibp.nairobi@mibp.co.ke TEL: +254-2-2710500			
PROJECT NAME: LAKE VICTORIA BASIN INTEGRATED WATER RESOURCES MANAGEMENT PROGRAMME (LVB-IWRMP)			
CONTRACT TITLE: MWANZA SEWER CONNECTION UPGRADE			
INFILL SEWERS			
DRAWING TITLE: Layout Plan of Existing and Proposed Sewers Nyakato Ward			
Designed by: V.K		Drawn by: G.O.N	
Checked by: NJN		Approved by: R.S.R	
Scale: A3-: AS SHOWN		Date: MARCH 2024	
DRG No.	M394(j)/MWZ/NK/01		REV



MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-1.0	9724829.872	490322.231
MH.NK-IS-1.1	9724815.881	490375.422
MH.NK-IS-1.2	9724803.161	490423.777
MH.NK-IS-1.3	9724790.451	490472.097
MH.NK-IS-1.4	9724788.684	490507.036
MH.NK-IS-1.5	9724771.365	490555.161
MH.NK-IS-1.6	9724758.749	490564.652
MH.NK-IS-1.7	9724771.435	490605.860
MH.NK-IS-1.8	9724784.487	490627.175
MH.NK-IS-1.9	9724825.943	490663.332
MH.NK-IS-1.10	9724863.625	490696.196
MH.NK-IS-1.11	9724893.971	490722.256
MH.NK-IS-1.12	9724920.524	490745.058
MH.NK-IS-1.13	9724948.744	490773.406
MH.NK-IS-1.14	9724977.070	490808.359



**SEWER NK-IS-1
PLAN**



GROUND LEVELS (m)	TYPE OF PIPE AND SIZE	TYPE OF BED AND SURROUND	INVERT LEVELS (m)	GRADIENT	DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	DISTANCE IN KILOMETERS
1047.15	200mm DIA. S&S DWC HDPE PIPE (SN4)	TYPE 'BO'	1045.57	1:18	1.58	0+000.00
1048.55			1045.97	1:18	1.58	0+020.00
1048.43			1047.10	1:48	1.48	0+040.00
1050.06			1048.22	1:21	1.21	0+055.00
1050.28			1049.06	1:00	1.00	0+060.00
1051.12			1049.27	1:00	1.00	0+080.00
1051.87			1050.11	1:01	1.01	0+100.00
1052.18			1050.95	1:02	1.02	0+140.00
1052.82			1051.16	1:02	1.02	0+154.96
1053.69			1051.79	1:03	1.03	0+160.00
1054.34			1052.82	1:24	1.24	0+180.00
1054.59			1053.69	1:24	1.24	0+189.95
1055.42			1054.34	1:164	1.164	0+200.00
1055.72			1054.59	1:13	1.13	0+220.00
1056.12	1055.42	1:15	1.15	0+240.00		
1057.36	1055.72	1:20	1.20	0+241.09		
1058.49	1056.12	1:27	1.27	0+256.88		
1058.44	1056.62	1:45	1.45	0+260.00		
1058.47	1056.87	1:17	1.17	0+280.00		
1058.65	1057.20	1:01	1.01	0+300.00		
1060.14	1058.69	1:01	1.01	0+320.00		
1061.35	1060.18	1:61	1.61	0+324.99		
1062.50	1061.50	1:22	1.22	0+340.00		
1063.05	1062.58	1:01	1.01	0+360.00		
1063.53	1063.59	1:27	1.27	0+380.00		
1064.60	1064.60	1:21	1.21	0+400.00		
1065.21	1065.60	1:24	1.24	0+420.00		
1066.87	1066.61	1:16	1.16	0+430.00		
1067.85	1067.11	1:21	1.21	0+440.00		
1068.28	1067.39	1:37	1.37	0+460.00		
1068.59	1068.20	1:73	1.73	0+470.00		
1069.30	1068.47	1:66	1.66	0+480.00		
1069.93	1069.02	1:01	1.01	0+500.00		
1070.13	1069.15	1:46	1.46	0+545.00		
1070.02	1069.38	1:59	1.59	0+560.00		
1070.62	1069.69	1:48	1.48	0+580.00		
1070.97	1069.76	1:56	1.56	0+590.00		
1071.16	1070.05	1:42	1.42	0+590.00		
1071.42	1070.38	1:10	1.10	0+600.00		
1071.91	1070.56	1:28	1.28	0+600.00		
1071.80	1070.71					
1071.86						
1071.99						

**SEWER NK-IS-1
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(J)/MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(J)/MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1:220 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS			
NO.	BY	DATE	APPROVED

CLIENT:

**EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN
COMMISSION (LVBC)**
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TEL: +254-2-2710600

PROJECT NAME:
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PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

**INFILL SEWERS
NYAKATO WARD**

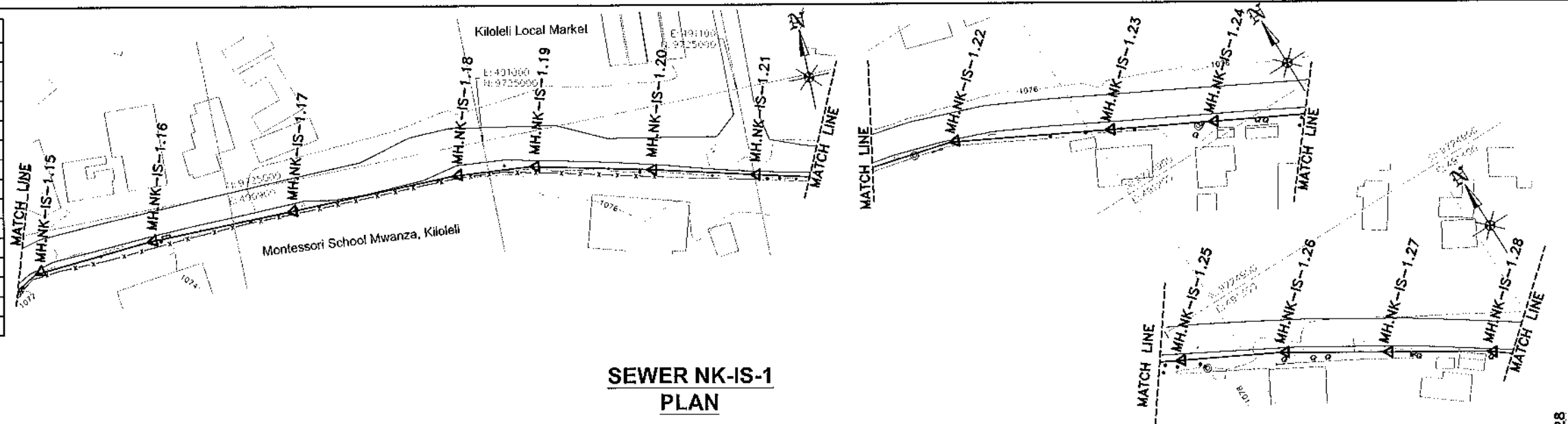
DRAWING TITLE:
SEWER NK-IS-1
PLAN AND LONGITUDINAL SECTION

SHEET 1 OF 7

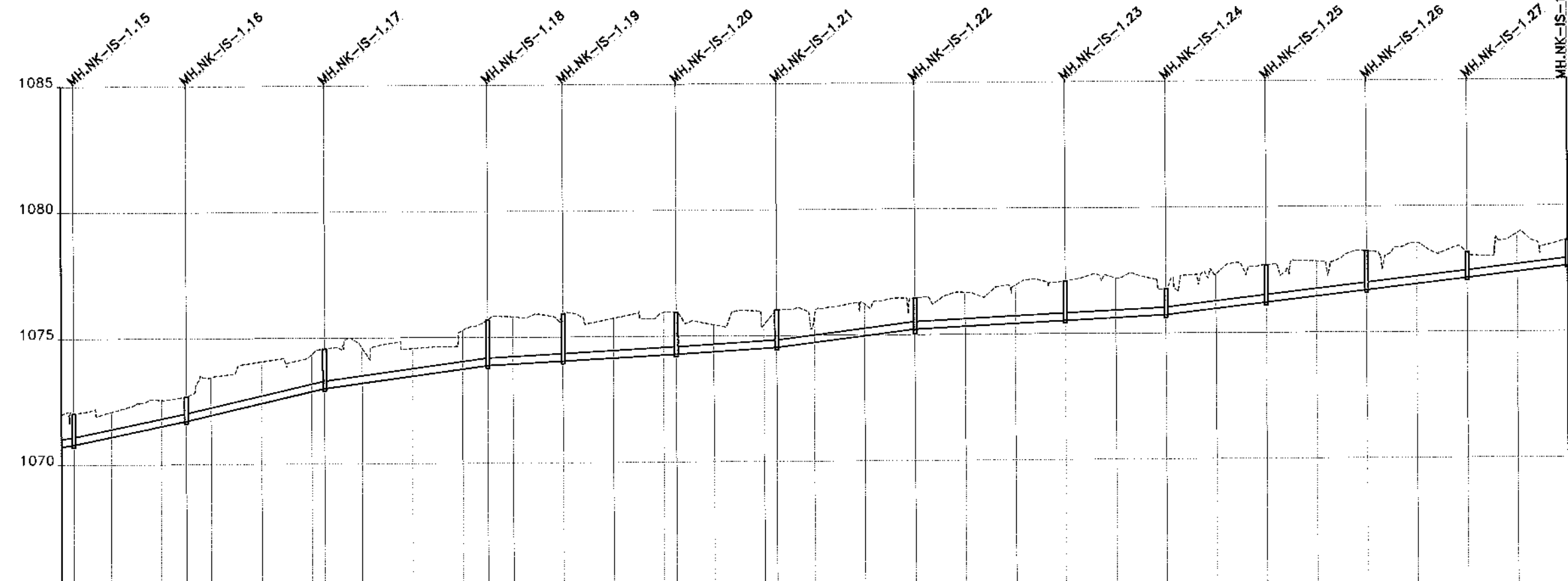
Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2,000 VER: 1:200	Date: MARCH 2024

DRG No. **M394(J)/MWZ/NK/02**

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-1.15	9724984.418	490821.450
MH.NK-IS-1.16	9724987.828	490866.320
MH.NK-IS-1.17	9724988.335	490921.318
MH.NK-IS-1.18	9724989.147	490986.312
MH.NK-IS-1.19	9724986.796	491016.217
MH.NK-IS-1.20	9724976.664	491050.055
MH.NK-IS-1.21	9724966.814	491098.834
MH.NK-IS-1.22	9724953.436	491152.182
MH.NK-IS-1.23	9724925.737	491205.406
MH.NK-IS-1.24	9724907.271	491240.888
MH.NK-IS-1.25	9724888.806	491276.371
MH.NK-IS-1.26	9724870.340	491311.852
MH.NK-IS-1.27	9724849.346	491345.900
MH.NK-IS-1.28	9724828.352	491379.947



**SEWER NK-IS-1
PLAN**



DATUM (m)	1065																																				
GROUND LEVELS (m)	1071.99	1072.03	1072.09	1072.56	1072.69	1073.45	1074.06	1074.36	1074.57	1074.60	1074.57	1075.28	1075.69	1075.91	1075.91	1075.73	1075.95	1075.94	1075.44	1075.45	1076.01	1075.69	1076.23	1076.45	1076.67	1076.94	1077.10	1077.19	1076.78	1077.34	1077.69	1077.82	1078.21	1078.54	1078.15	1078.91	1078.63
TYPE OF PIPE AND SIZE	200mm DIA. S&S DWC HDPE PIPE (SN4)																																				
TYPE OF BED AND SURROUND	TYPE 'B0'																																				
INVERT LEVELS (m)	1070.71	1070.79	1071.10	1071.51	1071.72	1071.95	1072.41	1072.88	1072.99	1073.20	1073.47	1073.74	1073.88	1073.93	1074.04	1074.15	1074.25	1074.28	1074.37	1074.50	1074.53	1074.72	1074.97	1075.22	1075.32	1075.42	1075.53	1075.63	1075.73	1075.96	1076.20	1076.44	1076.67	1076.91	1077.14	1077.38	1077.61
GRADIENT	1:48, 1:43, 1:73, 1:188, 1:185, 1:162, 1:80, 1:196, 1:85																																				
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	0.28	0.24	0.99	1.04	0.97	1.50	1.65	1.48	1.58	1.40	1.10	1.54	1.81	1.88	1.87	1.58	1.68	1.68	1.07	0.95	1.48	0.98	1.26	1.23	1.55	1.52	1.56	1.03	1.37	1.49	1.38	1.54	1.63	1.09	1.53	1.01	
DISTANCE IN KILOMETERS	0+600.00	0+605.00	0+650.00	0+640.00	0+650.00	0+660.00	0+680.00	0+700.00	0+705.00	0+720.00	0+740.00	0+760.00	0+770.00	0+780.00	0+800.00	0+820.00	0+840.00	0+845.00	0+860.00	0+880.00	0+885.00	0+900.00	0+920.00	0+940.00	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+120.00	1+140.00	1+160.00	1+180.00	1+200.00

**SEWER NK-IS-1
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(J)MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(J)MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1220 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS	BY	DATE	APPROVED

CLIENT:

**EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN COMMISSION (LVBC)
P.O. BOX 1510 - 40100
KISUMU, KENYA
TEL: +254 57 202 6344**

**PROJECT IMPLEMENTATION CONSULTANTS (PIC):
JOINT VENTURE**

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HAMBURGER STRASSE 227
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**MIBP CONSULTING ENGINEERS
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P.O. BOX 48674, 00100-GPO,
NAIROBI, KENYA
E-MAIL: mibp.nairobi@mibp.co.ke
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**PROJECT NAME:
LAKE VICTORIA BASIN INTEGRATED
WATER RESOURCES MANAGEMENT
PROGRAMME (LVB-IWRMP)**

**CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE**

**INFILL SEWERS
NYAKATO WARD**

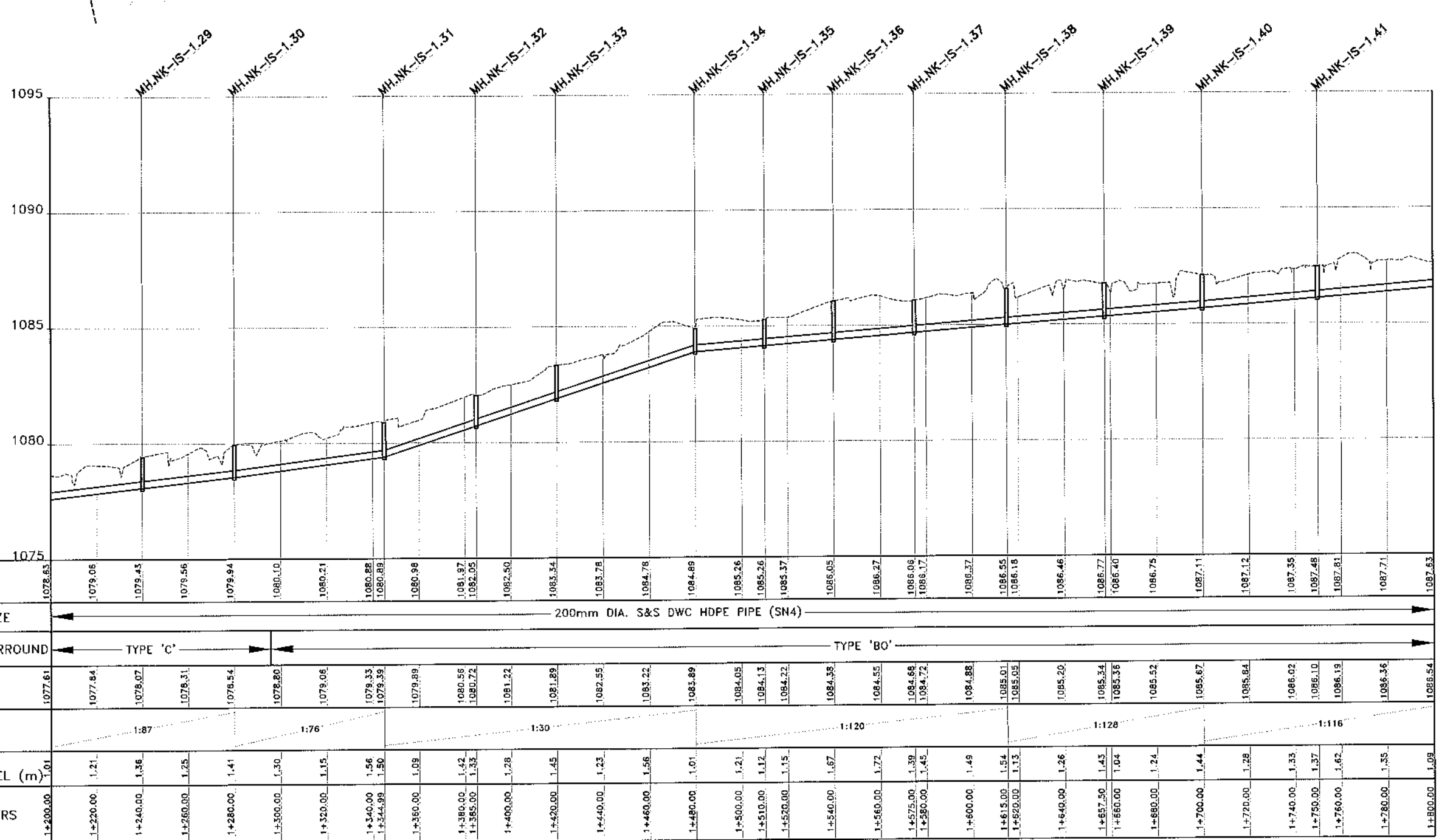
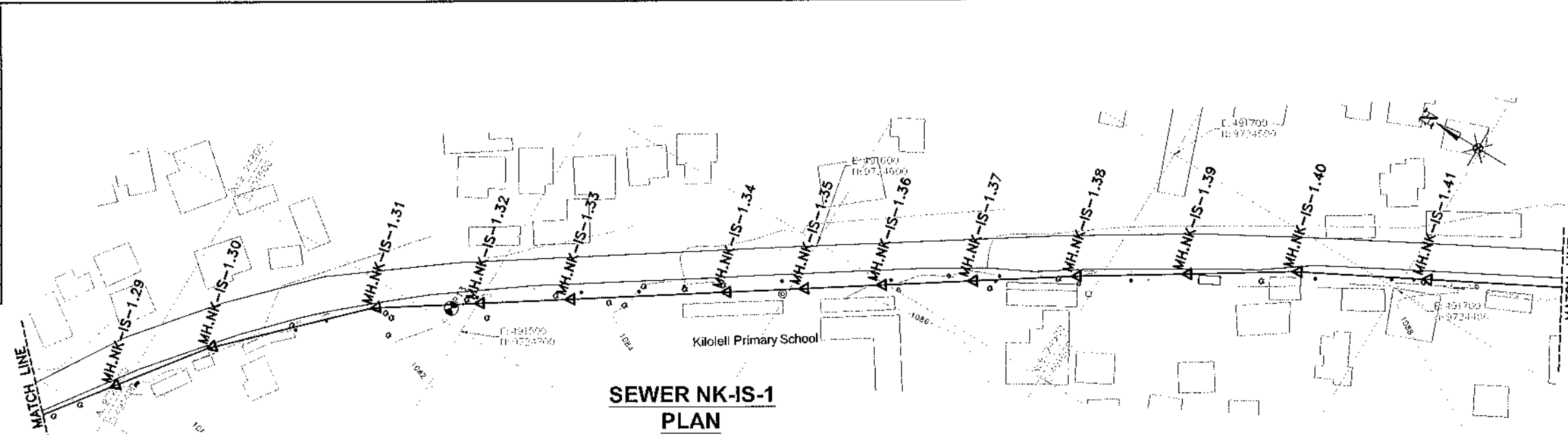
**DRAWING TITLE:
SEWER NK-IS-1
PLAN AND LONGITUDINAL SECTION**

SHEET 2 OF 7

Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2,000 VER: 1:200	Date: MARCH 2024

DRG No. M394(J)MWZ/NK/03

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-1.29	9724804.258	491411.875
MH.NK-IS-1.30	9724780.164	491443.803
MH.NK-IS-1.31	9724734.109	491489.667
MH.NK-IS-1.32	9724700.837	491511.883
MH.NK-IS-1.33	9724671.729	491531.318
MH.NK-IS-1.34	9724621.833	491564.633
MH.NK-IS-1.35	9724596.880	491581.294
MH.NK-IS-1.36	9724571.930	491597.952
MH.NK-IS-1.37	9724542.822	491617.387
MH.NK-IS-1.38	9724509.556	491639.599
MH.NK-IS-1.39	9724473.644	491662.327
MH.NK-IS-1.40	9724457.733	491685.055
MH.NK-IS-1.41	9724393.523	491706.414



**SEWER NK-IS-1
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(J)MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(J)MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1:220 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN
COMMISSION (LVBC)
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CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

**INFILL SEWERS
NYAKATO WARD**

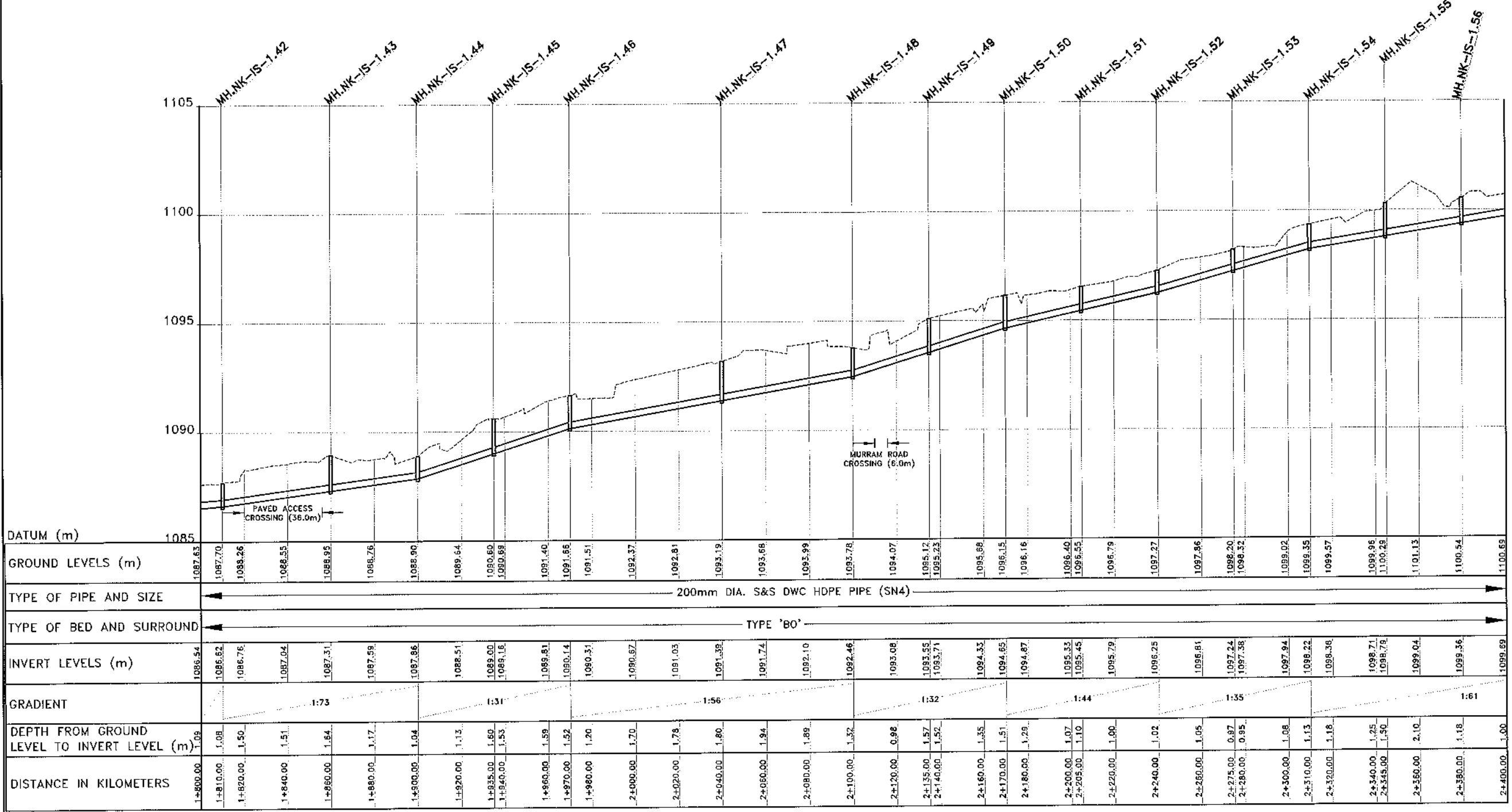
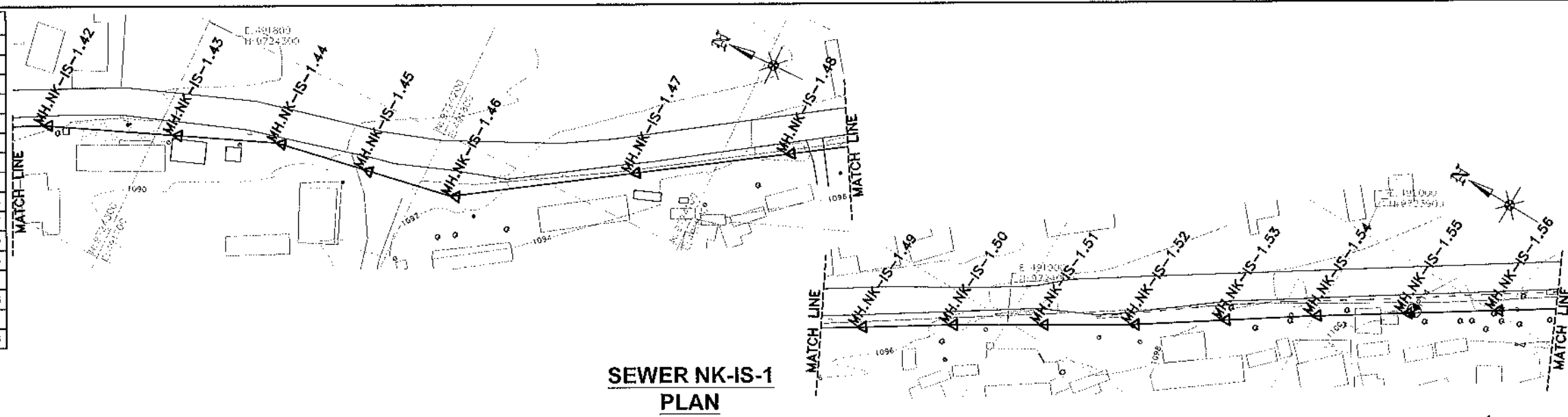
DRAWING TITLE:
SEWER NK-IS-1
PLAN AND LONGITUDINAL SECTION

SHEET 3 OF 7

Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2000 VER: 1:200	Date: MARCH 2024

DRG No. **M394(J)MWZ/NK/04**

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-1.42	9724340.476	491736.443
MH.NK-IS-1.43	9724293.893	491754.617
MH.NK-IS-1.44	9724256.629	491769.158
MH.NK-IS-1.45	9724222.016	491774.349
MH.NK-IS-1.46	9724187.403	491779.543
MH.NK-IS-1.47	9724128.400	491817.208
MH.NK-IS-1.48	9724077.827	491849.492
MH.NK-IS-1.49	9724048.325	491868.325
MH.NK-IS-1.50	9724018.824	491887.157
MH.NK-IS-1.51	9723968.887	491905.290
MH.NK-IS-1.52	9723958.950	491923.423
MH.NK-IS-1.53	9723929.877	491942.909
MH.NK-IS-1.54	9723900.803	491962.396
MH.NK-IS-1.55	9723871.387	491981.361
MH.NK-IS-1.56	9723841.970	492000.326



**SEWER NK-IS-1
LONGITUDINAL SECTION**

NOTES:

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LEGEND - PLAN

EXISTING FEATURES:

- CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

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JOINT VENTURE

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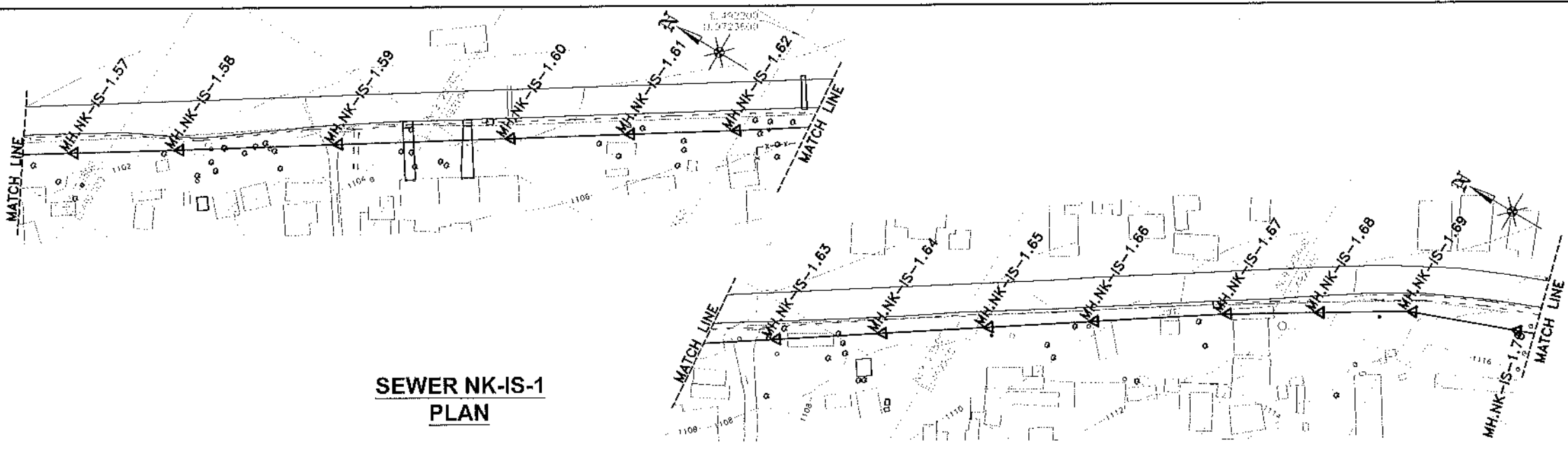
**INFILL SEWERS
NYAKATO WARD**

DRAWING TITLE:
SEWER NK-IS-1
PLAN AND LONGITUDINAL SECTION
SHEET 4 OF 7

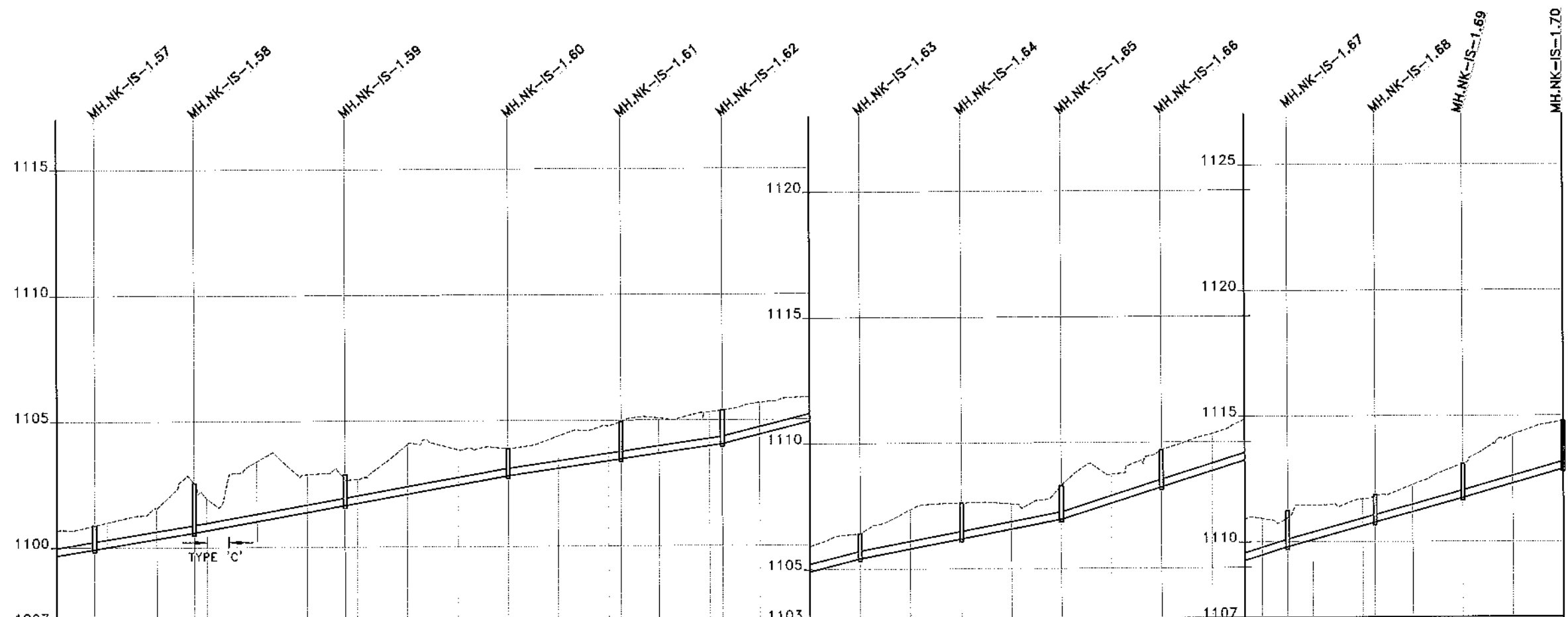
Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2,000 VER: 1:200	Date: MARCH 2024

DRG No. M394(j)MWZ/NK/05

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-1.57	9723612.553	492019.290
MH.NK-IS-1.58	9723778.934	492040.964
MH.NK-IS-1.59	9723728.707	492073.785
MH.NK-IS-1.60	9723674.294	492109.342
MH.NK-IS-1.61	9723636.624	492133.958
MH.NK-IS-1.62	9723603.139	492155.839
MH.NK-IS-1.63	9723557.432	492186.430
MH.NK-IS-1.64	9723524.190	492208.678
MH.NK-IS-1.65	9723490.948	492230.926
MH.NK-IS-1.66	9723457.706	492253.174
MH.NK-IS-1.67	9723416.153	492280.983
MH.NK-IS-1.68	9723386.310	492299.270
MH.NK-IS-1.69	9723356.467	492317.556
MH.NK-IS-1.70	9723319.034	492331.654



**SEWER NK-IS-1
PLAN**



DATUM (m)	1097																																					
GROUND LEVELS (m)	1100.69	1100.86	1101.00	1101.55	1102.55	1101.93	1103.41	1102.89	1102.69	1102.69	1104.07	1103.85	1103.88	1104.38	1104.78	1104.95	1105.98	1105.32	1105.38	1105.69	1105.92	1106.32	1107.35	1107.62	1107.58	1108.28	1108.73	1109.69	1110.34	1110.93	1110.95	1111.45	1111.70	1111.80	1112.26	1113.10	1114.24	1114.79
TYPE OF PIPE AND SIZE	200mm DIA. S&S DWC HDPE PIPE (SN4)																																					
TYPE OF BED AND SURROUND	TYPE 'B0'																																					
INVERT LEVELS (m)	1099.69	1099.93	1100.01	1100.34	1100.58	1100.67	1101.03	1101.38	1101.65	1101.74	1102.09	1102.45	1102.80	1103.10	1103.39	1103.46	1103.68	1103.87	1104.04	1104.42	1104.92	1105.42	1105.80	1106.18	1106.57	1106.95	1107.59	1108.22	1108.86	1109.49	1109.81	1110.08	1110.63	1110.77	1111.18	1111.73	1112.31	1112.88
GRADIENT	1:56, 1:69, 1:40, 1:52, 1:32, 1:36																																					
DEPTH FROM GROUND LEVEL TO INVERT LEVEL (m)	1.00	0.95	0.98	1.21	1.97	1.26	2.39	1.51	1.04	0.95	1.98	1.40	1.08	1.28	1.40	1.48	1.34	1.55	1.34	1.27	1.00	1.00	1.55	1.43	1.01	1.34	1.15	1.47	1.48	1.44	1.14	1.37	1.07	1.03	1.08	1.36	1.93	1.91
DISTANCE IN KILOMETERS	2+400.00	2+415.00	2+420.00	2+440.00	2+455.00	2+460.00	2+480.00	2+500.00	2+515.00	2+520.00	2+540.00	2+560.00	2+580.00	2+600.00	2+620.00	2+625.00	2+640.00	2+660.00	2+665.00	2+680.00	2+700.00	2+720.00	2+740.00	2+760.00	2+780.00	2+800.00	2+820.00	2+840.00	2+860.00	2+880.00	2+890.00	2+900.00	2+920.00	2+925.00	2+940.00	2+960.00	2+980.00	3+000.00

**SEWER NK-IS-1
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(j)/MWZ/NK01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(j)/MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS	SIGN	DATE	APPROVED

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN COMMISSION (LVBC)
P.O. BOX 1510 - 40100
KISUMU, KENYA
TEL: +254 57 202 6344

PROJECT IMPLEMENTATION CONSULTANTS (PIC):

JOINT VENTURE

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TEL: +254-2-2710500

PROJECT NAME:
LAKE VICTORIA BASIN INTEGRATED WATER RESOURCES MANAGEMENT PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

INFILL SEWERS NYAKATO WARD

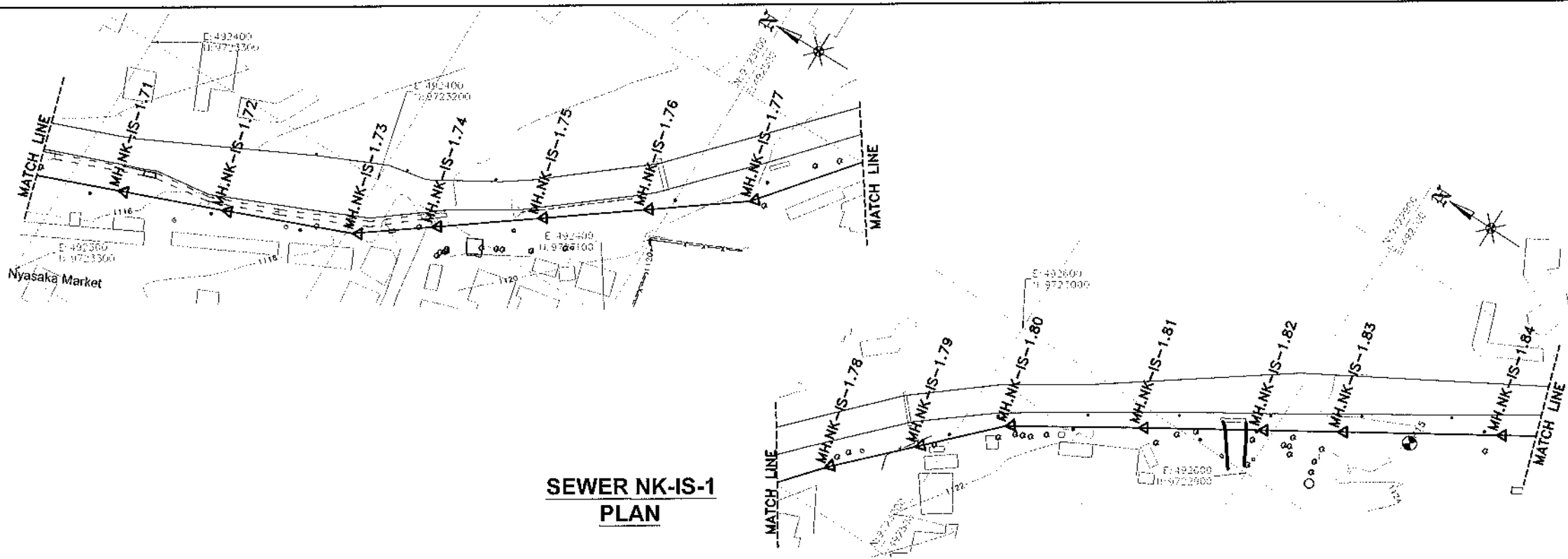
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SEWER NK-IS-1
PLAN AND LONGITUDINAL SECTION

SHEET 5 OF 7

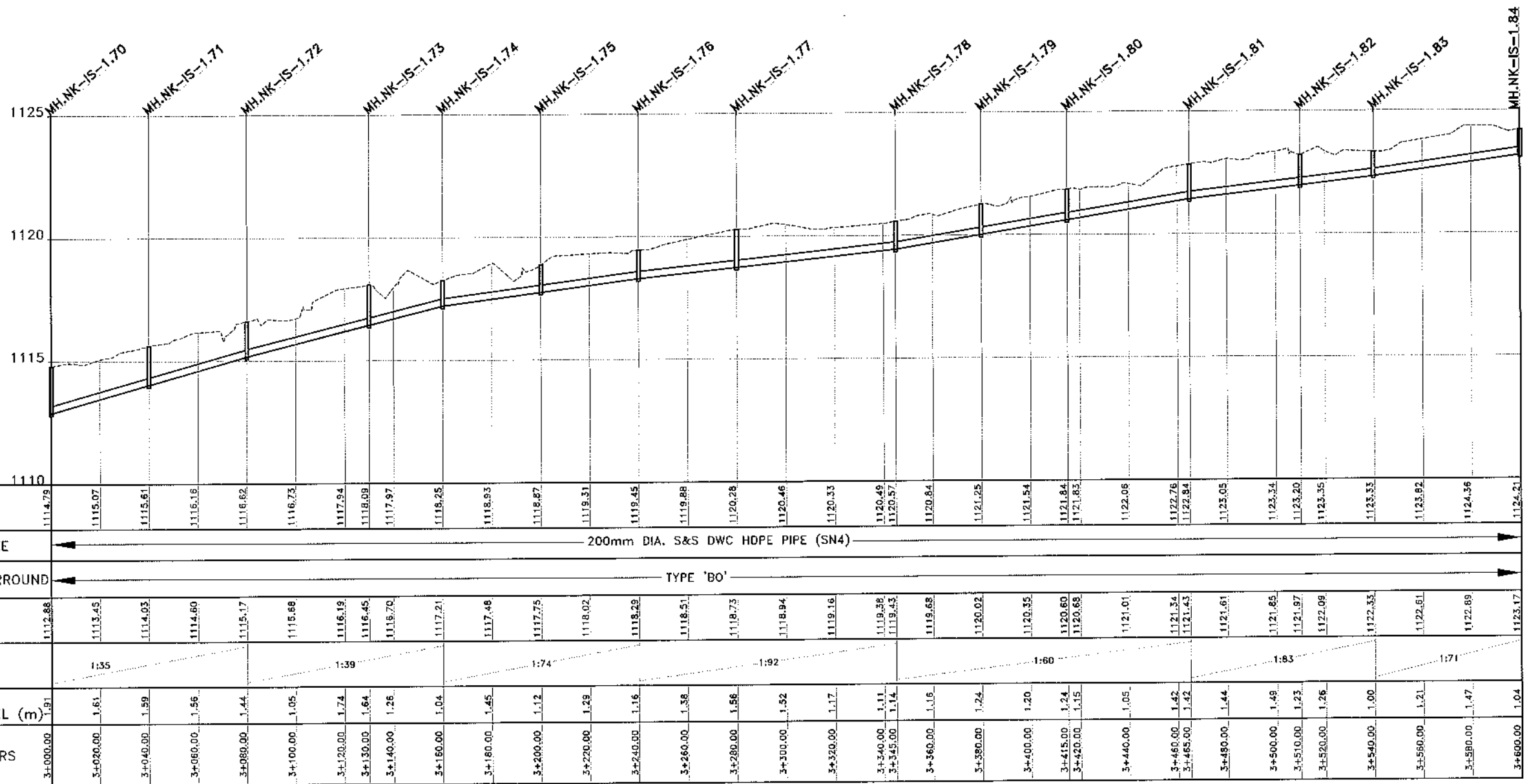
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Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2,000 VER: 1:200	Date: MARCH 2024

DRG No. M394(j)/MWZ/NK06

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-1.70	9723319.034	492331.654
MH.NK-IS-1.71	9723281.601	492345.753
MH.NK-IS-1.72	9723244.168	492359.852
MH.NK-IS-1.73	9723197.526	492377.868
MH.NK-IS-1.74	9723173.187	492395.407
MH.NK-IS-1.75	9723140.736	492418.792
MH.NK-IS-1.76	9723108.284	492442.177
MH.NK-IS-1.77	9723075.833	492465.562
MH.NK-IS-1.78	9723034.069	492515.371
MH.NK-IS-1.79	9723009.668	492540.463
MH.NK-IS-1.80	9722985.267	492565.553
MH.NK-IS-1.81	9722943.012	492592.284
MH.NK-IS-1.82	9722904.764	492615.994
MH.NK-IS-1.83	9722879.266	492631.800
MH.NK-IS-1.84	9722828.268	492663.410



**SEWER NK-IS-1
PLAN**



**SEWER NK-IS-1
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(j)/MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(j)/MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1220 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS			
NO.	BY	DATE	APPROVED

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN COMMISSION (LVB/C)
P.O. BOX 1510 - 40100
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TEL: +254 57 202 6344

PROJECT IMPLEMENTATION CONSULTANTS (PIC):

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TEL: +254-2-2710500

PROJECT NAME:
LAKE VICTORIA BASIN INTEGRATED WATER RESOURCES MANAGEMENT PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

INFILL SEWERS NYAKATO WARD

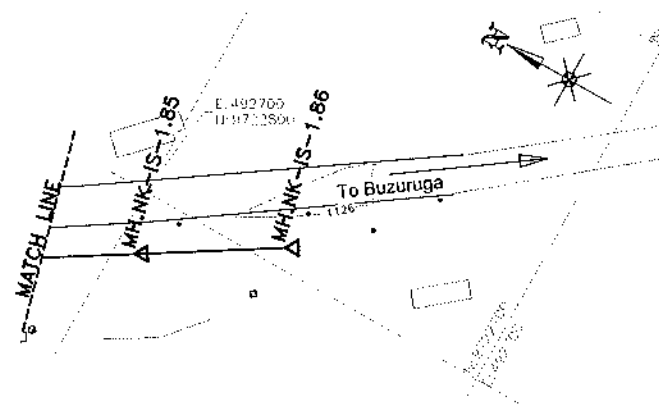
DRAWING TITLE:
SEWER NK-IS-1
PLAN AND LONGITUDINAL SECTION

SHEET 6 OF 7

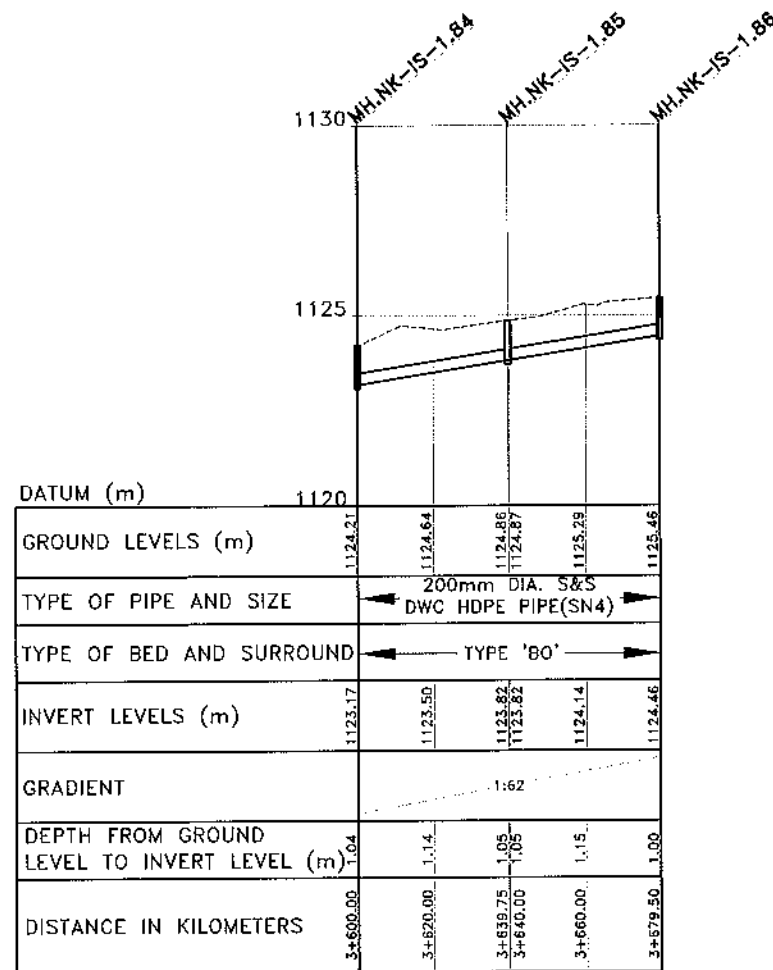
Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:200	Date: MARCH 2024
VER: 1:200	

DRG No. **M394(j)/MWZ/NK/07**

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-1.84	9722828.268	492663.410
MH.NK-IS-1.85	9722794.480	492684.352
MH.NK-IS-1.86	9722760.692	492705.295



SEWER NK-IS-1 PLAN



SEWER NK-IS-1 LONGITUDINAL SECTION

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(j)/MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(j)/MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1220 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS	SIGN	DATE	APPROVED
BY			
CHECKED			

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN
COMMISSION (LVBC)
P.O. BOX 1510 - 40100
KISUMU, KENYA
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CES CONSULTING ENGINEERS
SALZGITTER GmbH
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38114 BRAUNSCHWEIG, GERMANY
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TEL: +254-2-2710500

PROJECT NAME:

LAKE VICTORIA BASIN INTEGRATED
WATER RESOURCES MANAGEMENT
PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:

MWANZA SEWER CONNECTION UPGRADE

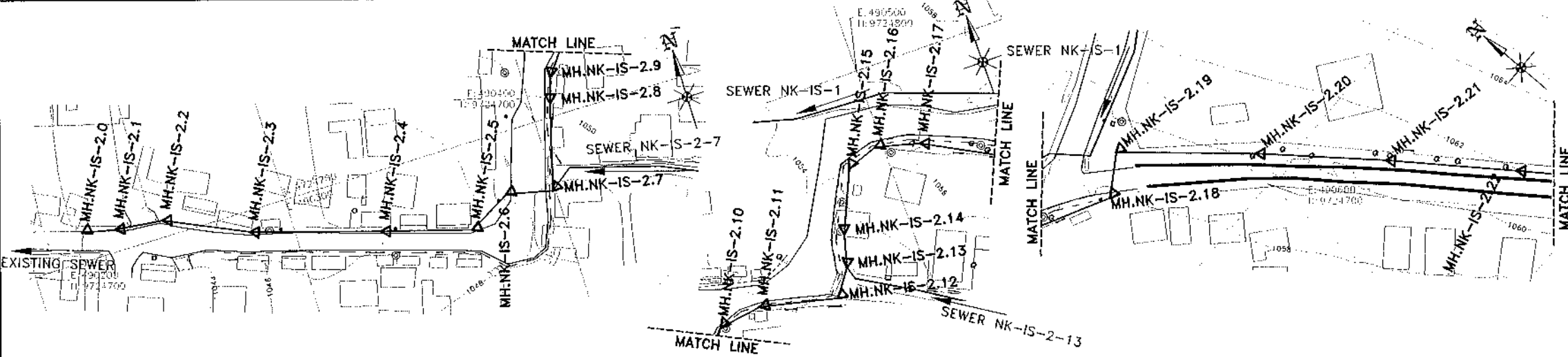
INFILL SEWERS
NYAKATO WARD

DRAWING TITLE:

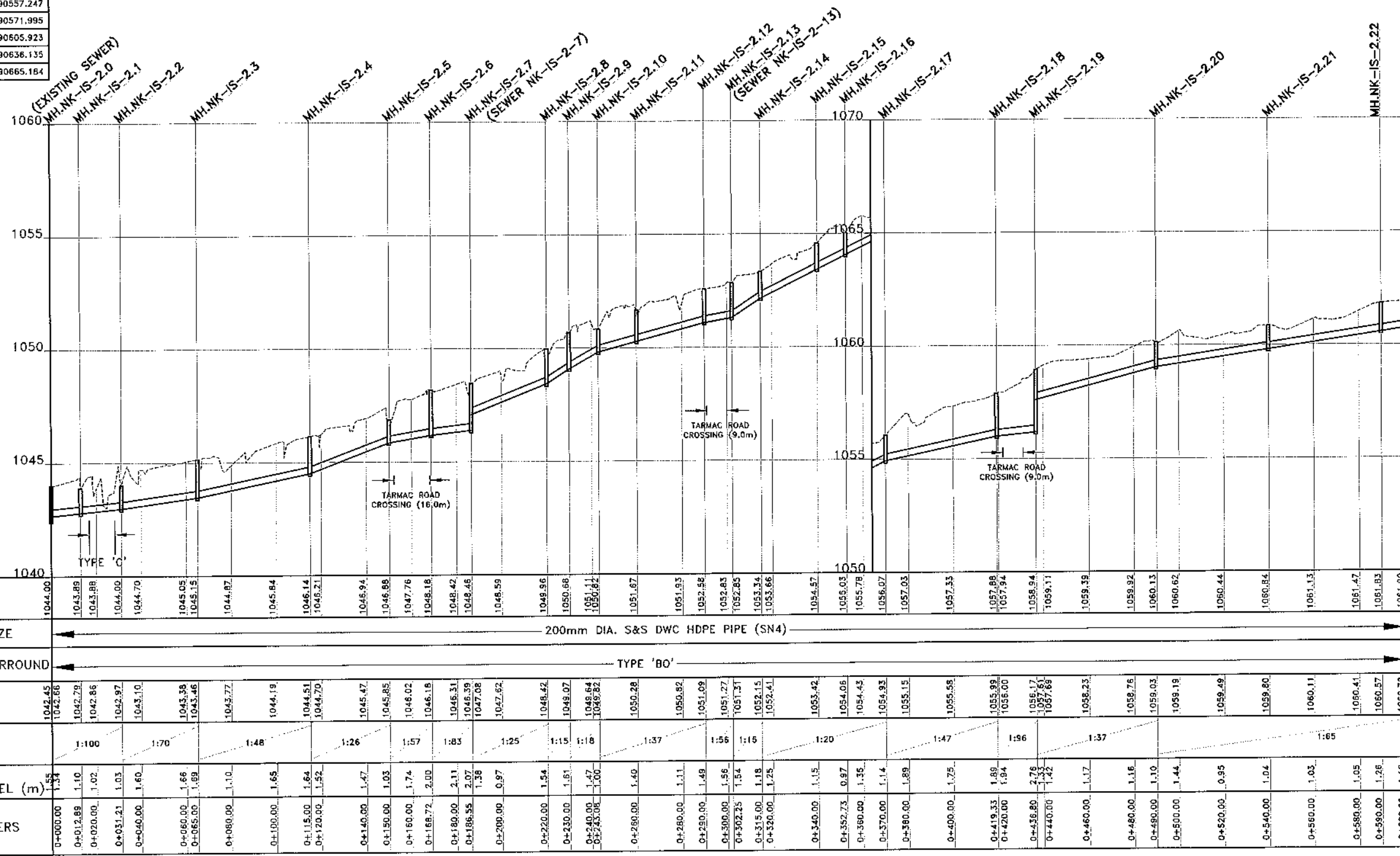
SEWER NK-IS-1
PLAN AND LONGITUDINAL SECTION
SHEET 7 OF 7

Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2,000 VER: 1:200	Date: MARCH 2024
DRG No. M394(j)/MWZ/NK/08	REV

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-2.0	9724706.203	490252.895
MH.NK-IS-2.1	9724710.836	490222.070
MH.NK-IS-2.2	9724708.199	490234.685
MH.NK-IS-2.3	9724692.147	490283.627
MH.NK-IS-2.4	9724677.614	490331.468
MH.NK-IS-2.5	9724667.838	490365.075
MH.NK-IS-2.6	9724677.008	490381.398
MH.NK-IS-2.7	9724672.996	490398.767
MH.NK-IS-2.8	9724705.222	490407.733
MH.NK-IS-2.9	9724714.755	490410.754
MH.NK-IS-2.10	9724725.218	490418.611
MH.NK-IS-2.11	9724727.584	490435.360
MH.NK-IS-2.12	9724720.755	490464.573
MH.NK-IS-2.13	9724730.734	490471.685
MH.NK-IS-2.14	9724743.066	490474.907
MH.NK-IS-2.15	9724765.914	490485.054
MH.NK-IS-2.16	9724770.254	490497.020
MH.NK-IS-2.17	9724765.664	490513.724
MH.NK-IS-2.18	9724742.643	490557.247
MH.NK-IS-2.19	9724751.998	490571.995
MH.NK-IS-2.20	9724711.016	490605.923
MH.NK-IS-2.21	9724671.175	490636.135
MH.NK-IS-2.22	9724630.480	490665.184



**SEWER NK-IS-2
PLAN**



**SEWER NK-IS-2
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(J)/MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(J)/MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1:20 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS	SIGN	DATE	APPROVED
BY [CHECKED]			

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN COMMISSION (LVCB)
P.O. BOX 1510 - 40100
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TEL: +254 57 202 6344

PROJECT IMPLEMENTATION CONSULTANTS (PIC):

JOINT VENTURE

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PROJECT NAME:
LAKE VICTORIA BASIN INTEGRATED
WATER RESOURCES MANAGEMENT
PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

**INFILL SEWERS
NYAKATO WARD**

DRAWING TITLE:
SEWER NK-IS-2
PLAN AND LONGITUDINAL SECTION

SHEET 1 OF 2

Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2000 VER: 1:200	Date: MARCH 2024

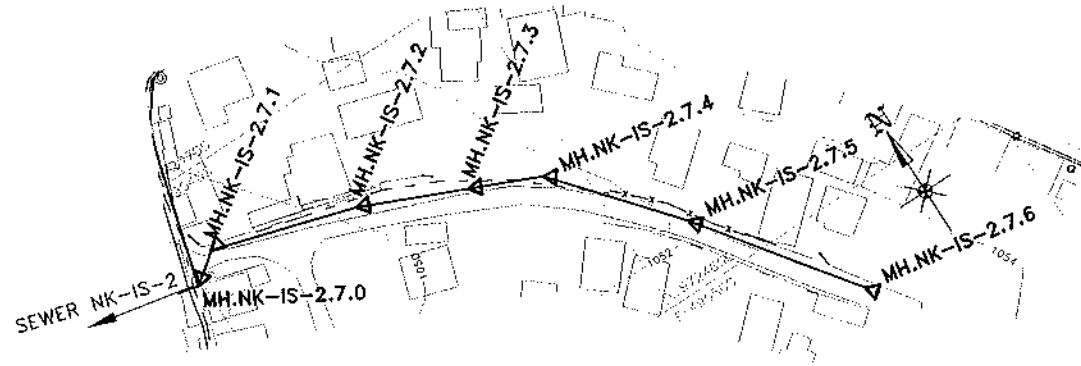
DRG No. M394(J)/MWZ/NK/09

SEWER NK-IS-2-7

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-2.7.0	9724672.966	490398.767
MH.NK-IS-2.7.1	9724679.046	490406.729
MH.NK-IS-2.7.2	9724667.525	490445.034
MH.NK-IS-2.7.3	9724655.461	490472.501
MH.NK-IS-2.7.4	9724647.418	490490.813
MH.NK-IS-2.7.5	9724616.764	490516.475
MH.NK-IS-2.7.6	9724576.442	490546.078

SEWER NK-IS-2-13

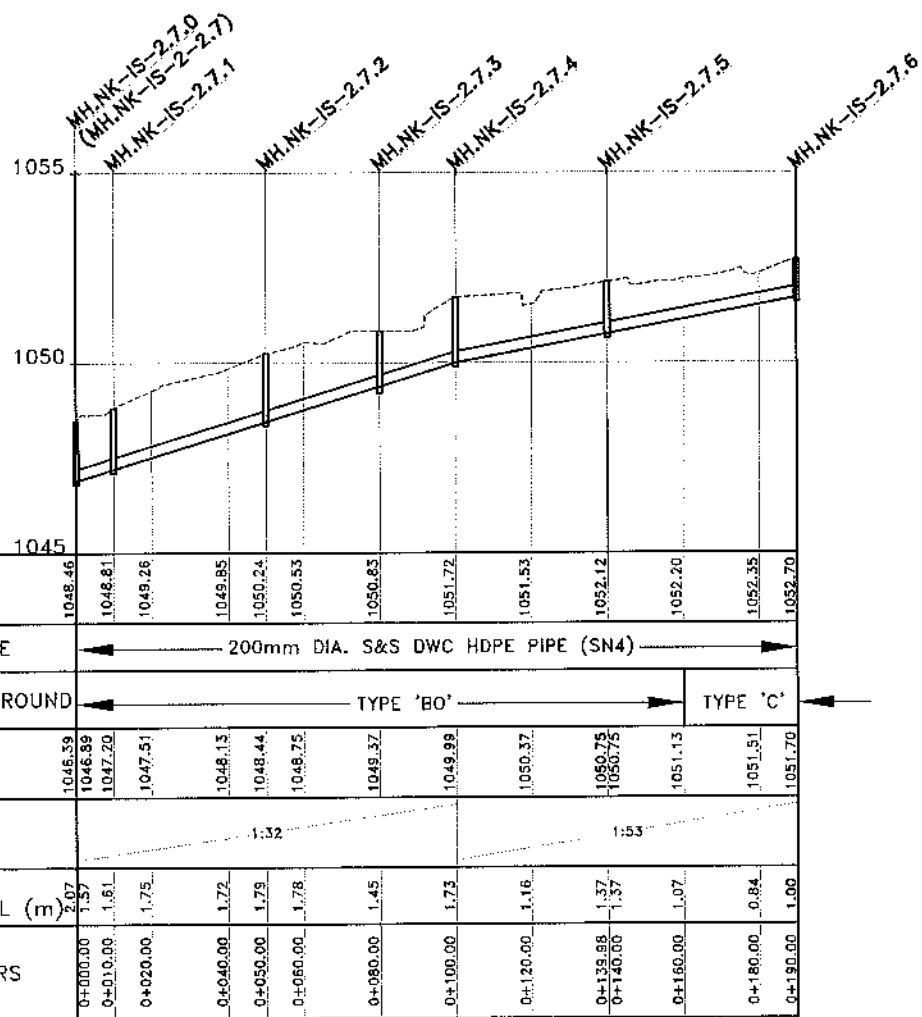
MANHOLE COORDINATES		
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MH.NK-IS-2.13.1	9724723.158	490474.388
MH.NK-IS-2.13.2	9724713.542	490494.126
MH.NK-IS-2.13.3	9724698.240	490519.930
MH.NK-IS-2.13.4	9724681.011	490544.489
MH.NK-IS-2.13.5	9724656.951	490562.410
MH.NK-IS-2.13.6	9724631.340	490581.487



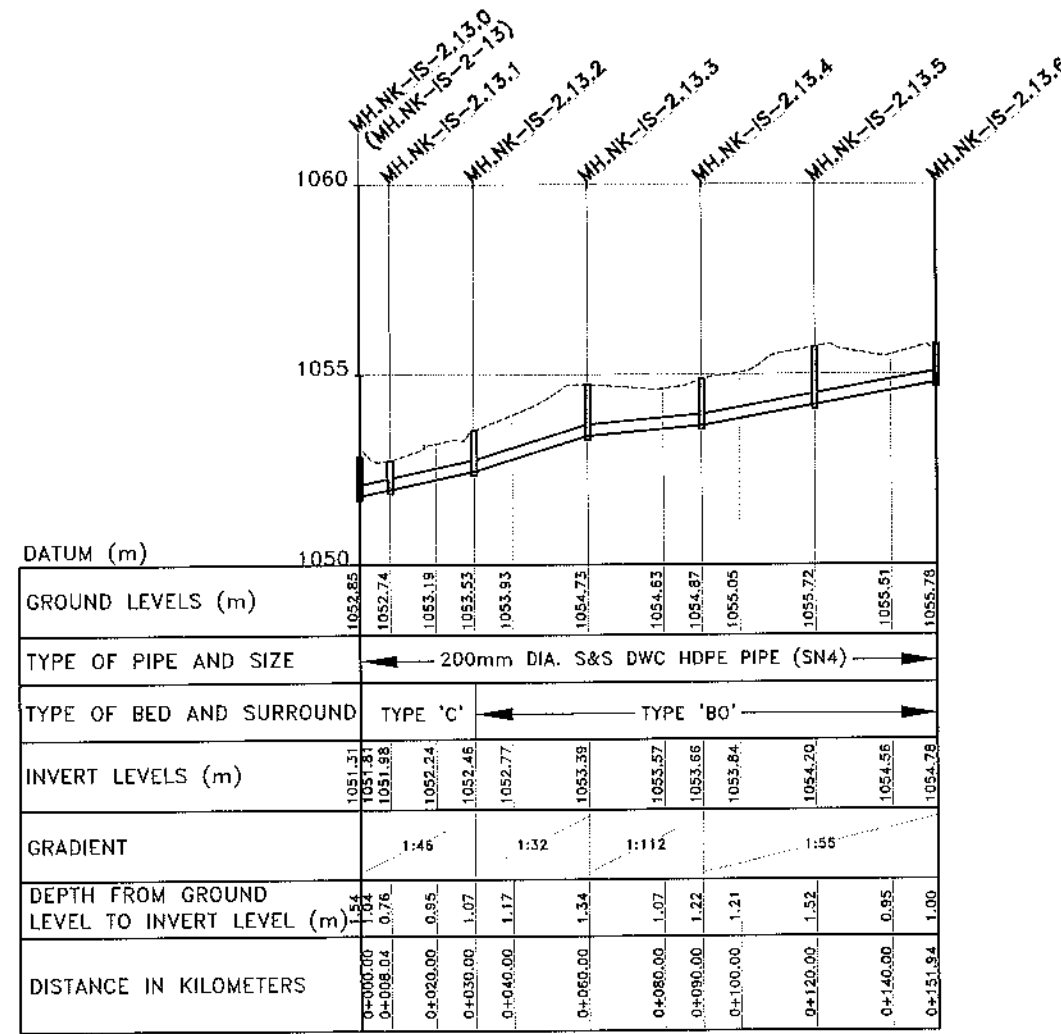
**SEWER NK-IS-2-7
PLAN**



**SEWER NK-IS-2-13
PLAN**



**SEWER NK-IS-2-7
LONGITUDINAL SECTION**



**SEWER NK-IS-2-13
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(J)/MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(J)/MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1220 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 8 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS				SIGN	DATE	APPROVED
NO	DESCRIPTION	BY	CHECKED			

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN
COMMISSION (LVB/C)
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TEL: +254 57 202 6344

PROJECT IMPLEMENTATION CONSULTANTS (PIC):

JOINT VENTURE

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PROJECT NAME:

LAKE VICTORIA BASIN INTEGRATED
WATER RESOURCES MANAGEMENT
PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

**INFILL SEWERS
NYAKATO WARD**

DRAWING TITLE:

SEWER NK-IS-2-7&13
PLAN AND LONGITUDINAL SECTION

SHEET 1 OF 1

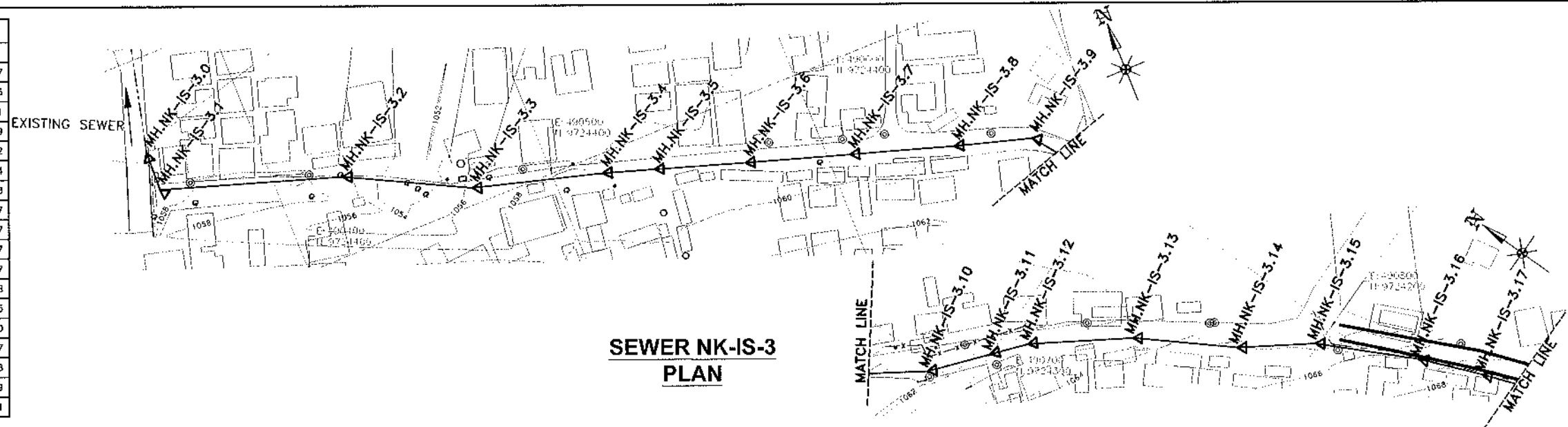
Designed by: V.K. Drawn by: V.K.

Checked by: N.J.N. Approved by: R.S.R.

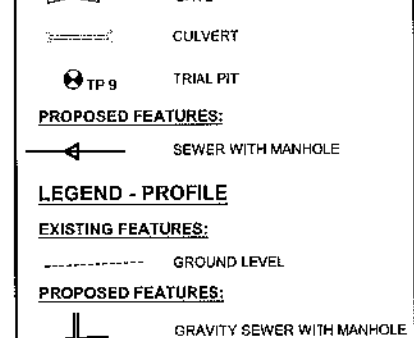
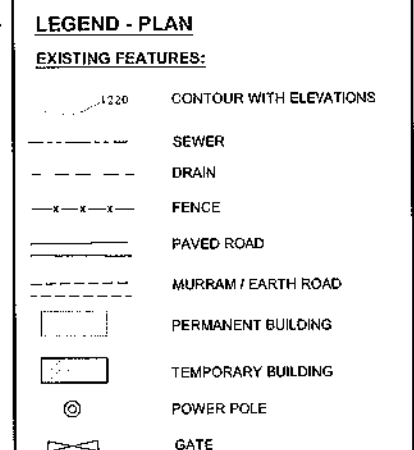
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VER: 1:200

DRG No. M394(J)/MWZ/NK/11

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-3.0	9724465.233	490359.257
MH.NK-IS-3.1	9724450.242	490358.735
MH.NK-IS-3.2	9724428.803	490425.371
MH.NK-IS-3.3	9724406.198	490469.969
MH.NK-IS-3.4	9724392.879	490518.162
MH.NK-IS-3.5	9724386.730	490537.194
MH.NK-IS-3.6	9724375.967	490570.498
MH.NK-IS-3.7	9724363.974	490608.657
MH.NK-IS-3.8	9724351.980	490646.817
MH.NK-IS-3.9	9724343.581	490675.617
MH.NK-IS-3.10	9724315.823	490696.937
MH.NK-IS-3.11	9724299.934	490716.238
MH.NK-IS-3.12	9724290.371	490727.795
MH.NK-IS-3.13	9724259.167	490752.820
MH.NK-IS-3.14	9724224.611	490772.967
MH.NK-IS-3.15	9724201.097	490791.598
MH.NK-IS-3.16	9724165.417	490809.679
MH.NK-IS-3.17	9724142.200	490818.951



- NOTES:**
- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(j)/MWZ/NK/01
 - CONTOUR LEVELS ARE AT 2 METER INTERVALS
 - GRID VALUES ARE AT 100 METER INTERVALS
 - FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(j)/MWZ/SD/04



REVISIONS			
NO.	BY	DATE	APPROVED

CLIENT:

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TEL: +254-2-2710500

PROJECT NAME:

LAKE VICTORIA BASIN INTEGRATED WATER RESOURCES MANAGEMENT PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:

MWANZA SEWER CONNECTION UPGRADE

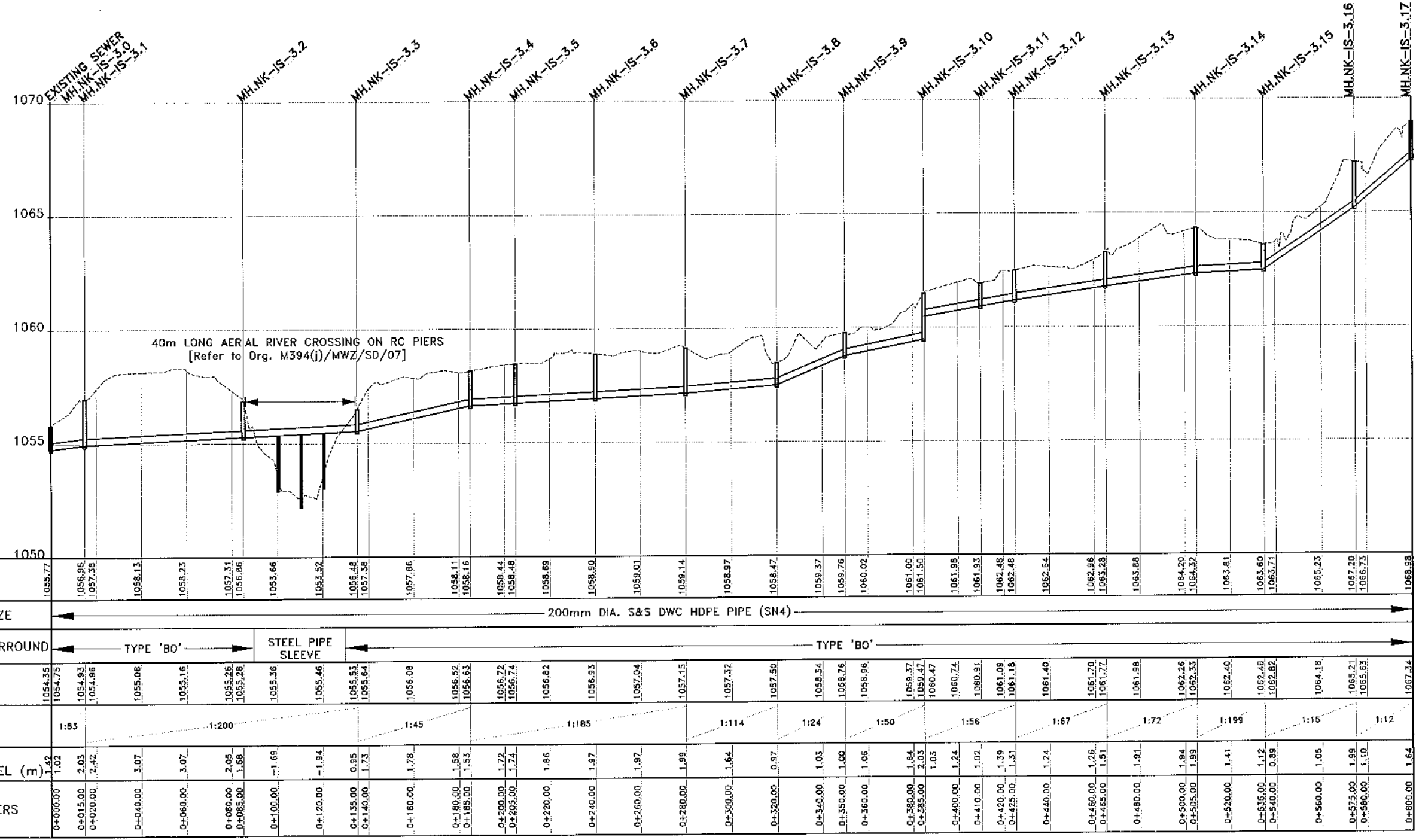
INFILL SEWERS
NYAKATO WARD

DRAWING TITLE:

SEWER NK-IS-3
PLAN AND LONGITUDINAL SECTION

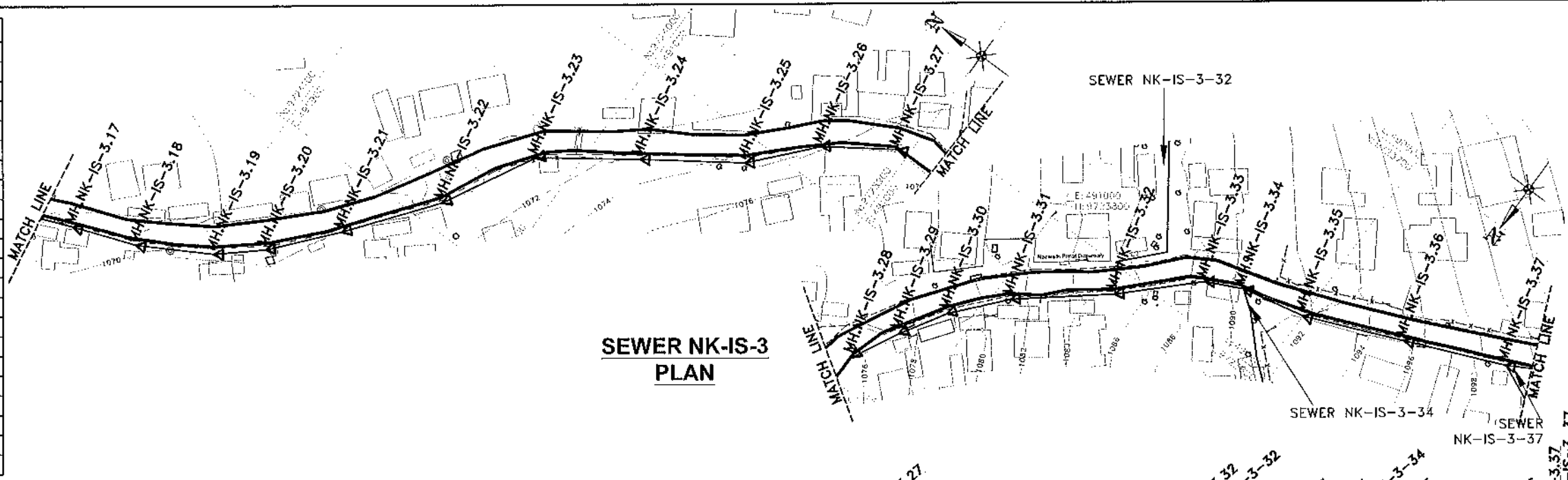
SHEET 1 OF 3

Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:2,000 VER: 1:200	Date: MARCH 2024
DRG No. M394(j)/MWZ/NK/12	



**SEWER NK-IS-3
LONGITUDINAL SECTION**

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-3.17	9724142.200	490818.951
MH.NK-IS-3.18	9724118.705	490827.493
MH.NK-IS-3.19	9724092.659	490842.379
MH.NK-IS-3.20	9724077.565	490855.501
MH.NK-IS-3.21	9724058.000	490878.243
MH.NK-IS-3.22	9724033.545	490909.897
MH.NK-IS-3.23	9724014.525	490945.086
MH.NK-IS-3.24	9723981.825	490968.123
MH.NK-IS-3.25	9723948.723	490990.578
MH.NK-IS-3.26	9723928.696	491012.915
MH.NK-IS-3.27	9723904.302	491029.269
MH.NK-IS-3.28	9723888.672	491029.101
MH.NK-IS-3.29	9723870.780	491020.163
MH.NK-IS-3.30	9723853.612	491009.903
MH.NK-IS-3.31	9723834.674	490993.563
MH.NK-IS-3.32	9723809.161	490962.776
MH.NK-IS-3.33	9723784.647	490937.794
MH.NK-IS-3.34	9723778.000	490924.347
MH.NK-IS-3.35	9723772.785	490899.897
MH.NK-IS-3.36	9723757.061	490863.117
MH.NK-IS-3.37	9723741.293	490826.357



- NOTES:**
- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(j)/MWZ/NK/01
 - CONTOUR LEVELS ARE AT 2 METER INTERVALS
 - GRID VALUES ARE AT 100 METER INTERVALS
 - FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(j)/MWZ/SO/04

- LEGEND - PLAN**
- EXISTING FEATURES:**
- 1220 CONTOUR WITH ELEVATIONS
 - SEWER
 - DRAIN
 - FENCE
 - PAVED ROAD
 - MURRAM / EARTH ROAD
 - PERMANENT BUILDING
 - TEMPORARY BUILDING
 - POWER POLE
 - GATE
 - CULVERT
 - TP 9 TRIAL PIT
- PROPOSED FEATURES:**
- SEWER WITH MANHOLE
- LEGEND - PROFILE**
- EXISTING FEATURES:**
- GROUND LEVEL
- PROPOSED FEATURES:**
- GRAVITY SEWER WITH MANHOLE

REVISORS	SIGN	DATE	APPROVED

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
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JOINT VENTURE

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PROJECT NAME:
LAKE VICTORIA BASIN INTEGRATED
WATER RESOURCES MANAGEMENT
PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

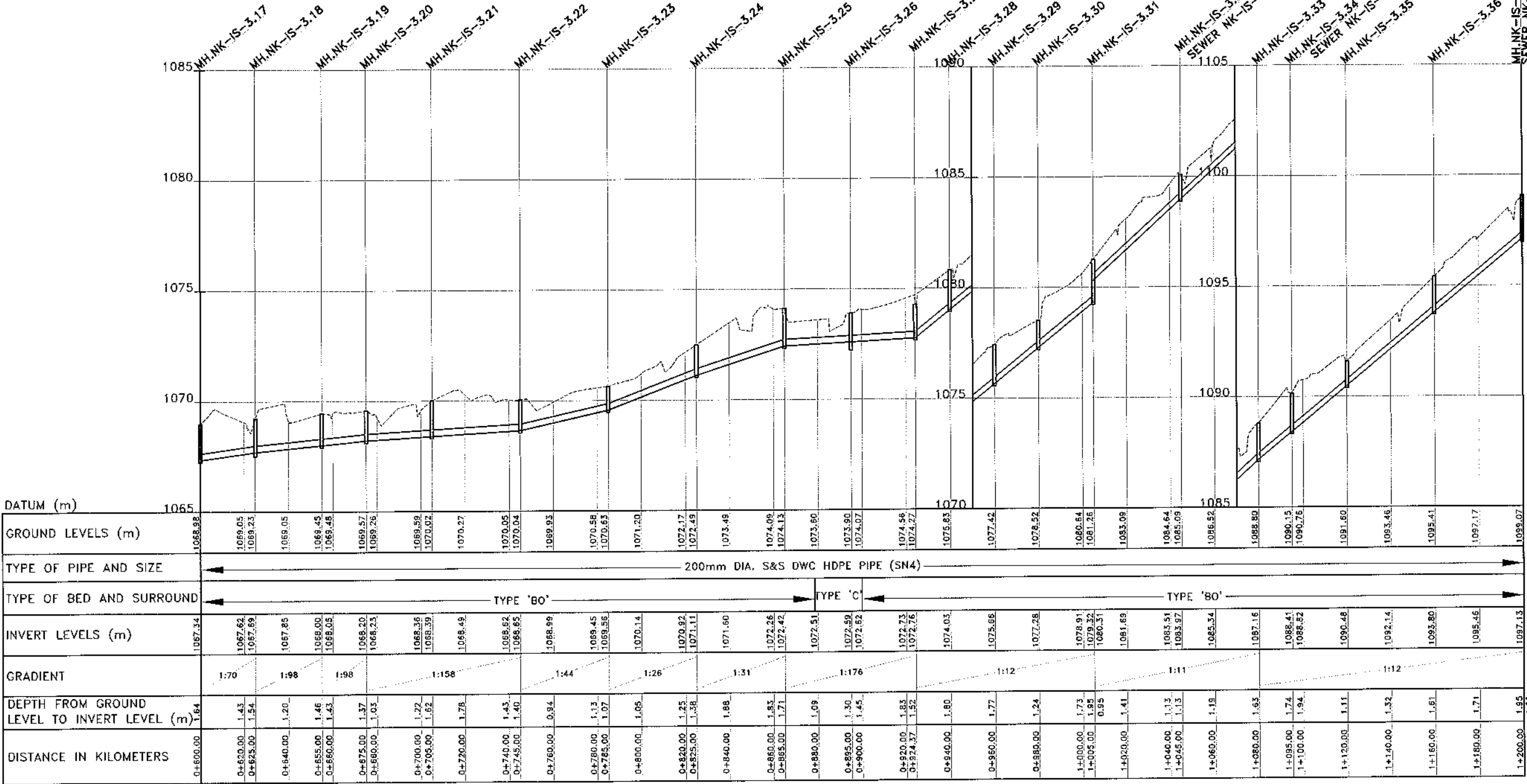
**INFILL SEWERS
NYAKATO WARD**

DRAWING TITLE:
SEWER NK-IS-3
PLAN AND LONGITUDINAL SECTION

SHEET 2 OF 3

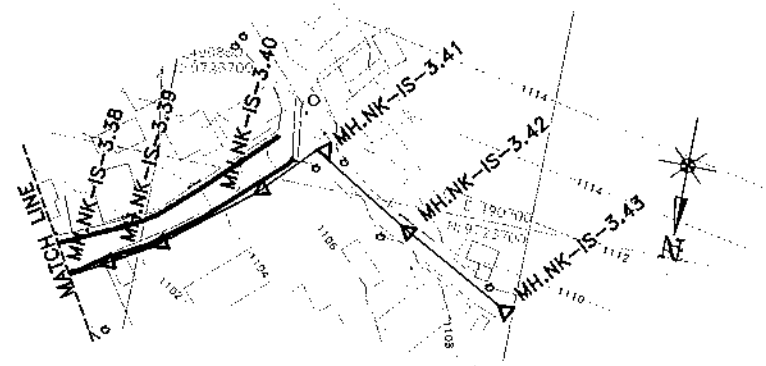
Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3 HOR: 1:2,000 VER: 1:200	Date: MARCH 2024

DRG No. M394(j)/MWZ/NK/13

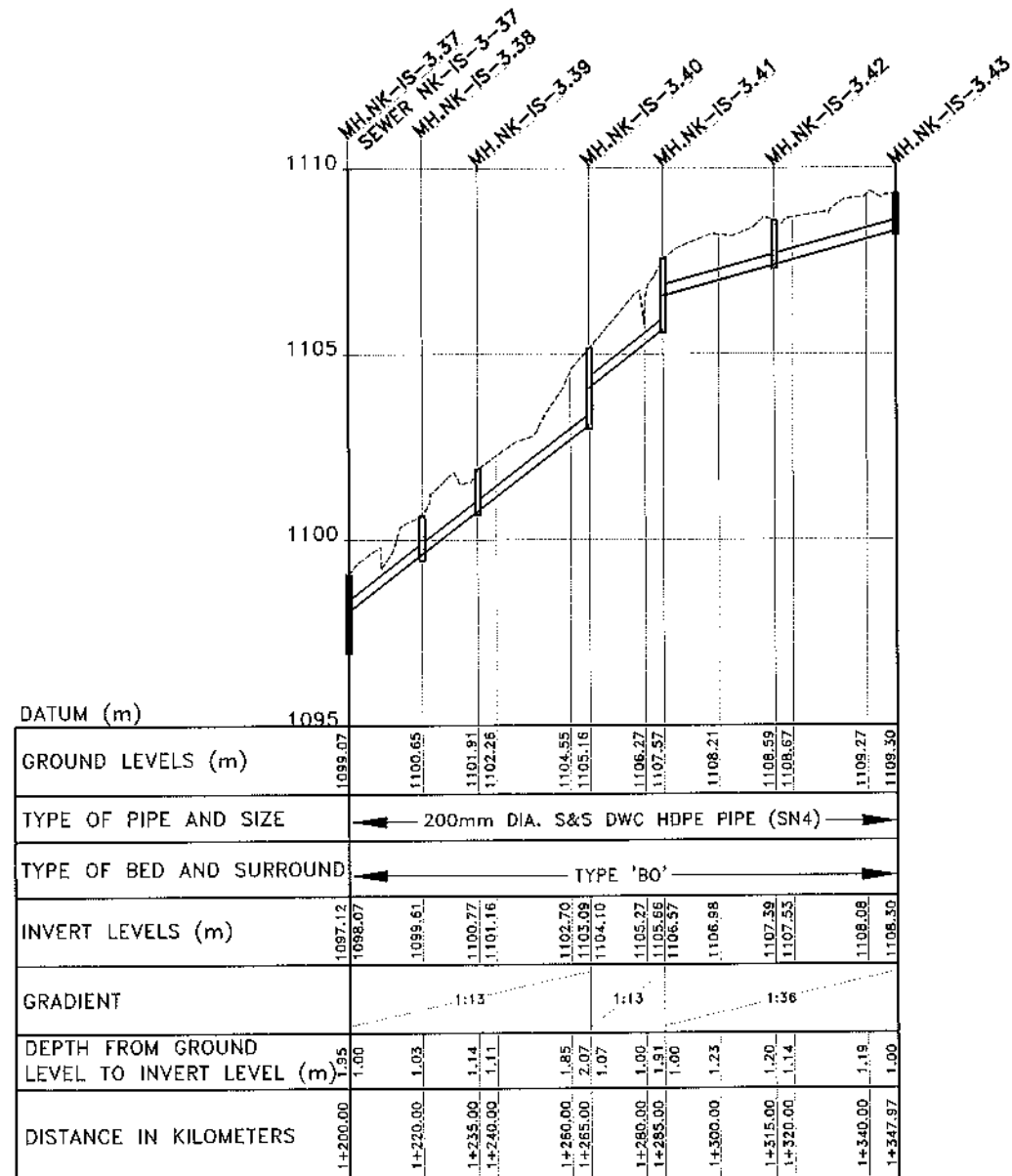


**SEWER NK-IS-3
LONGITUDINAL SECTION**

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-3.37	9723741.293	490826.357
MH.NK-IS-3.38	9723731.380	490808.986
MH.NK-IS-3.39	9723723.759	490796.066
MH.NK-IS-3.40	9723704.953	490772.693
MH.NK-IS-3.41	9723690.438	490758.933
MH.NK-IS-3.42	9723705.760	490733.141
MH.NK-IS-3.43	9723721.164	490703.995



**SEWER NK-IS-3
PLAN**



**SEWER NK-IS-3
LONGITUDINAL SECTION**

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(j)/MWZ/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(j)/MWZ/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1270 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

EXISTING FEATURES:

- GROUND LEVEL

PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS				SIGN	DATE	APPROVED

CLIENT:

EAST AFRICAN COMMUNITY (EAC)
LAKE VICTORIA BASIN
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PROJECT NAME:

LAKE VICTORIA BASIN INTEGRATED
WATER RESOURCES MANAGEMENT
PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:

MWANZA SEWER CONNECTION UPGRADE

**INFILL SEWERS
NYAKATO WARD**

DRAWING TITLE:

SEWER NK-IS-3
PLAN AND LONGITUDINAL SECTION

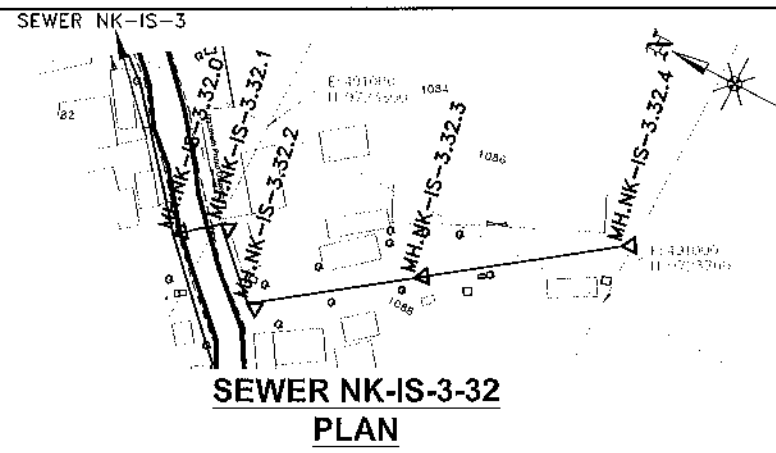
SHEET 3 OF 3

Designed by: V.K. Drawn by: V.K.

Checked by: N.J.N. Approved by: R.S.R.

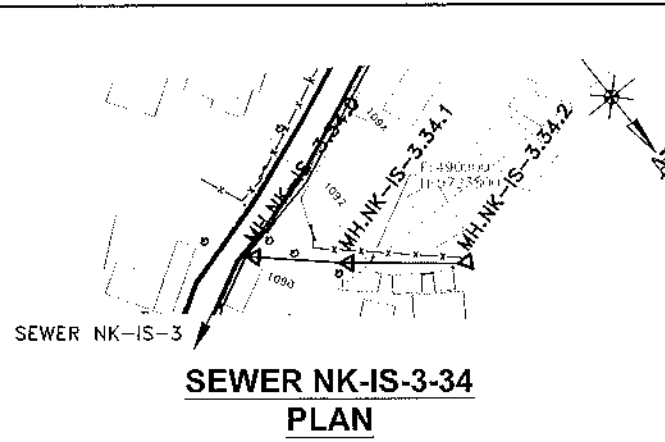
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DRG No. M394(j)/MZ/NK/14



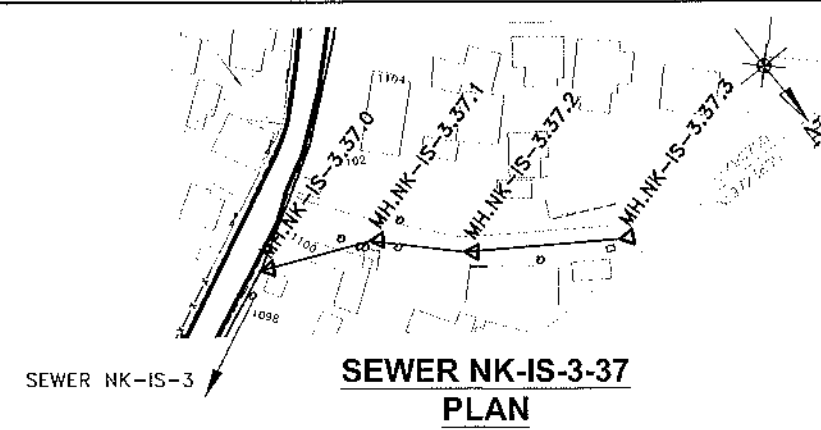
SEWER NK-IS-32

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-3.32.0	9723809.161	490962.776
MH.NK-IS-3.32.1	9723799.080	490971.036
MH.NK-IS-3.32.2	9723783.220	490955.837
MH.NK-IS-3.32.3	9723746.888	490962.388
MH.NK-IS-3.32.4	9723702.475	491014.846



SEWER NK-IS-34

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-3.34.0	9723778.000	490924.347
MH.NK-IS-3.34.1	9723794.846	490905.875
MH.NK-IS-3.34.2	9723814.447	490881.660



SEWER NK-IS-37

MANHOLE COORDINATES		
REF. No	NORTHING	EASTING
MH.NK-IS-3.37.0	9723741.293	490826.357
MH.NK-IS-3.37.1	9723753.271	490798.852
MH.NK-IS-3.37.2	9723770.968	490781.193
MH.NK-IS-3.37.3	9723793.791	490747.122

NOTES:

- FOR GENERAL SEWER LAYOUT PLAN SEE DRG. No. M394(j)/MW2/NK/01
- CONTOUR LEVELS ARE AT 2 METER INTERVALS
- GRID VALUES ARE AT 100 METER INTERVALS
- FOR BED AND SURROUND DETAILS REFER TO DRG. No. M394(j)/MW2/SD/04

LEGEND - PLAN

EXISTING FEATURES:

- 1220 CONTOUR WITH ELEVATIONS
- SEWER
- DRAIN
- FENCE
- PAVED ROAD
- MURRAM / EARTH ROAD
- PERMANENT BUILDING
- TEMPORARY BUILDING
- POWER POLE
- GATE
- CULVERT
- TP 9 TRIAL PIT

PROPOSED FEATURES:

- SEWER WITH MANHOLE

LEGEND - PROFILE

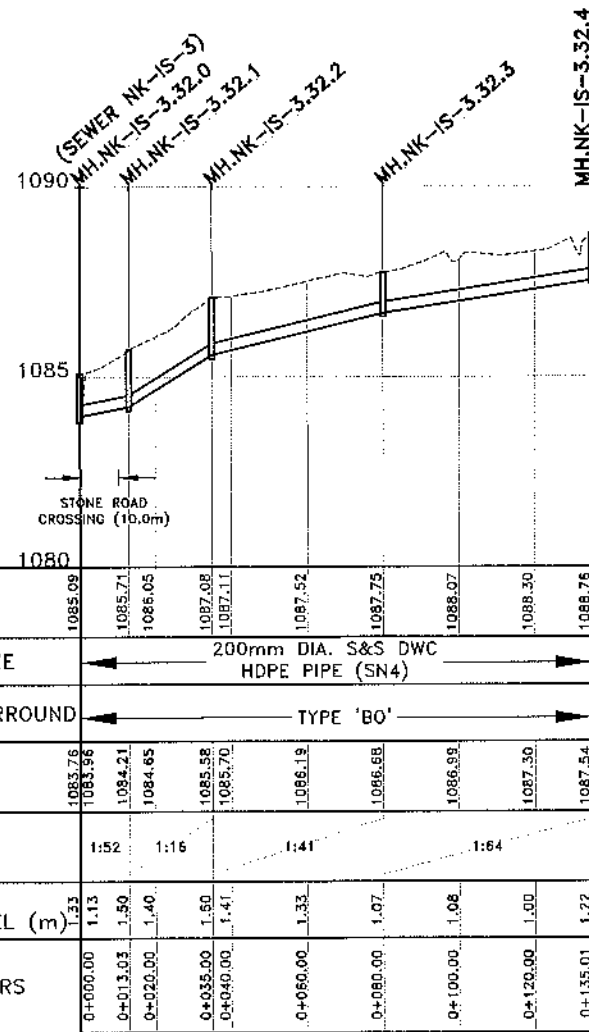
EXISTING FEATURES:

- GROUND LEVEL

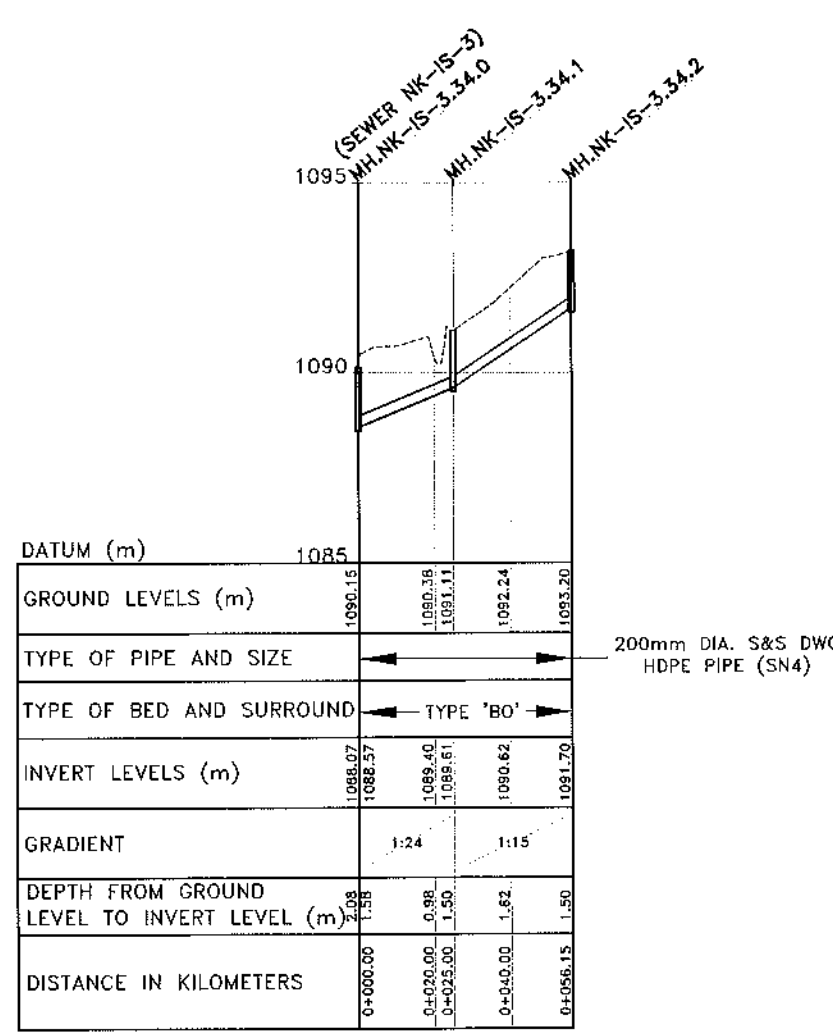
PROPOSED FEATURES:

- GRAVITY SEWER WITH MANHOLE

REVISIONS			
NO.	BY	DATE	APPROVED



SEWER NK-IS-32 LONGITUDINAL SECTION



SEWER NK-IS-34 LONGITUDINAL SECTION



SEWER NK-IS-37 LONGITUDINAL SECTION

CLIENT:

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PROJECT NAME:
LAKE VICTORIA BASIN INTEGRATED WATER RESOURCES MANAGEMENT PROGRAMME (LVB-IWRMP)

CONTRACT TITLE:
MWANZA SEWER CONNECTION UPGRADE

INFILL SEWERS NYAKATO WARD

DRAWING TITLE:
SEWER NK-IS-32,34 & 37
PLAN AND LONGITUDINAL SECTION

SHEET 1 OF 1

Designed by: V.K	Drawn by: V.K
Checked by: N.J.N	Approved by: R.S.R
Scale: A3- HOR: 1:200 VER: 1:200	Date: MARCH 2024

DRG No. M394(j)/MW2/NK/15