AFRICAN DEVELOPMENT BANK
AFRICAN DEVELOPMENT FUND

Athi Water Works Development Agency

BIDDING DOCUMENT FOR P R O C U R E M E N T OF WORKS

Procurement of

NAIROBI RIVERS SEWERAGE IMPROVEMENT PROGRAM (PHASE II)

Lot 3-Construction of Clay Works and Mwiki Reticulation Sewers,

IFB No. AWWDA/NaRSIP II/W-03/2020

Volume 4: Books of Drawings

January 2020

	COVER PAGE
WS622-L1-LD1-00	LIST OF DRAWINGS
	LAYOUT PLAN
WS622-L1-LP- 000	GENERAL LAYOUT PLAN FOR PACKAGE 3
WS622-L1-LP- 001	GENERAL LAYOUT PLAN
WS622-L1-LP- 002	GENERAL LAYOUT PLAN
WORK PACKAGE 1	PLAN AND PROFILES - CLAY WOKS & MWIKI AREAS
WS622-L1-PROF-MP2 - 001	PLAN AND PROFILE MP2 - LINE MP2
WS622-L1-PROF-MP2 - 002	PLAN AND PROFILE MP2 -02 & MP2 - 04 - LINE MP2
WS622-L1-PROF-MP2 - 003	PLAN AND PROFILE MP2 -06 & MP2 - 08 - LINE MP2
WS622-L1-PROF-MP2 - 004	PLAN AND PROFILE MP2 -10 - LINE MP2
WS622-L1-PROF-MP2 - 005	PLAN AND PROFILE MP2 -12 - LINE MP2
WS622-L1-PROF-MP2 - 006	PLAN AND PROFILE MP2 -13 - LINE MP2
WS622-L1-PROF-MP2 - 007	PLAN AND PROFILE MP2 -14 - LINE MP2
WS622-L1-PROF-MP2 - 008	PLAN AND PROFILE MP2 -15 - LINE MP2
WS622-L1-PROF-MP2 - 009	PLAN AND PROFILE MP2 -16 - LINE MP2
WS622-L1-PROF-MP2 - 010	PLAN AND PROFILE MP2 -17 - LINE MP2
WS622-L1-PROF-MP2 - 011	PLAN AND PROFILE MP2 -18 - LINE MP2
WS622-L1-PROF-MP2 - 012	PLAN AND PROFILE MP2 -19 - LINE MP2
WS622-L1-PROF-MP2 - 013	PLAN AND PROFILE MP2 -20 - LINE MP2
WS622-L1-PROF-MP2 - 014	PLAN AND PROFILE MP2 -11 - LINE MP2
WS622-L1-PROF-MP2 - 015	PLAN AND PROFILE MP2 -21 - LINE MP2
WS622-L1-PROF-REDS - 001	PLAN AND PROFILE REDS - LINE REDS
WS622-L1-PROF-REDS - 002	PLAN AND PROFILE REDS A & REDS 04 - LINE REDS
WS622-L1-PROF-REDS - 003	PLAN AND PROFILE REDS 06 & REDS 10 - LINE REDS
WS622-L1-PROF-REDS - 004	PLAN AND PROFILE REDS 11 & REDS 12 - LINE REDS
WS622-L1-PROF-REDS - 005	PLAN AND PROFILE REDS 13 & REDS 14 - LINE REDS
WS622-L1-PROF-REDS - 006	PLAN AND PROFILE REDS 15 & REDS 16 - LINE REDS
WS622-L1-PROF-REDS - 007	PLAN AND PROFILE REDS 18 & REDS 19 - LINE REDS
WS622-L1-PROF GIT - 001	PLAN AND PROFILE GIT A & GIT (1)-001 - LINE GIT
WS622-L1-PROF GIT - 002	PLAN AND PROFILE GIT A03 - LINE GIT
WS622-L1-PROF GIT - 003	PLAN AND PROFILE GIT A04 - LINE GIT
WS622-L1-PROF GIT - 004	PLAN AND PROFILE GIT A05 - LINE GIT
WS622-L1-PROF GIT - 005	PLAN AND PROFILE GIT A06 & GIT 07 - LINE GIT
WS622-L1-PROF GIT - 006	PLAN AND PROFILE GIT A16 - LINE GIT
WS622-L1-PROF GIT - 007	PLAN AND PROFILE GIT A2 - LINE GIT
WS622-L1-PROF GIT - 008	PLAN AND PROFILE GIT A3 & GIT - 08 - LINE GIT
WS622-L1-PROF GIT - 001	PLAN AND PROFILE GIT B1 - LINE GIT
WS622-L1-PROF GIT - 002	PLAN AND PROFILE GIT B2 & GIT B1 - 04 - LINE GIT
WS622-L1-PROF GIT - 003	PLAN AND PROFILE GIT B3 & GIT B3 - 05 - LINE GIT
WS622-L1-PROF GIT - 004	PLAN AND PROFILE GIT B3 - 8 & GIT B3 - 10 - LINE GIT
WS622-L1-PROF-CSB - 001	PLAN AND PROFILE CSB2 & CSB1 & CSB 3 - LINE CSB
WS622-L1-PROF-CSB - 002	PLAN AND PROFILE CSB3 - 01 & CSB3 - 04 & CSB 3 - 06 - LINE CSB
WS622-L1-PROF-CSB - 003	PLAN AND PROFILE CSB4 & CSB4 - 03 - LINE CSB
WS622-L1-PROF-CSP - 001	PLAN AND PROFILE CSP - LINE CSP
WS622-L1-PROF-CSP - 002	PLAN AND PROFILE CSP - 02 & CSP - 07 - LINE CSP
WS622-L1-PROF-LITS - 001	PLAN AND PROFILE LITS - LINE LITS
WS622-L1-PROF-LITS - 002	PLAN AND PROFILE LITS (1) & LITS 10 - LINE LITS
WS622-L1-PROF-LITS - 003	PLAN AND PROFILE LITS - 17 - LINE LITS
WS622-L1-PROF-LITS - 004	PLAN AND PROFILE LITS- 17 - 2 - LINE LITS
WS622-L1-PROF-LITS - 004	PLAN AND PROFILE LITS - 17 - 7 - LINE LITS
WS622-L1-PROF-CCN 001	PLAN AND PROFILE-CCN
WS622-L1-PROF-CCN(1) 002	PLAN AND PROFILE-CCN(1)
WS622-L1-PROF-CCN 003	PLAN AND PROFILE-CCN 9
WS622-L1-PROF-MWAC- 001	PLAN AND PROFILE MWAC 1 - LINE MWAC
WS622-L1-PROF-MWAC- 002	PLAN AND PROFILE MWAC 2 & MWAC 1 - 13 - LINE MWAC
WS622-L1-PROF-HUNTA - 001	PLAN AND PROFILE HUNTA 1 & HUNTA 2 - LINE HUNTA
WS622-L1-PROF-HUNTA - 002	PLAN AND PROFILE MWAC 1 -13 & MWAC1 - 17 - LINE HUNTA
WS622-L1-PROF-HUNTA - 003	PLAN AND PROFILE HUNTA 2-1 & HUNTA 3 & HUNTA4-1 - LINE HUNTA
WS622-L1-PROF-HUNTA - 004	PLAN AND PROFILE HUNTA 4 & HUNTA 4-1-1 - LINE HUNTA

WS622-L1-PROF-HUNTA - 005	PLAN AND PROFILE HUNTA5-1 & HUNTA5 - LINE HUNTA
WS622-L1-PROF-HUNTA - 006	PLAN AND PROFILE HUNTA5-1 & HUNTA5-2 & HUNTA5-4 - LINE HUNTA
WS622-L1-PROF-HUNTA - 007	PLAN AND PROFILE HUNTB & HUNTA5-3 - LINE HUNTA
WS622-L1-PROF-HUNT - 001	PLAN AND PROFILE HUNTB-2 & HUNTB-5 - LINE HUNT
WS622-L1-PROF-HUNT - 001	PLAN AND PROFILE HUNTB-7 & HUNTB-8 - LINE HUNT
WS622-L1-PROF-HUNT - 002	PLAN AND PROFILE HUNTB-8 & HUNTB-10 & HUNTB-11 - LINE HUNT
WS622-L1-PROF-HUNT - 003	PLAN AND PROFILE HUNTB-12 & HUNTB - LINE HUNT
WS622-L1-PROF-HUNT - 003	PLAN AND PROFILE HUNTC - LINE HUNT
WS622-L1-PROF-MWAMA - 001	PLAN AND PROFILE MWAMA & MWAMA 1 & MWAMA-2 - LINEMWAMA
WS622-L1-PROF-MWAMA - 001	PLAN AND PROFILE MWAMA-2 & MWAMA 2- LINEMWAMA
WS622-L1-PROF-MWAMA - 002	PLAN AND PROFILE MWAMA 1-1 & MWAMA-2 - LINE MWAMA
WS622-L1-PROF-MWAMA - 004	PLAN AND PROFILE MWAMA 3& MWAC 3-6 - LINE MWAMA
WS622-L1-PROF-MWAMB - 005	PLAN AND PROFILE MWAC 3 & MWAC 3-7 & - LINE MWAMA
WS622-L1-PROF-MWAMB - 006	PLAN AND PROFILE MWAMB - LINE MWAMB
WS622-L1-PROF-MWAMB - 007	PLAN AND PROFILE MWAMB 1 & MWAMB - 2 - LINE MWAMB
WS622-L1-PROF-MWAMB - 008	PLAN AND PROFILE MWAMB-6 & MWAMB - 7 - LINE MWAMB
WS622-L1-PROF-MWAMB - 009	PLAN AND PROFILE MWAMB-12 & MWAMB - 13 - LINE MWAMB
WS622-L1-PROF-UMAE - 001	PLAN AND PROFILE MWAMB-17 & MWAMB - 2 - LINE MWAMB
WS622-L1-PROF-REDS - 003	PLAN AND PROFILE UMAB 1 & UMAB 2 - LINE UMAB
WS622-L1-PROF-UMAD - 001	PLAN AND PROFILE UMAE- 6 & UMAE 1 - LINE UMAE
WS622-L1-PROF-UMAD - 002	PLAN AND PROFILE UMAD 1 & UMAD 2 - LINE UMAD
WS622-L1-PROF-UMAD - 002	PLAN AND PROFILE UMAD 3 & UMAD 3.1 - LINE UMAD
WS622-L1-PROF-UMAD - 003	PLAN AND PROFILE UMAD 3-1 & UMAD 4 & UMAD 4-1 - LINE UMAD
WS622-L1-PROF-UMAA - 001	PLAN AND PROFILE UMAD 5 & UMAD 5-1 & UMAD 6 - LINE UMAD
WS622-L1-PROF-UMAB - 001	PLAN AND PROFILE UMAA 1 & UMAA 2 - LINE UMAA
WS622-L1-PROF-UMAB - 002	PLAN AND PROFILE UMAB 3 & UMAB 4 - LINE UMAB
WS622-L1-PROF-UMAB - 003	PLAN AND PROFILE UMAB 5 & UMAB 7 - LINE UMAB
WS622-L1-PROF-UMAB - 004	PLAN AND PROFILE UMAB 8 & UMAB9 - LINE UMAB
WS622-L1-PROF MTP1 - 001	PLAN AND PROFILE MTP1A & MTP1A -1 - LINE MTP1
WS622-L1-PROF MTP1 - 002	PLAN AND PROFILE MTP1A 2 & MTP1A 3 & MTP1A 4 - LINE MTP 1
WS622-L1-PROF MTP1 - 003	PLAN AND PROFILE MTP1A 5 & MTP1A 5 -1 & MTP1A 6 - LINE MTP1
WS622-L1-PROF MTP1 - 004	PLAN AND PROFILE MTP1A 7 & MTP1A 7 -1 & MTP1A 7-1-1 - LINE MTP1
WS622-L1-PROF MTP1 - 005	PLAN AND PROFILE MTP1A 8 & MTP1A 8 -1 & MTP1A 9 - LINE MTP1
WS622-L1-PROF MTP1 - 006	PLAN AND PROFILE MTP1A 10 & MTP1A 11 & MTP1A 12 - LINE MTP1
WS622-L1-PROF MTP1 - 007	PLAN AND PROFILE MTP1A 13 & MTP1A 14 - LINE MTP1
WS622-L1-PROF MWIA - 001	PLAN AND PROFILE MWIA - LINE MWIA
WS622-L1-PROF MWIA - 002	PLAN AND PROFILE MWIA (1) & MWIA (2) - LINE MWIA
WS622-L1-PROF-KARU - 001	PLAN AND PROFILE KARU - LINE KARU
WS622-L1-PROF-KARU - 002	PLAN AND PROFILE KARU (1) - LINE KARU
WS622-L1-PROF-KARU - 003	PLAN AND PROFILE KARU - 02 - LINE KARU
WS622-L1-PROF-KARU - 004	PLAN AND PROFILE KARU - 02(1) - LINE KARU
WS622-L1-PROF-KARU - 005	PLAN AND PROFILE KARU 03 & KARU 06 & KARU 09 - LINE KARU
WS622-L1-PROF-KARU - 006	PLAN AND PROFILE KARU 15 & KARU 16 & KARU 02-7 - LINE KARU
WS622-L1-PROF-KARU - 007	PLAN AND PROFILE KARU 07 & KARU 08 & KARU 10 - LINE KARU
WS622-L1-PROF-KARU - 008	PLAN AND PROFILE KARU 02-10 & KARU 02-15 & KARU 02-8 - LINE KARU
WS622-L1-PROF-MWI B - 001	PLAN AND PROFILE MWI B - LINE MWIB
WS622-L1-PROF-MWI B - 002	PLAN AND PROFILE MWI B(1) - LINE MWIB
WS622-L1-PROF-MWI A - 003	PLAN AND PROFILE MWI A 24 & MWIA 26 & MWIA 28 - LINE MWIA
WS622-L1-PROF-MWI A - 004	PLAN AND PROFILE MWI A 29 & MWIA 30 - LINE MWIA
WS622-L1-PROF-MWI A - 005	PLAN AND PROFILE MWI A 27 & MWIA 28 - LINE MWIA
WS622-L1-PROF- KARU & MWI B -001	PLAN AND PROFILE KARU 02 - 11 & MWIB 04 & MWIB 07 - LINE KARU& MWIB
WS622-L1-PROF-MWIB - 002	PLAN AND PROFILE MWI BO9 - LINE MWIB
WS622-L1-PROF-MWIB - 003	PLAN AND PROFILE MWI BO9 - 5 - LINE MWIB
	STANDARD DRAWINGS
WS622-L1-STD-01	STANDARD DRAWING FOR MANHOLES AND PIPE CROSSINGS
WS622-L1-STD-02	STANDARD DRAWING FOR RIVER CROSSING DETAILS
WS622-L1-STD-03	STANDARD DRAWING FOR RIVER CROSSING FOUNDATION
	COLUMN & TRUSS DETAILS
WS622-L1-STD-04	STANDARD DRAWING SIGNBOARD

Reference Drawings	

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984

Runji & Partners

Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Checked — Date — Name : N.M

Designed — Date — Name : S.M.W

Approved — Date — Name : R.N

NAIROBI CITY WATER & SEWERAGE COMPANY
(NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

Date — DEPARTMENT HEAD

CONTRACT NO. — Rev

Date — Managing Director

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: LIST OF DRAWINGS

Scales: Hor. 1:1000, Vert. 1:100

Drg No. **WS622-L1-LD-00**

Reference Drawings				

Reference Drawings

REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984

Runji & Partners

Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY 2017	Designed	Date
Name : H.M.W		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title

PROPOSED LAYOUT PLAN - LOT 1
PACKAGE III (CLAY CITY AND MWIKI)

Scales 1:2,500

Drg No. WS622-L1- LP- 001

CCN PLAN & PROFILE

Datum 1560

Chainage	Manhole Location	Original ground levels	Invert Elevations	Slope %	Pipe ø mm
0+758		1582.19	1579.00		
0+760			1579.00	S=6.0% L=50.0m	DN 300mm Concrete
0+762.02	0+762.02				
0+780		1580.93	1577.45	S=6.0% L=26.0m	
0+788.02	0+788.02		1577.45		
0+800		1579.69		S=6.0% L=40.0m	
0+820		1578.43			
0+828.02	0+828.02		1575.06		
0+840		1577.45	1575.06		
0+860		1576.85		S=3.0% L=50.0m	
0+878.02	0+878.02		1573.56		
0+880		1575.88	1573.56		
0+900		1575.10		S=3.0% L=50.0m	
0+920		1574.38	1572.06		
0+928.02	0+928.02		1572.06		
0+940		1573.49		S=10.3% L=30.0m	
0+958.02	0+958.02		1568.97		
0+960		1572.28	1568.97	S=10.3% L=30.0m	
0+980		1570.56	1565.89		
0+988.02	0+988.02		1565.89		
1+000		1569.67		S=10.3% L=40.0m	
1+020		1568.71	1561.78	S=10.3% L=7.2m	
1+028.02	1+028.02		1561.78		
1+035.21	1+035.21		1561.04	S=10.3% L=27.8m	
1+040		1565.99	1561.04		
1+060		1562.94	1558.18	S=7.7% L=30.0m	
1+062.99	1+062.99		1558.18		
1+080		1560.12	1555.88		
1+092.99	1+092.99		1555.88		
1+100		1558.40		S=7.7% L=32.7m	
1+120		1558.35	1553.37		
1+125.67	1+125.67		1553.37		
1+140		1555.70		S=7.7% L=28.2m	
1+153.90	1+153.90		1551.20		
1+160		1553.13	1551.20		
1+180		1551.04		S=7.7% L=40.0m	
1+193.90	1+193.90		1548.12		
1+200		1549.53	1548.12		
1+220		1548.10		S=7.7% L=40.0m	
1+233.90	1+233.90		1545.05		
1+240		1546.86	1545.05	S=3.0% L=40.0m	
1+260		1545.62			
1+273.90	1+273.90		1543.85		
1+280		1543.53	1543.85	S=3.0% L=15.0m	
1+288.91	1+288.91	1543.00	1543.40		

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - CCN (1)

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CNN-002

CCN PLAN & PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1592.78	1590.92
0+020		1592.79	
0+040		1592.63	1590.29 / 1590.29
0+060	0+050.00	1592.44	
0+080		1592.08	
0+100	0+100.00	1591.23	1589.66 / 1589.66
0+120		1590.67	
0+140		1590.22	
0+160	0+150.00	1589.92	1589.04 / 1589.04
0+180		1589.89	
0+200	0+200.00	1589.86	1588.41 / 1588.41
0+220		1589.75	
0+240		1589.73	
0+260	0+250.02	1589.73	1587.78 / 1587.78
0+280		1589.69	
0+300	0+300.02	1589.66	1587.15 / 1587.15
0+320		1589.44	
0+340		1589.03	
0+360	0+350.02	1588.97	1586.53 / 1586.53
0+380	0+385.02	1589.29	1586.09 / 1586.09
0+400		1589.34	
0+420	0+425.02	1589.12	1585.59 / 1585.59
0+440		1589.03	
0+460	0+467.02	1588.69	1585.06 / 1585.06
0+480		1588.48	
0+500		1588.26	
0+520	0+512.02	1587.96	1584.49 / 1584.49
0+540		1587.63	
0+560	0+562.02	1587.22	1583.87 / 1583.87
0+580		1586.80	
0+600		1586.36	
0+620	0+612.02	1586.29	1583.24 / 1583.24
0+640		1586.14	
0+660	0+662.02	1585.63	1582.61 / 1582.61
0+680		1585.29	
0+700		1584.67	
0+720	0+712.02	1584.21	1581.98 / 1580.54
0+740		1583.33	
0+758		1582.19	1579.04

Slope %	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=35.0m	
S=1.3% L=40.0m	
S=1.3% L=42.0m	
S=1.3% L=45.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=1.3% L=50.0m	
S=3.0% L=50.0m	

Pipe ø mm: DN300mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -CCN

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CNN-001

CCN–9 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+304.77
Manhole Location	0+000.00			0+060.00			0+120.00			0+186.55			0+240.00	0+257.12		0+286.77	0+304.77
Original ground levels	1581.21	1581.07	1580.95	1580.92	1581.03	1580.97	1580.86	1580.70	1580.68	1580.23	1579.55	1579.07	1578.26	1576.13	1573.17	1569.60	1568.55
Invert Elevations	1579.53			1578.63 1578.63			1577.73 1577.73			1576.73 1576.73			1574.00 1574.00	1572.15 1572.15		1568.95 1568.95	1567.00
Slope %		S=1.5% L=60.0m			S=1.5% L=60.0m			S=1.5% L=66.5m			S=5.1% L=53.5m		S=10.8% L=17.1m	S=10.8% L=29.7m		S=10.8% L=18.0m	
Pipe Ø mm	DN 300mm Concrete																

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - CCN - 9

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CNN-003

HUNTA5 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+101
Manhole Location	0+000.00	0+030.00		0+061.00		0+092.00	0+101.00
Original ground levels	1583.84	1583.64	1583.59	1583.43	1583.09	1582.96	1582.98
Invert Elevations	1582.71	1582.26 / 1582.26		1581.80 / 1581.80		1581.33 / 1581.33	1581.20
Slope %	S=1.5% L=30.0m	S=1.5% L=31.0m		S=1.5% L=31.0m		S=1.5% L=9.0m	
Pipe ø mm	DN 225mm Concrete						

HUNTA5–1 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+150
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00
Original ground levels	1585.14	1585.09	1585.20	1585.02	1584.76	1584.54	1583.98	1583.24	1582.87
Invert Elevations	1583.73		1582.98 / 1582.98			1582.23 / 1582.23			1581.48
Slope %	S=1.5% L=50.0m		S=1.5% L=50.0m			S=1.5% L=50.0m			
Pipe ø mm	DN 225mm Concrete								

Reference Drawings			
B			
A			
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - HUNTA 5 & HUNTA5-1

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-HUNTA-003

HUNTA1 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+193.65
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00	0+186.00	0+193.65
Original ground levels	1580.90	1580.43	1579.88	1579.40	1579.08	1578.71	1578.30	1577.85	1577.52	1577.27	1577.23
Invert Elevations	1579.87		1578.64	1578.64		1577.40	1577.40		1576.65	1576.11	1576.00
									1576.65	1576.11	
Slope %	S=2.5% L=50.0m		S=2.5% L=50.0m		S=1.5% L=50.0m			S=1.5% L=36.0m		S=1.5% L=7.7m	
Pipe ø mm	DN 225mm Concrete										

HUNTA2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+143
Manhole Location	0+000.00		0+036.00		0+086.00			0+136.00	0+143.00
Original ground levels	1580.23	1580.17	1580.03	1579.66	1579.20	1578.91	1578.58	1578.24	1578.26
Invert Elevations	1579.07		1578.53	1578.53	1577.78	1577.78		1577.03	1577.03
									1576.93
Slope %	S=1.5% L=36.0m		S=1.5% L=50.0m			S=1.5% L=50.0m		S=1.5% L=7.0m	
Pipe ø mm	DN 225mm Concrete								

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Designed — Date — Name : S.M.W
Checked — Date — Name : S.M.W
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -HUNTA 1 & HUNTA 2

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-HUNTA1-001

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+159
Manhole Location	0+000.00		0+036.00		0+086.00			0+136.00	0+159.00
Original ground levels	1581.59	1580.64	1580.37	1580.15	1580.00	1579.65	1579.24	1578.77	1578.24
Invert Elevations	1580.21	1579.49 / 1579.49			1578.49 / 1578.49			1577.49 / 1577.49	1577.03
Slope %	S=2.0% L=36.0m		S=2.0% L=50.0m			S=2.0% L=50.0m		S=2.0% L=23.0m	
Pipe ø mm	DN 225mm Concrete								

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+165
Manhole Location	0+000.00		0+035.00		0+085.00			0+135.00		0+165.00
Original ground levels	1582.79	1582.73	1582.51	1581.99	1581.36	1580.98	1580.53	1579.97	1579.36	1579.04
Invert Elevations	1581.60	1580.90 / 1580.90			1579.90 / 1579.90			1578.90 / 1578.90	1578.30	
Slope %	S=2.0% L=35.0m		S=2.0% L=50.0m			S=2.0% L=50.0m		S=2.0% L=30.0m		
Pipe ø mm	DN 225mm Concrete									

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+163.30
Manhole Location	0+000.00		0+035.00		0+085.00			0+135.00		0+163.30
Original ground levels	1584.03	1583.90	1583.67	1583.36	1582.97	1582.50	1581.90	1581.20	1580.71	1580.62
Invert Elevations	1582.51	1581.81 / 1581.81			1580.81 / 1580.81			1579.81 / 1579.81	1579.24	
Slope %	S=2.0% L=35.0m		S=2.0% L=50.0m			S=2.0% L=50.0m		S=2.0% L=28.3m		
Pipe ø mm	DN 225mm Concrete									

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017
Name : B.M.O

Designed — Date
Name : S.M.W

Checked — Date
Name : S.M.W

Approved — Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - HUNTA2 - 1 & HUNTA3 & HUNTA4-1

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-HUNTA-002

HUNTA4 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120		0+160	0+164.39
Manhole Location	0+000.00		0+040.00		0+080.00			0+139.84	0+154.84	0+164.39
Original ground levels	1583.81	1583.79	1583.68	1583.09	1582.82	1582.10	1581.07	1580.24	1580.42	1580.15
Invert Elevations	1582.19		1581.39 1581.39		1580.59 1580.59			1579.39 1579.39	1579.09 1579.09	1578.90
Slope %	S=2.0% L=40.0m		S=2.0% L=40.0m			S=2.0% L=59.8m	S=2.0% L=15.0m		S=2.0% L=9.5m	
Pipe ø mm	DN 225mm Concrete									

HUNTA4–1–1 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+163.22
Manhole Location	0+000.00			0+60.00			0+120.00			0+163.22
Original ground levels	1584.58	1584.51	1584.50	1583.99	1583.50	1582.95	1582.17	1581.71	1581.27 1581.26	
Invert Elevations	1582.66			1581.46 1581.46			1580.26 1580.26		1579.40	
Slope %	S=2.0% L=60.0m			S=2.0% L=60.0m			S=2.0% L=43.2m			
Pipe ø mm	DN 225mm Concrete									

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -HUNTA4 & HUNTA4-1-1

Scales Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-HUNTA-003

HUNTA5–2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+150
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00
Original ground levels	1585.62	1585.72	1585.53	1585.35	1584.95	1584.58	1584.19	1583.81	1583.41
Invert Elevations	1584.20			1583.45 1583.45		1582.70 1582.70		1581.95	
Slope %	S=1.5% L=50.0m			S=1.5% L=50.0m			S=1.5% L=50.0m		
Pipe ø mm	DN 225mm Concrete								

HUNTA5–4 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140
Manhole Location	0+000.00		0+040.00			0+090.00		0+140.00
Original ground levels	1586.72	1586.77	1586.55	1586.00	1585.50	1585.12	1584.43	1583.84
Invert Elevations	1584.81		1584.21 1584.21		1583.46 1583.46			1582.71
Slope %	S=1.5% L=40.0m		S=1.5% L=50.0m			S=1.5% L=50.0m		
Pipe ø mm	DN 225mm Concrete							

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - HUNTA5-2 & HUNTA 5-4

Scales Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-HUNTA-004

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1567.23	1565.76
0+020		1567.55	1565.17 / 1565.17
0+029.15	0+029.15		
0+040		1567.45	
0+058.41	0+058.41		
0+060		1566.62	1564.65 / 1564.65
0+080		1565.38	1563.63 / 1563.63
0+089.15	0+089.15		
0+100		1564.30	
0+120		1564.38	1562.58 / 1562.58
0+124.15	0+124.15		
0+140		1564.45	
0+160		1564.52	1561.38 / 1561.38
0+164.15	0+164.15		
0+180		1564.04	
0+200		1563.77	1560.09 / 1560.09
0+207.15	0+207.15		
0+220		1562.46	1559.46 / 1559.46
0+228.15	0+228.15		
0+240		1561.53	
0+260		1561.50	
0+271.15	0+271.15		
0+280		1560.33	1558.17 / 1558.17
0+294.15	0+294.15		
0+300		1558.83	
0+320		1559.13	1557.71 / 1557.71
0+334.15	0+334.15		
0+340		1559.35	
0+360		1559.32	1556.91 / 1556.91
0+380		1559.13	1555.41 / 1555.41
0+384.15	0+384.15		
0+400		1557.91	
0+420		1556.62	1554.36 / 1554.36
0+419.15	0+419.15		
0+440		1555.28	1553.31
0+454.15		1554.36	

Slope %: S=2.0% L=29.2m; S=1.8% L=29.3m; S=3.3% L=30.7m; S=3.0% L=35.0m; S=3.0% L=40.0m; S=3.0% L=43.0m; S=3.0% L=21.0m; S=3.0% L=43.0m; S=2.0% L=23.0m; S=2.0% L=40.0m; S=3.0% L=50.0m; S=3.0% L=35.0m; S=3.0% L=35.0m

Pipe Ø mm: DN 225mm Concrete

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1586.07	1584.51
0+020		1585.90	
0+040	0+040.00	1585.77	1583.91 / 1583.91
0+060		1585.68	
0+080		1585.28	1583.16 / 1583.16
0+090	0+090.00		
0+100		1584.71	
0+120		1584.08	1582.41
0+140	0+140.00	1583.57	

Slope %: S=1.5% L=40.0m; S=1.5% L=50.0m; S=1.5% L=50.0m

Pipe Ø mm: DN 225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn: Date : MAY. 2017 — Name : B.M.O
Checked: Date — Name : S.M.W
Designed: Date — Name : S.M.W
Approved: Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PLAN & PROFILE - HUNTB & HUNTA5-3

Scales: Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-HUNTA-005

HUNTB–2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+215
Manhole Location	0+000.00		0+045.00			0+095.00		0+145.00	0+165.00			0+215.00
Original ground levels	1562.31	1561.90	1561.25	1560.61	1560.15	1559.61	1559.07	1558.89	1559.86	1559.78	1559.43	1559.24
Invert Elevations	1560.94		1559.81 / 1559.81			1558.56 / 1558.56		1557.31 / 1557.31	1556.81 / 1556.81			1555.56
Slope %	S=2.5% L=45.0m		S=2.5% L=50.0m			S=2.5% L=50.0m		S=2.5% L=20.0m		S=2.5% L=50.0m		
Pipe ø mm	DN 225mm Concrete											

HUNTB–5 PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+230
Manhole No.	0+000.00			0+050.00		0+100.00			0+150.00		0+195.00		0+230.00
Ground Level	1576.69	1576.07	1575.60	1575.03	1574.29	1573.40	1572.10	1570.22	1568.13	1566.13	1564.35	1562.56	1561.59
Invert Elevations	1575.01		1573.01 / 1573.01			1571.01 / 1569.21		1567.21 / 1565.19			1563.39 / 1561.40		1560.00
Pipe Data	S=4.0% L=50.0m			S=4.0% L=50.0m			S=4.0% L=50.0m			S=4.0% L=45.0m		S=4.0% L=35.0m	
Dia. & Material	DN 225mm Concrete												

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Checked Date
Name : S.M.W

Designed Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - HUNTB-2 & HUNTB-5 & HUNTB-7

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-HUNT-001

HUNTB-7 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+210
Manhole No.	0+000.00			0+050.00		0+090.00		0+130.00		0+170.00		0+210.00
Ground Level	1577.27	1576.95	1576.40	1575.66	1574.70	1573.55	1572.04	1570.16	1568.19	1566.43	1564.63	1563.78
Invert Elevations	1576.40		1574.40	1574.40	1572.80	1570.80	1569.20	1567.20	1565.60	1563.60		1562.00
Pipe Data	S=4.0% L=50.0m			S=4.0% L=40.0m		S=4.0% L=40.0m		S=4.0% L=40.0m		S=4.0% L=40.0m		
Dia. & Material	DN 225mm Concrete											

HUNTB-8 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220
Manhole No.	0+000.00		0+040.00		0+085.00			0+130.00		0+175.00		0+220.00
Ground Level	1578.16	1577.42	1576.76	1576.04	1575.35	1574.09	1572.55	1570.79	1568.87	1567.05	1565.40	1564.29
Invert Elevations	1575.43		1573.63	1573.63	1571.61	1571.61	1569.58	1567.58		1565.56	1563.56	1561.53
Pipe Data	S=4.5% L=40.0m		S=4.5% L=45.0m		S=4.5% L=45.0m			S=4.5% L=45.0m			S=4.5% L=45.0m	
Dia. & Material	DN 225mm Concrete											

Reference Drawings	
B	
A	
REV	REVISIONS

Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : S.M.W		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title

PLAN & PROFILE - HUNTB-7 & HUNTB-8

Scales Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-HUNT-001

HUNTB–10 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+205
Manhole No.	0+000.00		0+045.00		0+085.00		0+125.00		0+165.00			0+205.00
Ground Level	1578.24	1577.30	1576.64	1575.64	1574.19	1572.91	1571.45	1569.98	1568.43	1566.84	1565.30	1564.90
Invert Elevations	1575.01		1572.98	1572.98	1571.18	1571.18	1569.38	1567.38	1565.58	1565.58		1563.78
Pipe Data	S=4.5% L=45.0m		S=4.5% L=40.0m		S=4.5% L=40.0m		S=4.5% L=40.0m		S=4.5% L=40.0m			
Dia. & Material	DN 225mm Concrete											

HUNTB–11 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+210
Manhole No.	0+000.00		0+030.00		0+075.00		0+120.00		0+165.00			0+210.00
Ground Level	1579.16	1578.14	1577.13	1576.26	1575.09	1573.88	1572.56	1571.03	1569.46	1567.99	1567.17	1566.69
Invert Elevations	1576.25	1574.90	1574.90		1572.88	1572.88	1570.85	1568.85	1566.83	1566.83		1564.80
Pipe Data	S=4.5% L=30.0m		S=4.5% L=45.0m			S=4.5% L=45.0m		S=4.5% L=45.0m		S=4.5% L=45.0m		
Dia. & Material	DN 225mm Concrete											

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017
Name : B.M.O

Designed — Date
Name : S.M.W

Checked — Date
Name : S.M.W

Approved — Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - HUNTB-10 & HUNTB-11

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-HUNT-002

HUNTB–12 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+210
Manhole No.	0+000.00		0+030.00		0+075.00		0+120.00		0+165.00			0+210.00
Ground Level	1579.45	1578.48	1577.82	1577.44	1576.71	1575.40	1573.34	1572.03	1570.60	1569.01	1568.13	1567.65
Invert Elevations	1576.77	1575.42	1575.42	1573.39	1573.39	1571.37	1569.37	1567.34	1567.34	1565.32		
Pipe Data	S=4.5% L=30.0m		S=4.5% L=45.0m		S=4.5% L=45.0m		S=4.5% L=45.0m		S=4.5% L=45.0m			
Dia. & Material	DN 225mm Concrete											

HUNTB–13 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220
Manhole No.	0+000.00		0+040.00		0+085.00			0+130.00		0+175.00		0+220.00
Ground Level	1580.86	1579.86	1578.81	1577.86	1576.98	1575.97	1574.74	1573.46	1572.00	1570.58	1569.13	1567.23
Invert Elevations	1578.81	1577.01	1577.01	1574.98	1574.98	1572.96	1571.35	1569.44	1567.93	1565.91		
Pipe Data	S=4.5% L=40.0m		S=4.5% L=45.0m		S=4.5% L=45.0m			S=4.2% L=45.0m		S=4.5% L=45.0m		
Dia. & Material	DN 225mm Concrete											

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -HUNTB-12 & HUNTB-13

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-HUNT-003

HUNTC PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+369
Manhole No.	0+000.00		0+045.00			0+090.00		0+135.00		0+180.00		0+225.00			0+270.00		0+315.00		0+360.00	0+369.00
Ground Level	1581.14	1580.17	1579.27	1578.39	1577.12	1575.74	1574.39	1573.03	1571.71	1570.35	1568.88	1567.57	1566.27	1565.24	1563.69	1562.48	1561.86	1561.29	1560.56	1560.32
Invert Elevations	1578.43		1577.63	1575.63		1573.83	1573.83		1572.03	1570.03		1568.23	1566.23		1564.43	1564.43		1562.63	1562.63		1560.83	1560.83		1559.03	1559.03	1558.67
Pipe Data	S=4.0% L=45.0m			S=4.0% L=45.0m		S=4.0% L=45.0m		S=4.0% L=45.0m		S=4.0% L=45.0m		S=4.0% L=45.0m			S=4.0% L=45.0m		S=4.0% L=45.0m		S=4.0% L=45.0m	S=4.0% L=9.0m
Dia. & Material	DN 225mm Concrete																			

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - HUNTC

Scales Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-HUNT-003

LITS PLAN & PROFILE

Stations	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+056.56
Manhole No.	0+762.00	0+777.42	0+807.42		0+837.42	0+867.42		0+897.42	0+927.42		0+957.42	0+987.42		1+017.42		1+056.56
Ground Level	1564.48 1563.49	1559.60	1557.68	1556.35	1555.27	1553.49	1550.46	1547.36	1544.37	1541.57	1538.95	1537.51	1536.27	1535.29	1534.38	1534.82
Invert Elevations	1561.74 1560.75	1559.55	1559.01 1557.25	1556.20 1553.47	1552.42 1552.42	1551.37 1547.97	1546.76	1543.34	1542.29 1539.31		1538.26 1537.03	1535.98 1533.21		1532.16 1532.16		1530.78
Pipe Data	S=3.5% L=30.0m	S=3.5% L=15.4m	S=3.5% L=30.0m	S=3.5% L=30.0m	S=3.5% L=30.0m	S=4.0% L=30.0m	S=3.5% L=30.0m	S=3.5% L=30.0m	S=3.5% L=30.0m		S=3.5% L=30.0m	S=3.5% L=30.0m		S=3.5% L=39.1m		
Dia. & Material	DN 300mm Concrete															

LITS–10 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+201
Manhole No.	0+000.00	0+020.00			0+080.00		0+113.00		0+150.00	0+167.00		0+201.00
Ground Level	1572.50	1573.10	1573.17	1572.98	1572.77	1572.28	1571.69	1570.23	1566.68	1563.51	1562.63 1562.74	
Invert Elevations	1571.70	1571.20 1571.20		1570.45 1570.45		1569.70 1569.70		1568.88 1568.88		1567.40 1564.77	1564.09 1563.30	1561.94
Pipe Data	S=2.5% L=20.0m	S=2.5% L=30.0m	S=2.5% L=30.0m		S=2.5% L=33.0m		S=4.0% L=37.0m		S=4.0% L=17.0m	S=4.0% L=34.0m		
Dia. & Material	DN 300mm Concrete											

Reference Drawings			
B			
A			
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - LITS (1) & LITS 10

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-LITS-002

LITS PLAN & PROFILE

Stations	Manhole No.	Ground Level	Invert Elevations	Pipe Data
0+000	0+000.00	1586.59	1585.17	
0+020		1586.63		
0+040	0+037.00	1586.68	1584.61	S=1.5% L=37.0m
0+060		1586.70	1584.61	S=1.5% L=50.0m
0+080		1586.50	1583.86	
0+100	0+087.00	1586.36	1583.86	S=1.5% L=50.0m
0+120		1586.33		
0+140	0+137.00	1586.14	1583.11	S=1.5% L=50.0m
0+160		1586.11	1583.11	
0+180		1585.83	1582.36	
0+200	0+187.00	1585.32	1582.36	S=1.5% L=50.0m
0+220		1584.58		
0+240	0+237.00	1584.05	1581.61	S=1.5% L=50.0m
0+260		1583.62	1581.61	
0+280		1583.46	1580.86	
0+300	0+287.00	1583.34	1580.86	S=1.5% L=50.0m
0+320		1583.27		
0+340	0+337.00	1583.30	1580.11	S=1.5% L=50.0m
0+360		1583.48	1580.11	
0+380		1583.31	1579.36	
0+400	0+387.00	1583.04	1579.36	S=1.5% L=50.0m
0+420		1582.74		
0+440	0+437.00	1582.53	1578.61	S=1.5% L=40.0m
0+460		1582.05	1578.61	
0+480	0+477.00	1581.32	1578.01	S=3.5% L=40.0m
0+500		1580.55	1578.01	
0+520	0+517.00	1579.82	1576.61	S=3.5% L=40.0m
0+540		1579.11	1576.61	
0+560	0+557.00	1578.20	1575.21	S=3.5% L=25.0m
0+580	0+582.00	1577.20	1575.21	
0+600		1576.32	1574.34	S=3.5% L=30.0m
0+620	0+612.00	1575.60	1574.34	
0+640		1574.77	1573.29	S=3.5% L=30.0m
0+660	0+642.00	1573.50	1573.29	
0+680	0+672.00	1572.00	1572.24	S=3.5% L=30.0m
0+700		1570.36	1572.24	
0+720	0+702.00	1568.85	1571.19	S=3.5% L=30.0m
0+740	0+732.00	1566.44	1568.18	S=3.5% L=30.0m
0+758		1564.26	1567.13	S=3.5% L=30.0m
			1567.13	
			1566.08	
			1562.79	
			1561.74	

Dia. & Material: DN 300mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

Runji & Partners
SINCE 1984
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn: Date : MAY. 2017
Name : B.M.O

Designed: Date
Name : S.M.W

Checked: Date
Name : N.M

Approved: Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PLAN & PROFILE - LITS

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-LITS-001

LITS–17 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+544.56
Manhole Location	0+000.00			0+054.15		0+106.37		0+148.05			0+193.54		0+243.38		0+275.43		0+313.05			0+368.31		0+407.79		0+458.29			0+511.20		0+544.56
Original ground levels	1581.66	1581.71	1581.97	1582.31	1581.48	1581.12	1580.87	1580.38	1579.81	1579.48	1579.18	1578.92	1578.84	1579.02	1579.33	1579.76	1580.03	1580.15	1580.14	1580.00	1579.78	1579.47	1579.42	1579.37	1579.21	1579.05	1578.81	1578.46	1578.37
Invert Elevations	1579.62			1579.20 1579.20		1578.80 1578.80		1578.48 1578.48			1578.13 1578.13		1577.74 1577.74		1577.49 1577.49		1577.20 1577.20			1576.77 1576.77		1576.47 1576.47		1576.08 1576.08			1575.67 1575.67		1575.41
Slope %	S=0.8% L=54.2m			S=0.8% L=52.2m		S=0.8% L=41.7m		S=0.8% L=45.5m			S=0.8% L=49.8m		S=0.8% L=32.0m		S=0.8% L=37.6m		S=0.8% L=55.3m			S=0.8% L=39.5m		S=0.8% L=50.5m			S=0.8% L=52.9m			S=0.8% L=33.4m	
Pipe ø mm	DN 225mm Concrete																												

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - LTS - 17

Scales (A1) Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-LITS-003

LITS–17–2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+326.39
Manhole Location	0+000.00			0+057.97			0+117.97			0+168.08					0+272.47			0+326.39
Original ground levels	1584.69	1585.41	1585.19	1585.07	1584.96	1584.77	1584.40	1583.97	1583.51	1583.24	1582.66	1581.89	1581.13	1580.59	1580.16	1579.83	1579.49	1579.38
Invert Elevations	1583.40			1582.53	1582.53		1581.63	1581.63		1580.88	1580.88		1580.22	1580.22	1578.12	1578.12		1576.23
Slope %	S=1.5% L=58.0m			S=1.5% L=60.0m			S=1.5% L=50.1m			S=1.5% L=44.4m			S=3.5% L=60.0m			S=3.5% L=53.9m		
Pipe ø mm	DN300mm Concrete																	

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - LITS - 17-2

Scales (A1) Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-LITS-003

LITS–17–7 PLAN & PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1589.21	1588.00
0+020		1589.04	
0+040		1588.86	1587.40
0+060	0+050.00	1588.63	1587.40
0+080		1588.50	
0+100	0+100.00	1588.28	1586.80
0+120		1588.04	1586.80
0+140		1587.90	
0+160	0+150.00	1587.80	1586.20
0+180		1587.56	1586.20
0+200	0+199.00	1587.25	1585.61
0+220		1587.33	1585.61
0+240	0+244.00	1587.35	1585.07
0+260		1587.07	1585.07
0+280		1586.79	
0+300	0+294.00	1586.53	1584.47
0+320		1586.10	1584.47
0+340	0+344.00	1585.79	1583.87
0+360		1585.59	1583.87
0+380	0+387.00	1585.57	1583.36
0+400		1585.92	1583.36
0+420		1586.00	
0+440	0+439.00	1585.87	1582.73
0+460		1585.54	1582.73
0+480		1584.94	
0+500	0+492.00	1585.03	1582.10
0+520		1584.07	1582.10
0+540	0+528.00	1583.53	1581.66
0+560		1583.18	1581.66
0+580	0+565.00	1582.67	1580.78
0+600		1581.83	1580.78
0+620	0+605.00	1580.89	1579.82
0+640		1580.01	1579.82
0+660	0+645.00	1579.46	1578.86
0+680		1578.92	1578.86
0+685	0+685.00	1578.79	1577.90

Slope %	Pipe ø mm
S=1.2% L=50.0m	DN 225mm Concrete
S=1.2% L=50.0m	
S=1.2% L=50.0m	
S=1.2% L=49.0m	
S=1.2% L=45.0m	
S=1.2% L=50.0m	
S=1.2% L=50.0m	
S=1.2% L=43.0m	
S=1.2% L=52.0m	
S=1.2% L=53.0m	
S=1.2% L=36.0m	
S=2.4% L=37.0m	
S=2.4% L=40.0m	
S=2.4% L=40.0m	
S=2.4% L=40.0m	

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - LITS - 17 - 7

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-LITS-004

MWAC1 PLAN & PROFILE

Stations	Manhole No.	Ground Level	Invert Elevations	Pipe Data
0+000	0+000.00	1579.68	1578.60	
0+020		1579.36	1577.40	S=4.0% L=30.0m
0+040	0+030.00	1578.90	1577.40	S=4.0% L=30.0m
0+060	0+060.00	1578.05	1576.20	S=4.0% L=30.0m
0+080		1576.95	1576.20	S=4.0% L=35.0m
0+100	0+095.00	1576.02	1574.80	S=4.0% L=35.0m
0+120		1575.29	1574.80	S=4.0% L=20.0m
0+140	0+130.00	1574.71	1573.40	S=4.0% L=20.0m
0+160	0+150.00	1573.91	1572.60	S=4.0% L=50.0m
0+180		1572.41	1570.60	
0+200	0+200.00	1570.47	1568.60	
0+220	0+225.00	1569.25	1566.60	S=4.0% L=25.0m
0+240		1568.60	1565.60	S=4.0% L=30.0m
0+260	0+255.00	1567.41	1564.40	S=4.0% L=35.0m
0+280		1565.15	1564.40	
0+300	0+290.00	1563.86	1563.00	S=4.0% L=45.0m
0+320		1562.69	1561.50	
0+340	0+335.00	1561.37	1559.70	S=4.0% L=20.0m
0+360	0+355.00	1559.13	1557.70	S=4.0% L=30.0m
0+380	0+385.00	1557.35	1556.90	S=4.0% L=30.0m
0+400		1554.86	1556.90	
0+420	0+415.00	1553.20	1555.70	S=4.0% L=30.0m
0+440		1551.10	1553.70	
0+460	0+445.00	1548.79	1552.50	S=4.0% L=30.0m
0+480	0+475.00	1546.97	1550.50	S=4.0% L=30.0m
0+500		1545.23	1549.30	
0+520	0+505.00	1543.48	1547.30	S=4.0% L=30.0m
0+540	0+535.00	1541.89	1546.10	S=4.0% L=30.0m
0+560		1540.80	1544.60	
0+580	0+565.00	1537.29	1543.40	S=4.0% L=30.0m
0+600	0+585.00	1535.30	1541.40	S=4.0% L=20.0m
0+620		1534.16	1540.20	
0+640	0+635.00	1533.25	1540.20	S=4.0% L=50.0m
0+660		1532.40	1539.00	
0+680		1531.84	1536.50	S=4.0% L=50.0m
0+700	0+685.00	1531.56	1535.70	
0+720	0+725.02	1531.30	1534.70	
0+735	0+735.00	1531.59	1532.70	S=4.0% L=40.0m
			1532.70	
			1530.70	
			1530.70	
			1529.10	S=4.0% L=10.0m
			1529.10	
			1528.70	

Dia. & Material: DN 225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017
Name : B.M.O

Designed — Date
Name : S.M.W

Checked — Date
Name : N.M

Approved — Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - MWAC 1

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MWAC-001

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+110
Manhole Location	0+000.00		0+035.00		0+070.00		0+110.00
Original ground levels	1566.63	1565.73	1564.71	1563.78	1562.96	1562.23	1561.92
Invert Elevations	1564.35	1562.95	1562.95	1561.55	1561.55	1559.95	
Slope %	S=4.0% L=35.0m		S=4.0% L=35.0m		S=4.0% L=40.0m		
Pipe ø mm	DN 225mm Concrete						

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+150
Manhole Location	0+000.00			0+050.00		0+090.00		0+115.00	0+150.00
Original ground levels	1572.63	1572.94	1573.00	1573.34	1573.22	1572.78	1571.99	1570.92	1570.47
Invert Elevations	1571.75		1570.75	1570.75	1569.95	1569.95	1569.45	1569.45	1568.75
Slope %	S=2.0% L=50.0m		S=2.0% L=40.0m		S=2.0% L=25.0m		S=2.0% L=35.0m		
Pipe ø mm	DN 225mm Concrete								

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -MWAC1-13 & MWAC1 - 17

Scales Hor. 1:1000
Vert. 1:100

Drg No.
WS622-HUNTA1-001

MWAC2 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+488
Manhole No.	0+000.00	0+020.00		0+050.00		0+100.00	0+118.00	0+138.00	0+158.00	0+178.00	0+198.00	0+218.00	0+248.00		0+278.00		0+308.00	0+341.00		0+376.00		0+411.00		0+458.00		0+488.00
Ground Level	1561.73	1560.36	1558.54	1556.91	1556.07	1555.11	1552.95	1550.90	1548.98	1546.87	1544.74	1542.94	1541.78	1540.87	1538.70	1536.92	1536.79	1536.52	1534.65	1532.83	1532.02	1531.86	1531.96	1532.28	1532.04	1532.43
Invert Elevations	1558.12	1557.32 / 1557.32	1556.12 / 1554.12			1552.12 / 1552.12	1551.40 / 1549.40	1548.60 / 1546.60	1545.79 / 1545.79	1545.00 / 1543.00	1542.20 / 1542.20	1541.40 / 1539.40	1538.20 / 1538.20		1537.00 / 1535.00	1534.09 / 1534.09		1533.11 / 1533.11		1532.06 / 1532.06		1531.01 / 1531.01		1530.73 / 1530.73		1530.55
Pipe Data	S=4.0% L=20.0m	S=4.0% L=30.0m	S=4.0% L=50.0m			S=4.0% L=18.0m	S=4.0% L=20.0m	S=4.0% L=20.0m	S=4.0% L=20.0m	S=4.0% L=20.0m	S=4.0% L=20.0m	S=4.0% L=30.0m	S=4.0% L=30.0m		S=3.0% L=30.0m		S=3.0% L=33.0m	S=3.0% L=35.0m		S=3.0% L=35.0m		S=0.6% L=47.0m		S=0.6% L=30.0m	
Dia. & Material	DN 225mm Concrete																									

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name : S.M.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PLAN & PROFILE - MWAC 2

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-MWAC-002

MWAC3 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540
Manhole No.	0+000.00		0+040.00		0+070.00	0+100.00	0+110.00			0+170.00		0+220.00			0+270.00	0+292.00		0+342.00		0+377.00		0+422.00		0+452.00		0+487.00	0+515.00	0+540.00
Ground Level	1558.67	1557.87	1557.06	1555.27	1553.36	1552.03	1552.09	1551.63	1551.07	1550.64	1550.20	1549.79	1548.92	1547.86	1547.65	1547.70	1547.01	1546.36	1545.88	1545.49	1545.60	1544.08	1543.68	1543.68	1543.51	1542.91	1542.13	1542.70
Invert Elevations	1557.01		1555.81 1553.81		1552.91 1551.91	1551.00 1550.71	1551.00 1550.71			1548.91 1548.91		1547.66 1547.66		1546.41 1546.41	1545.86 1545.86			1544.61 1544.61		1543.73 1543.73		1542.61 1542.61		1541.86 1541.86		1540.98 1540.98	1540.28 1540.28	1539.66
Pipe Data	S=3.0% L=40.0m		S=3.0% L=30.0m		S=3.0% L=30.0m	S=3.0% L=10.0m	S=3.0% L=60.0m			S=2.5% L=50.0m		S=2.5% L=50.0m		S=2.5% L=22.0m	S=2.5% L=50.0m			S=2.5% L=35.0m		S=2.5% L=45.0m		S=2.5% L=30.0m		S=2.5% L=35.0m		S=2.5% L=28.0m	S=2.5% L=25.0m	
Dia. & Material	DN 225mm Concrete																											

MWAC3-7 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120
Manhole No.	0+000.00		0+040.00		0+080.00		0+120.00
Ground Level	1554.64	1553.31	1552.18	1551.67	1550.45	1549.25	1548.10
Invert Elevations	1550.20		1548.80 1548.80		1547.40 1547.40		1546.00
Pipe Data	S=3.5% L=40.0m		S=3.5% L=40.0m		S=3.5% L=40.0m		
Dia. & Material	DN 225mm Concrete						

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

Reference Drawings

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -MWAC 3 & MWAC 3 - 7

Scales Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-MWAMA-004

line MWAMA Ø225 pcc
line MWAMA-2 Ø225 pcc
MWAMA-2/1
MWAMA-2/2
MWAMA-2/3
MWAMA-2/4
MWAMA1-1
MWAMA1-2
MWAMA1-3
MWAMA1-4
MWAMA1-5
MWAMA1-6
MWAMA1-7
MWAMA1-8
MWAMA1-9
MWAMA1-10
MWAMA1-11
MWAMA1-12
MWAMA1-13
MWAMA1-14
MWAMA1-15
MWAMA1-16
MWAMA1-17
MWAMA1-18
MWAMA1-19
MWAMA1-20
MWAMA1-21
MWAMA1-22
MWAMA1-23
MWAMA1-24
MWAMA1-25
MWAMA1-26
MWAMA1-27
MWAMA1-28
MWAMA1-29
MWAMA1-30
MWAMA1-31
MWAMA1-32
MWAMA1-33
MWAMA1-34
MWAMA1-35
MWAMA1-36
MWAMA1-37
MWAMA1-38
MWAMA1-39
MWAMA1-40

MWAMA1–1 PLAN & PROFILE

Datum 1546

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+336
Manhole Location	0+000.00		0+040.00		0+080.00		0+120.00			0+180.00		0+225.00			0+270.00		0+310.00	0+336.00
Original ground levels	1555.52	1554.24	1553.36	1552.95	1552.16	1551.73	1551.84	1551.68	1551.74	1551.58	1551.71	1551.79	1551.70	1551.47	1551.23	1551.27	1551.30	1551.28
Invert Elevations	1551.68		1551.48 1551.48		1551.28 1551.28		1551.08 1551.08			1550.78 1550.78		1550.56 1550.56			1550.33 1550.33		1550.13 1550.13	1550.00
Slope %	S=0.5% L=40.0m		S=0.5% L=40.0m		S=0.5% L=40.0m			S=0.5% L=60.0m			S=0.5% L=45.0m		S=0.5% L=45.0m		S=0.5% L=40.0m		S=0.5% L=26.0m	
Pipe ø mm	DN 225mm Concrete																	

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017
Name : B.M.O

Designed — Date
Name : S.M.W

Checked — Date
Name : S.M.W

Approved — Date
Name : R.N

NAIROBI CITY WATER & SEWERAGE COMPANY
(NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

Date — DEPARTMENT HEAD

CONTRACT NO.

Rev

Date — Managing Director

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - MWAMA 1-1

Scales(A1)
Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-MWAMA-002

MWAMA–2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+136															
Manhole Location	0+000.00			0+050.00			0+096.00	0+106.00	0+136.00														
Original ground levels	1551.25	1550.40	1549.89	1549.75	1549.47	1549.16	1548.88	1548.64															
Invert Elevations	1548.80			1548.30	1548.30		1547.84	1547.84	1547.74	1547.74	1547.44												
Slope %	S=1.0% L=50.0m			S=1.0% L=46.0m		S=1.0% L=10.0m		S=1.0% L=30.0m															
Pipe ø mm	DN 225mm Concrete																						

MWAMA2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+250									
Manhole Location	0+000.00			0+050.00			0+100.00			0+150.00			0+200.00			0+250.00							
Original ground levels	1558.90	1557.80	1556.39	1555.57	1554.23	1553.55	1553.76	1553.44	1552.92	1552.64	1552.63	1552.40	1552.18	1552.34									
Invert Elevations	1555.36			1553.86	1553.86		1552.36	1552.36			1551.86	1551.86			1551.36	1551.36			1550.86				
Slope %	S=3.0% L=50.0m			S=3.0% L=50.0m			S=1.0% L=50.0m			S=1.0% L=50.0m			S=1.0% L=50.0m										
Pipe ø mm	DN 225mm Concrete																						

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Designed — Date — Name : S.M.W
Checked — Date — Name : S.M.W
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - MWAMA -2 & MWAMA 2

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MWAMA-001

MWAMA3 PLAN & PROFILE

Datum 1548

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420
Manhole Location	0+000.00		0+035.00		0+080.00			0+130.00		0+180.00		0+218.00		0+260.00		0+300.00		0+340.00		0+380.00		0+420.00
Original ground levels	1567.98	1565.78	1563.83	1563.77	1563.71	1563.20	1562.66	1562.28	1561.67	1560.69	1559.86	1559.04	1557.82	1556.51	1555.58	1555.04	1554.13	1552.27	1553.68	1553.27	1552.78	1552.45
Invert Elevations	1563.60		1562.55 1562.55		1561.20 1561.20			1559.70 1559.70		1558.20 1558.20		1556.59 1556.59		1554.82 1554.82		1553.12 1553.12		1551.93 1551.93		1551.53 1551.53		1551.12
Slope %	S=3.0% L=35.0m		S=3.0% L=45.0m		S=3.0% L=50.0m			S=3.0% L=50.0m		S=4.2% L=38.0m		S=4.2% L=42.0m		S=4.2% L=40.0m		S=3.0% L=40.0m		S=1.0% L=40.0m		S=1.0% L=40.0m		
Pipe ø mm	DN 225mm Concrete																					

MWAC3-6 PLAN & PROFILE

Datum 1544

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+130
Manhole No.	0+000.00			0+050.00		0+090.00		0+130.00
Ground Level	1550.67	1549.65	1549.01	1547.78	1546.13	1546.01	1546.28	1546.34
Invert Elevations	1547.05			1545.55 1545.55		1545.15 1545.15		1544.75
Pipe Data		S=3.0% L=50.0m			S=1.0% L=40.0m		S=1.0% L=40.0m	
Dia. & Material	DN 225mm Concrete							

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - MWAMA 3 & MWAC 3 - 6

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MWAMA-003

MWAMB PLAN & PROFILE

MWAMB PLAN & PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations	Slope %	Pipe ø mm
0+000	0+000.00	1548.00	1545.86		DN 300mm Concrete
0+020		1548.44		S=1.8% L=58.6m	
0+040		1548.90			
0+060	0+058.57	1549.12	1544.78 / 1544.78	S=2.0% L=53.0m	
0+080		1548.67			
0+100		1547.17			
0+120	0+111.57	1546.67	1543.72 / 1543.72	S=2.0% L=43.0m	
0+140		1546.40			
0+160	0+154.57	1545.78	1542.86 / 1542.86	S=2.0% L=45.0m	
0+180		1544.34			
0+200	0+199.57	1543.31	1541.96 / 1541.96	S=2.0% L=45.0m	
0+220		1543.31			
0+240	0+244.57	1544.12	1541.06 / 1541.06	S=2.0% L=55.0m	
0+260		1543.92			
0+280		1543.43			
0+300	0+299.57	1543.01	1539.96 / 1539.96	S=2.0% L=45.0m	
0+320		1543.15			
0+340	0+344.57	1542.63	1539.06 / 1539.06	S=2.0% L=57.0m	
0+360		1541.85			
0+380		1541.43			
0+400	0+401.57	1541.54	1537.92 / 1537.92	S=3.0% L=30.0m	
0+420		1540.18			
0+440	0+431.57	1538.64	1537.02 / 1537.02	S=3.0% L=60.0m	
0+460		1537.99			
0+480		1538.30			
0+500	0+491.57	1537.64	1535.22 / 1535.22	S=2.0% L=40.0m	
0+520		1535.86			
0+540	0+531.57	1535.57	1534.42 / 1534.42	S=2.0% L=60.0m	
0+560		1535.85			
0+580		1536.32			
0+600	0+591.57	1535.66	1533.22 / 1533.22	S=3.0% L=20.0m	
0+620	0+611.57	1533.35	1532.62 / 1532.62	S=3.0% L=40.0m	
0+640		1532.66			
0+660	0+651.57	1532.35	1531.42 / 1531.42	S=3.0% L=52.0m	
0+680		1531.84			
0+700	0+703.57	1531.34	1529.86 / 1529.86	S=3.0% L=48.0m	
0+720		1530.58			
0+740	0+751.57	1529.95	1528.42 / 1528.42	S=3.0% L=60.0m	
0+758		1529.25	1526.62		

Chainage	Manhole Location	Original ground levels	Invert Elevations	Slope %	Pipe ø mm
0+758		1529.25	1528.42		DN 300mm Concrete
0+760		1528.68		S=3.0% L=60.0m	
0+780		1528.31			
0+800	0+811.57	1528.20	1526.62 / 1526.62	S=3.0% L=45.0m	
0+820		1526.92			
0+840	0+856.57	1526.83	1525.27 / 1525.27	S=3.0% L=20.0m	
0+860		1526.86	1524.67		
0+872					

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -MWAMB

Scales(A1)
Hor. 1:1000
Vert. 1:100

Drg No.
WS622-L1-MWAMA-005

MWAMB1 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160
Manhole Location	0+856.57			0+856.57		0+856.57		0+856.57	0+856.57
Original ground levels	1528.84	1528.78	1528.70	1528.53	1528.33	1527.93	1527.12	1526.90	1527.25
Invert Elevations	1527.46			1526.71 1526.71		1525.96 1525.96		1525.21 1525.21 1525.06	
Slope %	S=1.5% L=50.0m		S=1.5% L=50.0m			S=1.5% L=50.0m		S=1.5% L=10.0m	
Pipe ø mm	DN 225mm Concrete								

MWAMB−2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+235
Manhole Location	0+000.00		0+040.00			0+093.00		0+138.00			0+191.00		0+235.00
Original ground levels	1530.66	1530.50	1530.64	1530.08	1530.37	1529.93	1528.60	1528.70	1528.66	1528.63	1528.24	1528.05	1528.10
Invert Elevations	1528.23		1527.99 1527.99			1527.67 1527.67		1527.40 1527.40			1527.08 1527.08		1526.82
Slope %	S=0.6% L=40.0m		S=0.6% L=53.0m		S=0.6% L=45.0m			S=0.6% L=53.0m			S=0.6% L=44.0m		
Pipe ø mm	DN225mm Concrete												

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Checked — Date — Name : S.M.W

Designed — Date — Name : S.M.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PLAN & PROFILE - MWAMB 1 & MWAMB - 2

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-MWAMA- 006

MWAMB–6 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+258
Manhole Location	0+000.00		0+040.00		0+075.00		0+122.00			0+177.00		0+225.00		0+258.00
Original ground levels	1543.03	1543.77	1544.02	1543.26	1542.34	1542.50	1541.03	1540.32	1540.05	1539.69	1538.64	1538.64	1537.74	1536.52
Invert Elevations	1541.87		1540.87 1540.87		1539.99 1539.99		1538.82 1538.82			1537.44 1537.44		1536.24 1536.24		1535.40
Slope %	S=2.5% L=40.0m		S=2.5% L=35.0m		S=2.5% L=47.0m			S=2.5% L=55.0m			S=2.5% L=48.0m		S=2.5% L=33.0m	
Pipe ø mm	DN225mm Concrete													

MWAMB–7 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+318
Manhole No.	0+000.00			0+050.00		0+085.00		0+125.00		0+163.00		0+198.00		0+228.00		0+268.00		0+318.00
Ground Level	1546.23	1545.32	1544.17	1542.07	1539.88	1539.63	1539.28	1539.20	1539.07	1538.85	1538.96	1538.00	1537.47	1536.82	1535.52	1534.44	1535.53
Invert Elevations	1543.01		1541.51 1539.83		1538.78 1538.78		1537.58 1537.58		1536.82 1536.82		1536.12 1536.12		1535.52 1535.52		1535.12 1535.12		1534.62
Pipe Data	S=3.0% L=50.0m			S=3.0% L=35.0m		S=3.0% L=40.0m		S=2.0% L=38.0m		S=2.0% L=35.0m		S=2.0% L=30.0m		S=1.0% L=40.0m		S=1.0% L=50.0m	
Dia. & Material	DN 225mm Concrete																

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Checked — Date — Name : S.M.W
Designed — Date — Name : S.M.W
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - MWAMB - 6 & MWAMB - 7

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MWAMA-007

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1546.14	1543.86
0+020		1545.67	
0+040	0+040.00	1545.21	1542.66 / 1542.66
0+060		1544.77	
0+080		1543.78	
0+100	0+090.00	1542.49	1541.16 / 1541.16
0+120		1542.30	
0+140	0+140.00	1543.02	1540.16

Slope % — S=3.0% L=40.0m; S=3.0% L=50.0m; S=2.0% L=50.0m

Pipe ø mm — DN225mm Concrete

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1548.42	1546.38
0+020		1547.83	
0+040		1547.24	
0+060	0+050.00	1546.69	1545.65 / 1545.65
0+080		1546.41	
0+100	0+100.00	1546.72	1544.93 / 1544.93
0+120		1547.19	
0+140		1546.92	
0+160	0+151.00	1546.05	1544.19 / 1544.19
0+180		1545.52	1543.64 / 1543.64
0+200	0+189.00	1545.22	
0+220	0+224.00	1545.68	1543.13 / 1543.13
0+240		1545.38	
0+260	0+266.00	1545.26	1542.52 / 1542.52
0+280		1545.03	
0+300	0+306.00	1544.07	1541.94 / 1541.94
0+320		1542.80	
0+340		1543.48	
0+353	0+353.00	1544.14	1541.26

Slope % — S=1.5% L=50.0m; S=1.5% L=50.0m; S=1.4% L=51.0m; S=1.5% L=38.0m; S=1.4% L=35.0m; S=1.5% L=42.0m; S=1.5% L=40.0m; S=1.4% L=47.0m

Pipe ø mm — DN225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984 Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Designed — Date — Name : S.M.W
Checked — Date — Name : N.M
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - MWAMB - 12 & MWAMB - 13

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MWAMA-008

MWAMB–17 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+303
Manhole Location	0+000.00		0+045.00			0+095.00		0+133.00		0+173.00	0+203.00			0+253.00			0+303.00
Original ground levels	1552.79	1551.60	1550.99	1550.62	1549.66	1549.91	1549.36	1549.37	1549.13	1548.44	1547.99	1547.24	1547.39	1547.58	1548.24	1547.98	1548.00
Invert Elevations	1549.50		1548.83 / 1548.83			1548.08 / 1548.08		1547.51 / 1547.51		1546.91 / 1546.91	1546.46 / 1546.46			1546.16 / 1546.16			1545.86
Slope %	S=1.5% L=45.0m		S=1.5% L=50.0m			S=1.5% L=38.0m		S=1.5% L=40.0m		S=1.5% L=30.0m		S=0.6% L=50.0m			S=0.6% L=50.0m		
Pipe ø mm	DN225mm Concrete																

MWAMB2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+178
Manhole Location	0+000.00		0+050.00			0+105.00			0+160.00	0+178.00
Original ground levels	1546.83	1546.74	1546.30	1546.14	1546.25	1546.48	1546.20	1545.32	1544.32	1543.53
Invert Elevations	1545.85		1544.85 / 1544.85			1543.75 / 1543.75			1542.65 / 1542.65	1542.29
Slope %	S=2.0% L=50.0m		S=2.0% L=55.0m			S=2.0% L=55.0m			S=2.0% L=18.0m	
Pipe ø mm	DN225mm Concrete									

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name : S.M.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PLAN & PROFILE - MWAMB - 17 & MWAMB 2

Scales: Hor. 1:1000 — Vert. 1:100

Drg No. WS622-L1-MWAMB-09

UMAA1 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+304
Manhole Location	0+000.00		0+045.00			0+095.00			0+155.00		0+197.00		0+237.00		0+264.00		0+304.00
Original ground levels	1546.06	1546.53	1546.72	1546.79	1546.95	1546.68	1546.42	1546.05	1545.57	1545.11	1544.35	1543.61	1542.90	1542.62	1542.28	1541.74	1541.89
Invert Elevations	1545.06		1544.35 / 1544.35			1543.60 / 1543.60			1542.70 / 1542.70		1541.85 / 1541.85		1541.06 / 1541.06	1540.52 / 1540.52			1539.72
Slope %	S=1.6% L=45.0m		S=1.5% L=50.0m			S=1.5% L=60.0m			S=2.0% L=42.0m		S=2.0% L=40.0m		S=2.0% L=27.0m		S=2.0% L=40.0m		
Pipe Ø mm	DN 225mm Concrete																

UMAA2 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220
Manhole Location	0+000.00			0+050.00		0+100.00		0+140.00		0+180.00		0+220.00
Original ground levels	1551.07	1550.70	1549.97	1549.54	1549.21	1548.74	1547.99	1547.27	1547.34	1546.98	1546.71	1546.92
Invert Elevations	1549.92			1548.67 / 1548.67		1547.42 / 1547.42		1546.42 / 1546.42		1545.42 / 1545.42		1544.42
Slope %	S=2.5% L=50.0m			S=2.5% L=50.0m		S=2.5% L=40.0m		S=2.5% L=40.0m		S=2.5% L=40.0m		
Pipe Ø mm	DN 225mm Concrete											

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Checked — Date — Name :
Designed — Date — Name : S.M.W
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - UMAA 1 & UMAA 2

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-UMAA-001

UMAD3 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180
Manhole No.	0+000.00		0+040.00		0+080.00		0+120.00		0+165.00	0+180.00
Ground Level	1542.37	1541.04	1539.16	1536.85	1535.51	1533.95	1531.53	1529.92	1529.31	1529.72
Invert Elevations	1538.60		1536.80 1534.80		1533.00 1531.20		1529.40 1529.40		1527.38 1527.38	1526.70
Pipe Data	S=4.5% L=40.0m		S=4.5% L=40.0m		S=4.5% L=40.0m		S=4.5% L=45.0m		S=4.5% L=15.0m	
Dia. & Material	DN 225mm Concrete									

UMAD3-1 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+177
Manhole No.	0+000.00		0+030.00	0+060.00		0+100.00		0+140.00		0+177.00
Ground Level	1542.37	1541.07	1538.96	1536.92	1535.50	1533.26	1530.35	1529.89	1529.55	1529.16
Invert Elevations	1539.38	1538.33 1536.32		1535.27 1533.27		1531.88 1529.84		1528.64 1528.64		1527.53
Pipe Data	S=3.5% L=30.0m		S=3.5% L=30.0m		S=3.5% L=40.0m		S=3.0% L=40.0m		S=3.0% L=37.0m	
Dia. & Material	DN 225mm Concrete									

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name : N.M

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PLAN & PROFILE - UMAD 3 & UMAD 3-1

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-UMAD-001

UMAD1 PLAN & PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00		0+200.00
Original ground levels	1525.87	1525.66	1525.52	1525.66	1525.76	1525.82	1525.97	1526.03	1525.79	1525.26	1525.76
Invert Elevations	1524.93		1524.52	1524.52		1524.11	1524.11	1523.71	1523.71		1523.30
Slope %	S=0.8% L=50.0m			S=0.8% L=50.0m		S=0.8% L=50.0m			S=0.8% L=50.0m		
Pipe ø mm	DN 225mm Concrete										

UMAD2 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+210
Manhole No.	0+000.00		0+025.00			0+055.00		0+105.00		0+145.00	0+195.00	0+210.00
Ground Level	1540.76	1539.22	1536.50	1534.69	1534.95	1533.85	1532.17	1529.93	1529.17	1529.24	1527.86	1528.84
Invert Elevations	1536.35	1535.47	1533.97	1532.92	1532.92	1531.17	1529.67	1528.28	1528.28		1526.53	1526.53	1526.00
Pipe Data	S=3.5% L=25.0m		S=3.5% L=30.0m	S=3.5% L=50.0m			S=3.5% L=40.0m		S=3.5% L=50.0m			S=3.5% L=15.0m
Dia. & Material	DN 225mm Concrete											

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - UMAD 1 & UMAD 2

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-UMAD-001

UMAD4 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+170
Manhole No.	0+000.00		0+040.00		0+080.00			0+130.00		0+170.00
Ground Level	1541.62	1539.18	1536.82	1534.56	1531.95	1530.81	1530.35	1529.93	1529.50	1529.34
Invert Elevations	1537.13		1535.29 1532.79		1530.95 1530.21			1528.71 1528.71		1527.51
Pipe Data	S=4.6% L=40.0m		S=4.6% L=40.0m		S=3.0% L=50.0m			S=3.0% L=40.0m		
Dia. & Material	DN 225mm Concrete									

UMAD4–1 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+190.75
Manhole No.	0+000.00			0+060.75		0+100.75			0+150.75		0+190.75
Ground Level	1541.62	1540.97	1538.99	1536.22	1534.06	1532.21	1530.96	1530.81	1530.60	1530.30	1530.12
Invert Elevations	1537.68			1534.95 1532.95		1531.15 1530.21			1529.46 1529.46		1528.86
Pipe Data	S=4.5% L=60.8m			S=4.5% L=40.0m		S=1.5% L=50.0m			S=1.5% L=40.0m		
Dia. & Material	DN 225mm Concrete										

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name :

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PLAN & PROFILE - UMAD 4 & UMAD 4 - 1

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-UMAD-002

UMAD5 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+205
Manhole No.	0+000.00		0+035.00		0+075.00		0+115.00		0+155.00		0+195.00	0+205.00
Ground Level	1542.45	1540.60	1538.90	1537.30	1535.67	1533.69	1531.76	1531.42	1531.13	1530.99	1531.21	1531.46
Invert Elevations	1539.44	1537.86	1535.91	1533.95	1531.88	1530.88	1530.88	1529.88	1529.88	1528.88	1528.88	1528.63
Pipe Data	S=4.5% L=35.0m		S=4.9% L=40.0m		S=2.5% L=40.0m		S=2.5% L=40.0m		S=2.5% L=40.0m		S=2.5% L=10.0m	
Dia. & Material	DN 225mm Concrete											

UMAD5-1 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+225
Manhole No.	0+000.00		0+040.00		0+080.00		0+120.00		0+160.00		0+200.00		
Ground Level	1541.43	1540.09	1538.68	1536.76	1535.34	1533.93	1532.63	1531.79	1531.45	1531.30	1531.35	1531.09	1530.95
Invert Elevations	1537.81	1536.01	1536.01	1534.21	1532.93	1531.13	1531.13	1530.33	1530.33	1529.53	1529.53	1529.03	
Pipe Data	S=4.5% L=40.0m		S=4.5% L=40.0m		S=4.5% L=40.0m		S=2.0% L=40.0m		S=2.0% L=40.0m		S=2.0% L=25.0m		
Dia. & Material	DN 225mm Concrete												

UMAD6 PLAN & PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+190
Manhole No.	0+000.00			0+055.00		0+100.00		0+140.00			0+190.00
Ground Level	1540.30	1539.82	1539.29	1537.58	1535.79	1534.32	1533.17	1532.38	1531.94	1531.70	1532.28
Invert Elevations	1538.91			1536.71	1534.87	1533.07	1533.07	1531.47	1531.47		1529.47
Pipe Data	S=4.0% L=55.0m			S=4.0% L=45.0m		S=4.0% L=40.0m		S=4.0% L=50.0m			
Dia. & Material	DN 225mm Concrete										

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Checked — Date — Name :

Designed — Date — Name : S.M.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - UMAD 5 & UMAD 5 - 1 & UMAD 6

Scales(A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-UMAD-003

UMAE PLAN & PROFILE

Stations	Manhole No.	Ground Level	Invert Elevations	Pipe Data	Dia. & Material
0+000	0+000.00	1545.33	1543.58	S=2.5% L=25.0m	DN 225mm Concrete
0+020	0+025.00	1545.31	1542.96	S=2.5% L=50.0m	
0+040		1545.28	1542.96		
0+060		1545.03			
0+080	0+075.00	1544.37	1541.71	S=1.0% L=50.0m	
0+100		1543.05	1541.71		
0+120		1542.24			
0+140	0+125.00	1542.31	1541.21	S=1.0% L=50.0m	
0+160		1542.31	1541.21		
0+180	0+175.00	1543.43	1540.71	S=1.0% L=50.0m	
0+200		1544.45	1540.71		
0+220	0+225.00	1545.08	1540.21	S=4.0% L=50.0m	
0+240		1544.71	1540.21		
0+260		1543.05			
0+280	0+275.00	1542.38	1538.21	S=4.0% L=50.0m	
0+300		1541.11	1538.21		
0+320	0+325.00	1539.56	1536.21	S=4.0% L=50.0m	
0+340		1539.02	1536.21		
0+360		1538.10			
0+380	0+375.00	1536.75	1534.21	S=4.0% L=50.0m	
0+400		1535.81	1534.21		
0+420		1534.87			
0+440	0+425.00	1533.36	1532.21	S=4.0% L=42.0m	
0+460		1531.92	1532.21		
0+480	0+467.00	1530.98	1530.53	S=2.5% L=49.0m	
0+500		1529.81	1529.03		
0+520	0+516.00	1529.10	1527.80	S=2.5% L=31.0m	
0+540		1528.37	1527.80		
0+560	0+547.00	1527.71	1527.03	S=2.5% L=50.0m	
0+580		1527.23	1527.03		
0+600	0+597.00	1526.82	1525.78	S=2.5% L=50.0m	
0+620		1526.45	1525.78		
0+640		1526.11			
0+660	0+647.00	1525.72	1524.53	S=2.5% L=50.0m	
0+680		1525.57	1524.53		
0+697	0+697.00	1526.69	1523.28		

Reference Drawings			
B			
A			
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE -UMAE

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-UMAE-001

UMAE–6 PLAN & PROFILE

Datum 1532

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+487
Manhole No.	0+000.00		0+045.00			0+093.00			0+143.00			0+193.00			0+243.00			0+293.00			0+343.00			0+384.00		0+424.00			0+457.00			0+487.00
Ground Level	1547.42	1547.31	1546.88	1546.90	1546.87	1546.75	1546.69	1547.04	1547.22	1546.94	1545.74	1544.49	1544.09	1543.87	1543.53	1542.63	1541.26	1541.13	1540.74	1540.34	1539.80	1538.90	1537.46	1536.27	1535.15	1534.77
Invert Elevations	1546.32		1545.73	1545.73		1545.11	1545.11	1544.46	1544.46		1543.81	1543.81	1542.31	1542.31		1540.81	1540.81	1539.31	1539.31	1538.08	1538.08	1536.88	1534.88	1533.56	1533.56	1532.36
Pipe Data	S=1.3% L=45.0m			S=1.3% L=48.0m			S=1.3% L=50.0m			S=1.3% L=50.0m			S=3.0% L=50.0m			S=3.0% L=50.0m			S=3.0% L=50.0m			S=3.0% L=41.0m			S=3.0% L=40.0m			S=4.0% L=33.0m			S=4.0% L=30.0m	
Dia. & Material	DN 225mm Concrete																									

UMAE1 PLAN & PROFILE

Datum 1520

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+145
Manhole Location	0+000.00		0+045.00			0+095.00			0+145.00
Original ground level	1529.81	1529.19	1528.06	1527.35	1526.81	1526.55	1526.15	1525.51	1526.88
Invert Elevations	1527.93		1526.56	1526.56		1525.08	1525.08	1523.58	
Slope %	S=3.0% L=45.0m			S=3.0% L=50.0m			S=3.0% L=50.0m		
Pipe ø mm	DN 225mm Concrete								

UMAE.4 Depth=1.732
UMAE.3 Depth=1.732
UMAE.2 Depth=1.732
UMAE.1 Depth=1.732
UMAE.0 Depth=3.413

Reference Drawings			
B			
A			
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Checked Date
Name : S.M.W

Designed Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PLAN & PROFILE - UMAE - 6 & UMAE 1

Scales Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-UMAE-002

Reference Drawings					

Stations	Manhole No.	Ground Level	Invert Elevations	Pipe Data
0+000	0+000.00	1546.73	1546.58	
0+020		1546.41		
0+040	0+042.00	1546.22	1543.95 / 1543.95	S=1.5% L=42.0m
0+060		1546.15		
0+080	0+081.00	1545.97	1543.37 / 1543.37	S=1.5% L=39.0m
0+100		1545.99		
0+120	0+119.00	1546.10	1542.80 / 1542.80	S=1.5% L=38.0m
0+140		1545.78		
0+160	0+158.00	1545.79	1542.21 / 1542.21	S=1.5% L=39.0m
0+180		1545.57		
0+200	0+197.00	1545.57	1541.63 / 1541.63	S=1.5% L=39.0m
0+220		1545.56		
0+240	0+237.00	1545.48	1541.03 / 1541.03	S=1.5% L=40.0m
0+260		1545.50		
0+280	0+279.00	1544.90	1540.40 / 1540.40	S=1.5% L=42.0m
0+300		1544.65		
0+320	0+318.00	1544.40	1539.81 / 1539.81	S=1.5% L=39.0m
0+340		1543.83		
0+360	0+356.93	1543.35	1539.23 / 1539.23	S=1.5% L=39.0m
0+380		1542.47		
0+400	0+388.25	1541.69	1538.76 / 1538.76	S=1.5% L=31.0m
0+420	0+413.25	1541.82	1538.14 / 1538.14	S=2.5% L=25.0m
0+440		1542.33		
0+460	0+453.80	1541.82	1537.13 / 1537.13	S=2.5% L=40.5m
0+480		1540.77		
0+500	0+493.80	1539.33	1536.13 / 1536.13	S=2.5% L=40.0m
0+520		1538.69		
0+540	0+543.80	1537.01	1534.88 / 1534.88	S=2.5% L=50.0m
0+560		1536.11		S=2.5% L=55.0m
0+580		1535.58		
0+600	0+598.80	1536.14	1533.50 / 1533.50	S=2.5% L=30.0m
0+620		1535.10		
0+640	0+628.80	1534.33	1532.75 / 1532.75	S=2.5% L=35.0m
0+660		1534.19		
0+680	0+663.80	1533.45	1531.88 / 1531.88	S=2.5% L=33.7m
0+700		1532.53		
0+720	0+697.46	1533.08	1531.03 / 1531.03	S=2.5% L=27.9m
0+740	0+725.39	1529.54	1530.33 / 1528.75	S=2.5% L=15.0m
0+755.14	0+740.39	1525.93	1528.38 / 1525.38	S=2.5% L=15.0m
			1525.00	

Dia. & Material: DN 375mm Concrete

Reference Drawings			
B			
A			
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.W		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - MP2

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-MP2-001

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+262
Manhole Location	0+000.00		0+035.00		0+080.00		0+125.00			0+175.00		0+212.00			0+262.00
Original ground levels	1536.00	1535.04	1534.14	1533.28	1532.49	1532.17	1532.08	1532.56	1532.94	1533.26	1533.37	1533.34	1533.08	1533.42	1533.04
Invert Elevations	1532.08		1531.87 / 1531.87		1531.60 / 1531.60		1531.33 / 1531.33			1531.03 / 1531.03		1530.81 / 1530.81			1530.51
Slope %	S=0.6% L=35.0m		S=0.6% L=45.0m		S=0.6% L=45.0m		S=0.6% L=50.0m			S=0.6% L=37.0m		S=0.6% L=50.0m			
Pipe ø mm	DN 225mm Concrete														

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+249
Manhole Location	0+000.00		0+043.74			0+093.74		0+143.74			0+193.74		0+243.74	0+249.74
Original ground levels	1542.09	1540.51	1540.38	1540.14	1540.11	1538.90	1537.59	1536.50	1536.34	1536.21	1536.50	1536.27	1535.04	1534.11
Invert Elevations	1539.62		1538.31 / 1538.31			1536.81 / 1536.81		1535.31 / 1535.31			1533.81 / 1533.81		1532.31 / 1532.13	
Slope %	S=3.0% L=43.7m		S=3.0% L=50.0m			S=3.0% L=50.0m		S=3.0% L=50.0m			S=3.0% L=50.0m		S=3.0% L=6.0m	
Pipe ø mm	DN225mm Concrete													

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name : N.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - MP2 02 & MP2 - 04

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-MP2-002

MP2–06 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320
Manhole Location			0+040.09		0+079.94		0+114.94		0+164.94			0+214.94		0+264.94		0+304.94	0+316.94
Original ground levels	1547.19	1546.64	1546.59	1546.66	1545.75	1544.10	1541.92	1540.78	1540.19	1539.94	1539.69	1539.94	1539.98	1539.64	1538.30	1537.68	
Invert Elevations	1544.93		1543.32 1543.32		1541.73 1541.73		1540.33 1540.33		1539.08 1539.08			1537.83 1537.83		1535.83 1535.83		1534.23 1534.23 1533.75	
Slope %	S=4.0% L=40.1m		S=4.0% L=39.9m		S=4.0% L=35.0m		S=2.5% L=50.0m		S=2.5% L=50.0m			S=4.0% L=50.0m		S=4.0% L=40.0m		S=4.0% L=12.0m	
Pipe ø mm	DN225mm Concrete																

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name : N.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - MP2 -06

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-MP2-003

MP2–08 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+442
Manhole Location	0+000.00			0+050.00			0+105.00			0+160.00			0+215.00			0+270.00		0+325.00			0+380.00			0+435.00	0+442.00
Original ground levels	1549.47	1549.51	1548.80	1548.52	1548.76	1548.45	1547.84	1546.69	1545.70	1544.70	1544.01	1542.98	1542.70	1543.58	1543.97	1543.50	1542.85	1542.69	1541.93	1541.49	1541.28	1541.08	1540.81	1539.81
Invert Elevations	1547.99			1546.49	1546.49		1544.84	1544.84		1543.19	1543.19		1542.09	1542.09		1540.99	1540.99		1539.89	1539.89		1538.24	1538.24		1536.59	1536.59	1536.38
Slope %	S=3.0% L=50.0m			S=3.0% L=55.0m			S=3.0% L=55.0m			S=2.0% L=55.0m			S=2.0% L=55.0m			S=2.0% L=55.0m			S=3.0% L=55.0m			S=3.0% L=55.0m			S=3.0% L=7.0m	
Pipe ø mm	DN225mm Concrete																							

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 -08

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-004

MP2–10 PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1548.15	1546.81
0+020		1547.36	
0+040		1547.08	
0+050.00			1546.06
0+060		1547.28	1546.06
0+080		1547.00	
0+100		1546.47	1545.23
0+105.00			1545.23
0+120		1546.95	
0+140		1546.66	
0+160		1546.35	1544.41
0+160.00			1544.41
0+180		1545.86	
0+200		1545.57	
0+215.00			1543.58
0+220		1545.27	1543.58
0+240		1545.60	
0+260		1545.81	
0+270.00			1542.76
0+280		1545.93	1542.76
0+300		1545.64	
0+320		1545.04	1541.93
0+325.00			1541.93
0+340		1544.45	
0+360		1544.32	
0+380		1544.49	1541.10
0+380.00			1541.10
0+400		1544.17	
0+420		1543.61	
0+435.00			1540.28
0+440		1543.46	1540.28
0+460		1543.31	
0+480		1542.99	1538.63
0+490.00			1538.63
0+498	0+498.00	1541.86	1538.39

Slope %	
S=1.5% L=50.0m	
S=1.5% L=55.0m	
S=1.5% L=55.0m	
S=1.5% L=55.0m	
S=1.5% L=55.0m	
S=1.5% L=55.0m	
S=1.5% L=55.0m	
S=1.5% L=55.0m	
S=3.0% L=55.0m	
S=3.0% L=8.0m	

Pipe ø mm: DN225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O
Checked Date
Name : N.W

Designed Date
Name : S.M.W
Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 10

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-004

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1548.11	1545.51
0+020		1547.79	
0+040	0+040.00	1547.51	1545.11 1545.11
0+060		1547.11	
0+080	0+080.00	1546.50	1544.71 1544.71
0+100		1545.71	
0+120		1546.21	
0+140	0+135.00	1547.05	1544.16 1544.16
0+160		1546.69	
0+180		1546.85	
0+200	0+190.00	1546.62	1543.61 1543.61
0+220		1546.85	
0+240	0+245.00	1546.82	1543.06 1543.06
0+260		1546.36	
0+280		1546.17	
0+300	0+300.00	1546.16	1542.51 1542.51
0+320		1545.87	
0+340		1545.09	
0+360	0+355.00	1544.65	1541.96 1541.96
0+380		1544.74	
0+400		1544.80	
0+420	0+410.00	1544.35	1541.13 1541.13
0+440		1544.21	
0+460	0+465.00	1543.90	1540.31 1540.31
0+480		1543.68	
0+500		1543.88	
0+520	0+520.00	1543.42	1539.48

Slope %	
S=1.0% L=40.0m	0+000 – 0+040
S=1.0% L=40.0m	0+040 – 0+080
S=1.0% L=55.0m	0+080 – 0+135
S=1.0% L=55.0m	0+135 – 0+190
S=1.0% L=55.0m	0+190 – 0+245
S=1.0% L=55.0m	0+245 – 0+300
S=1.0% L=55.0m	0+300 – 0+355
S=1.5% L=55.0m	0+355 – 0+410
S=1.5% L=55.0m	0+410 – 0+465
S=1.5% L=55.0m	0+465 – 0+520

Pipe ø mm: DN225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984 Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 12

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-005

MP2–13 PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1549.17	1545.90
0+020		1548.70	
0+040	0+048.80	1548.29	1545.41 / 1545.41
0+060		1547.02	
0+080		1546.27	
0+100	0+099.58	1546.43	1544.90 / 1544.90
0+120		1546.28	
0+140		1546.08	
0+160	0+158.41	1546.46	1544.31 / 1544.31
0+180	0+188.39	1546.74	1544.01 / 1544.01
0+200		1547.04	
0+220	0+223.79	1546.95	1543.66 / 1543.66
0+240		1546.89	
0+260		1546.74	
0+280	0+283.79	1546.48	1543.06 / 1543.06
0+300		1546.43	
0+320		1546.22	
0+340	0+343.79	1545.27	1542.46 / 1542.46
0+360		1544.66	
0+380		1544.71	
0+400	0+403.79	1544.50	1541.86 / 1541.86
0+420		1544.46	
0+440		1544.43	
0+460	0+463.79	1544.47	1540.96 / 1540.96
0+480		1544.53	
0+500		1544.23	
0+520		1544.35	1540.06

Slope %	
S=1.0%	L=48.8m
S=1.0%	L=50.8m
S=1.0%	L=58.8m
S=1.0%	L=30.0m
S=1.0%	L=35.4m
S=1.0%	L=60.0m
S=1.0%	L=60.0m
S=1.0%	L=60.0m
S=1.5%	L=60.0m
S=1.5%	L=59.0m

Pipe Ø mm: DN 225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 13

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-006

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.W		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - MP2 - 14

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No.: WS622-L1-MP2-007

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+513
Manhole Location	0+000.00			0+060.00			0+120.00			0+180.00			0+240.00			0+300.00		0+334.45			0+394.45			0+454.45			0+513.00
Original ground levels	1549.37	1548.68	1548.22	1547.18	1546.44	1546.30	1546.65	1546.98	1547.06	1547.40	1548.35	1548.28	1548.30	1547.88	1547.81	1547.50	1547.00	1546.28	1545.68	1545.65	1545.89	1546.37	1546.45	1545.99	1545.73	1545.40	1545.47
Invert Elevations	1546.21			1545.73 1545.73			1545.25 1545.25			1544.77 1544.77			1544.29 1544.29			1543.81 1543.81		1543.54 1543.54			1543.06 1543.06			1542.16 1542.16			1541.28
Slope %		S=0.8% L=60.0m			S=0.8% L=60.0m			S=0.8% L=60.0m			S=0.8% L=60.0m			S=0.8% L=60.0m			S=0.8% L=34.5m		S=0.8% L=60.0m			S=1.5% L=60.0m			S=1.5% L=58.5m		
Pipe ø mm	DN 225mm Concrete																										

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

Reference Drawings

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Checked Date
Name : N.M

Designed Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 15

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-008

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+515
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00		0+200.00			0+250.00		0+300.00			0+350.00		0+405.00			0+460.00			0+515.00
Original ground levels	1548.93	1548.79	1548.77	1548.62	1547.95	1547.38	1547.34	1547.35	1547.31	1547.51	1547.84	1548.19	1548.30	1548.01	1547.71	1547.97	1547.22	1546.52	1546.36	1546.22	1546.33	1546.34	1546.24	1546.03	1545.83	1545.67	1545.55
Invert Elevations	1547.55		1547.00	1547.00		1546.45	1546.45		1545.90	1545.90	1545.35	1545.35		1544.80	1544.80	1544.25	1544.25		1543.70	1543.70	1543.09	1543.09		1542.49	1542.49		1541.88
Slope %	S=1.1% L=50.0m			S=1.1% L=50.0m		S=1.1% L=50.0m			S=1.1% L=50.0m			S=1.1% L=50.0m			S=1.1% L=50.0m		S=1.1% L=50.0m			S=1.1% L=55.0m			S=1.1% L=55.0m			S=1.1% L=55.0m	
Pipe Ø mm	DN 225mm Concrete																										

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M.

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 16

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-009

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+525
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00		0+200.00			0+250.00		0+305.00			0+360.00			0+415.00			0+470.00			0+525.00
Original ground levels	1549.33	1549.07	1548.83	1548.72	1548.65	1547.91	1547.35	1547.25	1547.25	1547.35	1548.00	1548.56	1548.32	1548.09	1547.71	1548.21	1547.40	1547.04	1547.39	1547.43	1547.33	1547.08	1546.53	1546.31	1546.21	1546.30	1545.92	1545.81
Invert Elevations	1547.71			1547.21 1547.21		1546.71 1546.71			1546.21 1546.21		1545.71 1545.71			1545.21 1545.21		1544.66 1544.66			1544.11 1544.11			1543.56 1543.56			1543.01 1543.01			1542.46
Slope %	S=1.0% L=50.0m			S=1.0% L=50.0m		S=1.0% L=50.0m			S=1.0% L=50.0m		S=1.0% L=50.0m			S=1.0% L=55.0m		S=1.0% L=55.0m			S=1.0% L=55.0m			S=1.0% L=55.0m			S=1.0% L=55.0m			
Pipe ø mm	DN 225mm Concrete																											

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M.

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 17

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-010

Chainage	Manhole Location	Original ground levels	Invert Elevations	Slope %	Pipe ø mm
0+000	0+000.00	1548.75	1547.01	S=0.8% L=55.0m	DN 225mm Concrete
0+020		1548.53			
0+040		1548.32			
0+060	0+055.00	1547.80	1546.57 / 1546.57		
0+080		1547.42		S=0.8% L=55.0m	
0+100		1547.38			
0+120	0+110.00	1547.42	1546.13 / 1546.13		
0+140		1547.33		S=0.8% L=55.0m	
0+160	0+165.00	1547.97	1545.69 / 1545.69		
0+180		1548.65			
0+200		1548.68		S=0.8% L=55.0m	
0+220	0+220.00	1548.88	1545.25 / 1545.25		
0+240		1548.81			
0+260		1548.56		S=0.8% L=55.0m	
0+280	0+275.00	1548.08	1544.81 / 1544.81		
0+300		1547.59			
0+320		1547.90	1544.37 / 1544.37	S=0.8% L=55.0m	
0+340	0+330.00	1548.39			
0+360		1548.29		S=0.8% L=55.0m	
0+380	0+385.00	1547.94	1543.93 / 1543.93		
0+400		1547.43			
0+420		1546.94		S=0.8% L=55.0m	
0+440	0+440.00	1546.59	1543.49 / 1543.49		
0+460		1546.69			
0+480		1546.39		S=0.8% L=55.0m	
0+495	0+495.00	1546.08	1543.05		

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 18

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-011

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+525
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00		0+200.00			0+250.00		0+305.00			0+360.00			0+415.00			0+470.00			0+525.00
Original ground levels	1549.21	1549.11	1548.98	1548.77	1547.96	1547.73	1547.74	1547.67	1547.66	1547.74	1548.05	1548.37	1548.74	1548.69	1547.93	1547.29	1547.21	1547.28	1547.56	1547.54	1547.80	1547.77	1547.72	1547.57	1547.31	1546.74	1545.99	1545.93
Invert Elevations	1547.82		1547.42	1547.42		1547.02	1547.02		1546.62	1546.62		1546.22	1546.22		1545.82	1545.82		1545.38	1545.38		1544.94	1544.94		1544.50	1544.50		1544.06	1544.06		1543.62
Slope %	S=0.8% L=50.0m			S=0.8% L=50.0m		S=0.8% L=50.0m			S=0.8% L=50.0m			S=0.8% L=50.0m			S=0.8% L=55.0m			S=0.8% L=55.0m			S=0.8% L=55.0m			S=0.8% L=55.0m			S=0.8% L=55.0m		
Pipe Ø mm	DN 225mm Concrete																											

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017
Name : B.M.O

Designed — Date
Name : S.M.W

Checked — Date
Name : N.M

Approved — Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 -19

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-012

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1548.77	1547.29
0+020		1548.54	
0+040		1548.17	
0+050.00	0+050.00		1546.99 / 1546.99
0+060		1547.87	
0+080		1547.69	
0+100	0+100.00	1547.61	1546.69 / 1546.69
0+120		1547.60	
0+140		1547.66	
0+150.00	0+150.00		1546.39 / 1546.39
0+160		1547.86	
0+180		1548.04	
0+200	0+200.00	1547.96	1546.09 / 1546.09
0+220		1547.96	
0+240		1547.79	
0+250.00	0+250.00		1545.79 / 1545.79
0+260		1547.57	
0+280		1547.45	
0+300	0+300.00	1547.41	1545.49 / 1545.49
0+320		1547.40	
0+340		1547.38	
0+350.00	0+350.00		1545.19 / 1545.19
0+360		1547.33	
0+380		1547.36	
0+400		1547.33	
0+405.00	0+405.00		1544.86 / 1544.86
0+420		1547.05	
0+440		1546.94	
0+460	0+460.00	1546.83	1544.53 / 1544.53
0+480		1546.39	
0+500		1546.31	
0+515	0+515.00	1546.20	1544.20

Slope %: S=0.6% L=50.0m; S=0.6% L=50.0m; S=0.6% L=50.0m; S=0.6% L=50.0m; S=0.6% L=50.0m; S=0.6% L=50.0m; S=0.6% L=50.0m; S=0.6% L=55.0m; S=0.6% L=55.0m; S=0.6% L=55.0m

Pipe Ø mm: DN 225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 20

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-013

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1545.98	1544.85
0+020		1545.54	
0+040		1545.57	
0+060	0+055.00	1545.55	1544.03 / 1544.03
0+080		1545.28	
0+100	0+090.00	1545.03	1543.50 / 1543.50
0+120		1544.73	
0+140	0+130.00	1544.41	1542.90 / 1542.90
0+160		1544.48	
0+180	0+175.00	1544.45	1542.23 / 1542.23
0+200		1544.44	
0+220	0+210.00	1544.16	1541.70 / 1541.70
0+240	0+240.00	1543.57	1541.25 / 1541.25
0+260		1542.99	
0+280		1542.40	1540.50 / 1540.50
0+300	0+290.00	1541.85	
0+320		1541.47	
0+340	0+340.00	1542.09	1539.75 / 1539.75
0+360		1541.99	
0+380		1541.99	
0+390	0+390.00	1541.96	1539.00

Slope %: S=1.5% L=55.0m; S=1.5% L=35.0m; S=1.5% L=40.0m; S=1.5% L=45.0m; S=1.5% L=35.0m; S=1.5% L=30.0m; S=1.5% L=50.0m; S=1.5% L=50.0m; S=1.5% L=50.0m

Pipe Ø mm: DN 225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - MP2 - 11

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-MP2-014

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1549.20	1548.07
0+020		1549.14	
0+040		1548.79	
0+060	0+055.00	1548.38	1547.68 / 1547.68
0+080		1548.21	
0+100		1548.40	
0+120	0+110.00	1548.48	1547.30 / 1547.30
0+140		1548.85	
0+160		1548.42	1546.91 / 1546.91
0+180	0+165.00	1548.34	
0+200		1548.19	
0+220	0+220.00	1547.98	1546.52 / 1546.52
0+240		1548.09	
0+260		1547.99	
0+280	0+275.00	1547.98	1546.14 / 1546.14
0+300		1548.16	
0+320		1547.95	1545.76 / 1545.76
0+340	0+330.00	1547.69	
0+360		1547.56	
0+380	0+385.00	1547.44	1545.37 / 1545.37
0+400		1547.36	
0+420		1547.39	
0+440	0+440.00	1547.25	1544.98 / 1544.98
0+460		1546.88	
0+480		1546.86	
0+495	0+495.00	1546.73	1544.60

Slope %: S=0.7% L=55.0m (0+000 – 0+495)

Pipe ø mm: DN 225mm Concrete

Reference Drawings	
B	
A	
REV	REVISIONS

Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Checked — Date — Name : N.M

Designed — Date — Name : S.M.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - MP2 - 21

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-MP2-015

Stations	Manhole No.	Ground Level	Invert Elevations	Pipe Data
0+000	0+000.00	1549.08	1549.08	
0+020		1549.23		S=0.6% L=39.0m
0+040	0+039.00	1549.07	1547.84	
0+060		1549.27	1547.84	S=0.6% L=40.0m
0+080	0+079.00	1549.29	1547.60	
0+100		1549.58	1547.60	S=0.6% L=39.0m
0+120	0+118.00	1549.99	1547.37	
0+140		1549.74	1547.37	S=0.6% L=40.0m
0+160	0+158.00	1549.48	1547.13	
0+180		1549.29	1547.13	S=0.6% L=40.0m
0+200	0+198.00	1548.93	1546.89	
0+220		1548.74	1546.89	S=0.6% L=41.0m
0+240	0+239.00	1548.61	1546.64	
0+260		1548.62	1546.64	S=0.6% L=39.0m
0+280	0+278.00	1548.82	1546.41	
0+300		1549.10	1546.41	S=0.6% L=40.0m
0+320	0+318.00	1549.48	1546.17	
0+340		1550.45	1546.17	S=0.6% L=34.1m
0+360	0+352.05	1550.47	1545.96	
0+380		1548.98	1545.96	S=2.7% L=32.0m
0+400	0+384.05	1546.48	1545.10	
	0+400.05		1545.10	S=2.7% L=16.0m
0+420	0+416.05	1544.25	1544.67	
			1542.67	S=2.7% L=16.0m
0+440		1543.71	1542.24	
			1540.99	S=2.7% L=30.0m
0+460	0+446.05	1540.48	1540.18	
			1538.93	S=2.7% L=15.0m
0+480	0+461.05	1536.26	1538.52	
			1536.02	S=2.7% L=15.0m
0+500	0+476.05	1531.87	1535.62	
			1533.12	S=2.7% L=15.0m
0+520	0+491.05	1529.20	1532.71	
			1530.21	S=2.7% L=15.0m
	0+506.05		1529.81	
			1527.81	S=2.7% L=17.0m
0+533.05	0+523.05	1528.11	1527.35	
			1527.35	S=2.7% L=10.0m
	0+533.05		1527.08	

Dia. & Material: DN 375mm Concrete

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-001

REDS A PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+210
Manhole No.	0+000.00	0+015.00	0+030.00	0+045.00	0+060.00	0+075.00	0+090.00	0+105.00	0+120.00	0+135.00	0+150.00	0+165.00	0+180.00	0+195.00	0+210.00
Ground Level	1555.24	1554.15	1552.61	1550.67	1548.12	1545.53	1542.05	1538.97	1536.19	1532.63	1529.40	1529.09
Invert Elevations	1552.45	1551.78	1551.10	1550.42	1549.75	1548.25	1547.57	1546.07	1545.40	1543.90	1543.23	1541.73	1541.05	1539.55	1538.88	1536.88	1536.20	1534.20	1533.52	1531.52	1530.85	1528.85	1528.18	1527.50
Pipe Data	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m
Dia. & Material	DN 225mm Concrete																							

REDS 04 PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400
Manhole No.	0+000.00	0+045.00	0+090.00	0+120.00	0+150.00	0+180.00	0+210.00	0+240.00	0+270.00	0+290.00	0+310.00	0+325.00	0+340.00	0+355.00	0+370.00	0+385.00	0+400.00
Ground Level	1564.02	1563.22	1562.88	1562.74	1561.82	1561.15	1560.91	1560.47	1559.37	1558.54	1557.57	1556.27	1555.39	1554.47	1553.32	1551.86	1548.73	1545.05	1542.27	1539.39	1537.18
Invert Elevations	1562.12	1560.77	1560.77	1559.42	1559.42	1558.52	1558.52	1557.61	1557.61	1556.27	1556.27	1554.92	1554.92	1553.57	1553.57	1552.22	1552.22	1551.32	1549.82	1548.92	1546.92	1546.24	1544.24	1543.57	1542.57	1541.89	1539.89	1539.22	1537.22	1536.54	1536.54	1535.87
Pipe Data	S=3.0% L=45.0m	S=3.0% L=45.0m	S=3.0% L=30.0m	S=3.0% L=30.0m	S=4.5% L=30.0m	S=4.5% L=30.0m	S=4.5% L=30.0m	S=4.5% L=30.0m	S=4.5% L=20.0m	S=4.5% L=20.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m	S=4.5% L=15.0m
Dia. & Material	DN225mm Concrete																				

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Checked — Date — Name : S.M.W

Designed — Date — Name : S.M.W

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - REDS A & REDS 04

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-REDS-002

REDS 06 PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+415
Manhole No.	0+000.00		0+040.00		0+080.00		0+125.00			0+175.00		0+225.00			0+275.00		0+325.00			0+375.00	0+405.00	0+415.00
Ground Level	1563.38	1563.13	1562.39	1561.86	1561.45	1560.97	1560.53	1559.93	1559.09	1558.20	1557.34	1556.40	1555.80	1554.90	1554.06	1553.13	1552.03	1551.42	1550.42	1549.43	1546.38	1543.45
Invert Elevations	1561.73		1560.53 1560.53		1559.33 1559.33		1557.98 1557.98			1556.48 1556.48		1554.23 1554.23			1551.98 1551.98		1549.73 1549.73			1547.48 1545.48	1544.13 1542.13	1541.68
Pipe Data	S=3.0% L=40.0m		S=3.0% L=40.0m		S=3.0% L=45.0m		S=3.0% L=50.0m			S=4.5% L=50.0m		S=4.5% L=50.0m			S=4.5% L=50.0m		S=4.5% L=50.0m			S=4.5% L=30.0m	S=4.5% L=10.0m	
Dia. & Material	DN 225mm Concrete																					

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 06

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-003

REDS 10 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00		0+200.00			0+250.00		0+300.00			0+350.00	-	0+400.00
Original ground levels	1562.01	1561.76	1561.47	1560.61	1560.36	1559.87	1559.11	1558.55	1557.86	1557.15	1556.54	1556.13	1555.23	1554.76	1554.20	1553.51	1552.84	1552.14	1551.65	1551.23	1550.89
Invert Elevations	1560.71		1559.21 / 1559.21			1557.71 / 1557.71			1556.21 / 1556.21		1554.71 / 1554.71			1553.21 / 1553.21		1551.71 / 1551.71			1549.46 / 1549.46		1547.21
Slope %	S=3.0% L=50.0m			S=3.0% L=50.0m			S=3.0% L=50.0m			S=3.0% L=50.0m			S=3.0% L=50.0m			S=4.5% L=50.0m			S=4.5% L=50.0m		
Pipe Ø mm	DN225mm Concrete																				

Reference Drawings	
B	
A	
REV	REVISIONS

Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 10

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-004

REDS 11 PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400
Manhole No.	0+000.00			0+050.00		0+100.00			0+150.00		0+200.00			0+250.00		0+300.00			0+350.00		0+400.00
Ground Level	1560.91	1559.87	1559.35	1559.16	1558.69	1558.25	1557.88	1557.68	1557.33	1556.55	1556.24	1555.85	1555.55	1555.36	1555.15	1554.28	1553.14	1551.78	1550.95	1550.13	1549.39
Invert Elevations	1559.42		1558.17	1558.17		1556.92	1556.92		1555.67	1555.67		1554.42	1554.42		1553.17	1553.17		1551.92	1551.92	1549.67	1548.67	1546.42
Pipe Data	S=2.5% L=50.0m			S=2.5% L=50.0m		S=2.5% L=50.0m			S=2.5% L=50.0m		S=2.5% L=50.0m			S=2.5% L=50.0m		S=4.5% L=50.0m			S=4.5% L=50.0m		
Dia. & Material	DN225mm Concrete																				

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE -REDS 11

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-005

REDS 12 PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1560.02	1557.41
0+020		1560.01	
0+040	0+040.00	1559.53	1556.41 1556.41
0+060		1559.00	
0+080	0+080.00	1558.30	1555.41 1555.41
0+100		1557.89	
0+120		1557.51	
0+130	0+130.00		1554.16 1554.16
0+140		1557.22	
0+160		1556.67	
0+180	0+180.00	1555.97	1552.91 1552.91
0+200		1555.54	
0+220		1554.49	
0+230	0+230.00		1551.66 1551.66
0+240		1554.32	
0+260		1554.50	
0+280	0+280.00	1554.16	1550.41 1550.41
0+300		1553.39	
0+320		1551.94	
0+330	0+330.00		1549.16 1549.16
0+340		1551.23	
0+360		1550.47	
0+380	0+380.00	1548.77	1547.91 1547.91
0+400		1548.72	
0+420		1548.83	1546.66
0+430	0+430.00	1548.77	

Slope %	
S=2.5% L=40.0m	0+020 – 0+040
S=2.5% L=40.0m	0+040 – 0+080
S=2.5% L=50.0m	0+080 – 0+130
S=2.5% L=50.0m	0+130 – 0+180
S=2.5% L=50.0m	0+180 – 0+230
S=2.5% L=50.0m	0+230 – 0+280
S=2.5% L=50.0m	0+280 – 0+330
S=2.5% L=50.0m	0+330 – 0+380
S=2.5% L=50.0m	0+380 – 0+430

Pipe Ø mm: DN225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 12

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-006

REDS 13 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+435
Manhole Location	0+000.00		0+045.00			0+090.00		0+135.00		0+185.00			0+235.00		0+285.00			0+335.00		0+385.00			0+435.00
Original ground levels	1558.00	1558.35	1558.44	1558.06	1557.77	1557.02	1556.25	1555.38	1554.62	1554.09	1553.55	1553.34	1553.34	1553.25	1552.20	1551.80	1551.19	1550.71	1550.14	1549.91	1549.85	1549.36	1548.66
Invert Elevations	1556.95		1555.96 1555.96			1554.97 1554.97		1553.98 1553.98		1552.88 1552.88			1551.78 1551.78		1550.68 1550.68			1549.58 1549.58		1548.48 1548.48			1547.38
Slope %	S=2.2% L=45.0m		S=2.2% L=45.0m		S=2.2% L=45.0m			S=2.2% L=50.0m			S=2.2% L=50.0m			S=2.2% L=50.0m			S=2.2% L=50.0m			S=2.2% L=50.0m		
Pipe Ø mm	DN225mm Concrete																						

Reference Drawings	
B	
A	
REV	REVISIONS

	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M.		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title

PROFILE - REDS 13

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-REDS-006

REDS 14 PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations	Slope %	Pipe ø mm
0+000	0+000.00	1555.64	1554.34	S=1.6% L=50.0m	DN225mm Concrete
0+020		1555.98			
0+040		1556.28	1553.54		
0+060	0+050.00	1556.70	1553.54	S=1.6% L=50.0m	
0+080		1556.37			
0+100	0+100.00	1555.76	1552.74	S=1.6% L=50.0m	
0+120		1555.01	1552.74		
0+140		1554.89	1551.94		
0+160	0+150.00	1554.34	1551.94	S=1.6% L=50.0m	
0+180		1554.22			
0+200	0+200.00	1554.12	1551.14	S=1.6% L=50.0m	
0+220		1553.27	1551.14		
0+240		1553.14			
0+260	0+250.00	1553.11	1550.34	S=1.6% L=50.0m	
0+280		1552.43	1550.34		
0+300	0+300.00	1551.49	1549.54	S=1.6% L=50.0m	
0+320		1551.44	1549.54		
0+340		1550.92			
0+360	0+350.00	1550.35	1548.74	S=1.6% L=50.0m	
0+380		1550.12	1548.74		
0+400	0+400.00	1550.27	1547.94	S=1.6% L=50.0m	
0+420		1550.00	1547.94		
0+440		1549.42			
0+450	0+450.00	1549.05	1547.14		

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Designed — Date — Name : S.M.W
Checked — Date — Name : N.M.
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 14

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-007

REDS 15 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+450
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00		0+200.00			0+250.00		0+300.00			0+350.00		0+400.00			0+450.00
Original ground levels	1553.88	1554.91	1555.26	1554.72	1554.07	1553.40	1553.60	1553.67	1553.53	1553.25	1552.98	1551.97	1551.45	1551.39	1551.25	1550.96	1550.67	1550.27	1550.34	1550.41	1550.46	1550.22	1549.65	1549.46
Invert Elevations	1551.88			1551.38 / 1551.38		1550.88 / 1550.88			1550.38 / 1550.38		1549.88 / 1549.88			1549.38 / 1549.38		1548.88 / 1548.88			1548.38 / 1548.38		1547.88 / 1547.88			1547.38
Slope %	S=1.0% L=50.0m			S=1.0% L=50.0m		S=1.0% L=50.0m			S=1.0% L=50.0m		S=1.0% L=50.0m			S=1.0% L=50.0m		S=1.0% L=50.0m			S=1.0% L=50.0m		S=1.0% L=50.0m			
Pipe ø mm	DN 225mm Concrete																							

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Designed — Date — Name : S.M.W
Checked — Date — Name : N.M
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 15

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-008

REDS 16 PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1553.07	1552.02
0+020	0+029.95	1553.44	1551.72 / 1551.72
0+040		1553.31	
0+060	0+060.16	1552.97	1551.42 / 1551.42
0+080		1553.21	
0+100		1552.88	
0+120	0+110.16	1552.72	1550.92 / 1550.92
0+140		1552.66	
0+160		1552.50	
0+180	0+165.16	1551.88	1550.37 / 1550.37
0+200		1551.44	
0+220		1551.31	1549.82 / 1549.82
0+240	0+220.16	1551.01	
0+260		1550.86	
0+280	0+275.16	1550.57	1549.27 / 1549.27
0+300		1550.48	
0+320		1550.69	
0+340	0+330.16	1550.66	1548.72 / 1548.72
0+360		1550.40	
0+380	0+385.16	1550.12	1548.16 / 1548.16
0+400		1550.27	
0+420		1550.76	
0+440.16	0+440.160	1549.84	1547.62

Slope %: S=1.0% L=29.9m; S=1.0% L=30.2m; S=1.0% L=50.0m; S=1.0% L=55.0m; S=1.0% L=55.0m; S=1.0% L=55.0m; S=1.0% L=55.0m; S=1.0% L=55.0m; S=1.0% L=55.0m

Pipe ø mm: DN225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn: Date : MAY. 2017
Name : B.M.O

Designed: Date
Name : S.M.W

Checked: Date
Name : N.M

Approved: Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 16

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-009

Reference Drawings					
B					
A					
REV	REVISIONS	Checked	Date	Appr. WD	

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M.		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 17

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-010

REDS 18 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220
Manhole Location	0+000.00			0+055.00			0+110.00			0+165.00		0+220.00
Original ground levels	1550.61	1550.41	1550.07	1550.18	1550.35	1550.14	1550.53	1550.43	1549.69	1548.84	1548.68	1549.06
Invert Elevations	1549.41			1549.08 1549.08			1548.75 1548.75			1548.42 1548.42		1548.09
Slope %	S=0.6% L=55.0m		S=0.6% L=55.0m		S=0.6% L=55.0m			S=0.6% L=55.0m				
Pipe ø mm	DN 225mm Concrete											

REDS 19 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	
Manhole Location	0+000.00		0+039.99		0+079.99					0+169.99
Original ground levels	1549.80	1550.26	1550.25	1550.17	1550.11	1549.89	1549.57	1549.29	1549.18	1549.08
Invert Elevations	1549.12		1548.88 1548.88		1548.64 1548.64		1548.43 1548.43			1548.10
Slope %	S=0.6% L=40.0m		S=0.6% L=40.0m		S=0.6% L=35.0m			S=0.6% L=55.0m		
Pipe ø mm	DN 225mm Concrete									

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M.		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - REDS 18 & REDS 19

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-REDS-011

GIT A PROFILE

Stations	Manhole No.	Ground Level	Invert Elevations	Pipe Data	Dia. & Material
0+000	0+000.00	1564.41	1562.08		DN 300mm Concrete
0+020		1564.78		S=1.5% L=50.0m	
0+040		1565.03	1562.33		
0+060	0+050.00	1565.11	1562.33	S=1.5% L=50.0m	
0+080		1565.17			
0+100	0+100.00	1564.83	1561.58	S=1.5% L=50.0m	
0+120		1564.81	1561.58		
0+140		1564.32	1560.83		
0+160	0+150.00	1564.03	1560.83	S=1.5% L=50.0m	
0+180		1563.73			
0+200	0+200.00	1563.39	1560.08	S=1.5% L=50.0m	
0+220		1562.93	1560.08		
0+240		1562.31			
0+260	0+250.00	1561.47	1559.33	S=4.0% L=40.0m	
0+280		1560.64	1559.33		
0+300	0+290.00	1559.57	1557.73	S=4.0% L=30.0m	
0+320	0+320.00	1558.29	1557.73		
0+340		1556.83	1556.53	S=4.0% L=30.0m	
0+360	0+350.00	1554.90	1555.03		
0+380	0+380.00	1553.10	1553.83	S=4.0% L=30.0m	
0+400		1551.03	1552.33		
0+420	0+410.00	1548.77	1551.13	S=4.0% L=30.0m	
0+440	0+440.00	1547.76	1549.62		
0+460		1548.26	1548.43	S=3.0% L=39.0m	
0+480	0+479.00	1548.58	1546.93		
0+500	0+494.00	1547.84	1545.73	S=3.0% L=15.0m	
0+520		1546.92	1545.73	S=3.0% L=40.0m	
0+540	0+534.00	1545.88	1544.56	S=3.0% L=42.0m	
0+560		1544.59	1544.56		
0+580	0+576.00	1543.71	1544.11	S=3.0% L=43.0m	
0+600		1543.38	1544.11		
0+620	0+619.00	1542.92	1542.91	S=3.0% L=42.0m	
0+640		1541.95	1542.91		
0+660	0+661.00	1540.65	1541.65	S=1.2% L=31.4m	
0+680		1539.43	1541.65		
0+700		1539.10	1540.36	S=0.8% L=45.4m	
0+720		1539.48	1540.36		
0+740	0+737.81	1539.91	1539.10	S=0.9% L=201.0m	
0+758	0+757.81	1540.42	1539.10		
			1538.72		
			1538.72		
			1538.36		
			1538.36		
			1538.96		
			1538.18		

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - GIT A & GIT (1)

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-001

GIT A03 PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+563.07
Manhole No.	0+000.00		0+045.00		0+085.00		0+125.00			0+175.00		0+225.00			0+275.00		0+325.00			0+375.00		0+425.00	0+445.00	0+465.00			0+515.00			0+563.07
Ground Level	1548.66	1548.50	1548.25	1548.53	1548.59	1548.42	1548.38	1548.21	1548.25	1548.67	1548.81	1548.26	1548.12	1547.80	1547.44	1547.53	1547.53	1547.18	1546.90	1547.38	1547.44	1546.64	1544.57	1541.90	1540.64	1540.09	1539.44	1539.07	1538.93	1538.97
Invert Elevations	1545.25		1544.80	1544.80		1544.40	1544.40		1544.00	1544.00		1543.50	1543.50		1543.00	1543.00		1542.50	1542.50		1542.00	1542.00		1541.50	1541.50		1541.00	1541.00	1540.20	1538.70	1537.90	1537.90		1537.40	1537.40		1536.92
Pipe Data	S=1.0% L=45.0m		S=1.0% L=40.0m		S=1.0% L=40.0m		S=1.0% L=50.0m			S=1.0% L=50.0m			S=1.0% L=50.0m			S=1.0% L=50.0m			S=1.0% L=50.0m			S=1.0% L=50.0m			S=4.0% L=20.0m	S=4.0% L=20.0m		S=1.0% L=50.0m				S=1.0% L=48.1m		
Dia. & Material	DN300mm Concrete																													DN300mm Steel

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title

PROFILE - GIT A03

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-GIT-002

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1548.12	1546.68
0+020		1547.74	
0+040		1547.62	
0+060	0+050.00	1547.95	1546.38 / 1546.38
0+080		1547.70	
0+100	0+100.00	1547.82	1546.08 / 1546.08
0+120		1547.76	
0+140		1547.81	
0+160	0+150.00	1548.08	1545.78 / 1545.78
0+180		1548.13	
0+200	0+200.00	1548.11	1545.48 / 1545.48
0+220		1548.31	
0+240		1548.77	
0+260	0+250.00	1548.65	1545.18 / 1545.18
0+280		1548.33	
0+300	0+300.00	1548.02	1544.88 / 1544.88
0+320		1547.72	
0+340		1548.09	
0+360	0+350.00	1548.13	1544.58 / 1544.58
0+380		1548.17	
0+400	0+400.00	1548.17	1544.28 / 1544.28
0+420		1547.81	
0+440	0+430.00	1545.88	1543.06 / 1543.06
0+460	0+460.00	1543.83	1541.83 / 1541.83
0+480		1542.16	
0+500	0+500.00	1540.90	1540.20 / 1540.20
0+520		1540.89	
0+540	0+545.00	1540.81	1539.30
0+545		1540.57	

Slope %	
S=0.6% L=50.0m	
S=0.6% L=50.0m	
S=0.6% L=50.0m	
S=0.6% L=50.0m	
S=0.6% L=50.0m	
S=0.6% L=50.0m	
S=0.6% L=50.0m	
S=0.6% L=50.0m	
S=4.1% L=30.0m	
S=4.1% L=30.0m	
S=4.1% L=40.0m	
S=2.0% L=45.0m	

Pipe Ø mm: DN300mm Concrete

Reference Drawings	
B	
A	
REV	REVISIONS — Checked — Date — Appr. WD

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Designed — Date — Name : S.M.W
Checked — Date — Name : N.M
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - GIT A04

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-GIT-003

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1548.79	1548.07
0+020		1548.63	
0+040		1548.59	1547.75 / 1547.75
0+060		1548.58	
0+080	0+080.00	1548.74	1547.43 / 1547.43
0+100		1549.17	
0+120		1549.15	
0+140	0+130.00	1549.08	1547.03 / 1547.03
0+160		1549.37	
0+180	0+180.00	1549.17	1546.63 / 1546.63
0+200		1548.75	
0+220	0+220.00	1548.94	1546.31 / 1546.31
0+240		1549.60	
0+260	0+260.00	1550.12	1545.99 / 1545.99
0+280		1549.80	
0+300	0+300.00	1549.35	1545.67 / 1545.67
0+320		1549.65	
0+340	0+340.00	1549.88	1545.35 / 1545.35
0+360		1549.64	
0+380	0+380.00	1549.52	1545.03 / 1545.03
0+400		1549.71	
0+420	0+420.00	1549.30	1544.71 / 1544.71
0+440		1548.34	
0+460	0+460.00	1547.27	1544.39 / 1544.39
0+480		1546.12	
0+500	0+500.00	1545.01	1542.48 / 1542.48
0+520		1543.89	
0+540	0+540.00	1542.96	1540.56

Slope %
S=0.8% L=40.0m
S=0.8% L=40.0m
S=0.8% L=50.0m
S=0.8% L=50.0m
S=0.8% L=40.0m
S=0.8% L=40.0m
S=0.8% L=40.0m
S=0.8% L=40.0m
S=0.8% L=40.0m
S=0.8% L=40.0m
S=0.8% L=40.0m
S=4.8% L=40.0m
S=4.8% L=40.0m

Pipe Ø mm: DN 300mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - GIT A05

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-004

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340
Manhole Location	0+000.00			0+050.00			0+100.00			0+150.00			0+200.00			0+250.00		0+300.00		0+340.00
Original ground levels	1549.14	1549.34	1549.79	1549.74	1549.70	1549.74	1549.65	1550.04	1549.98	1549.48	1548.98	1548.57	1548.49	1548.93	1548.94	1547.11	1545.40	1543.76
Invert Elevations	1548.55		1548.05 / 1548.05			1547.55 / 1547.55		1547.05 / 1547.05			1546.55 / 1546.55		1546.05 / 1546.05			1543.73 / 1543.73		1541.85
Slope %	S=1.0% L=50.0m		S=1.0% L=50.0m		S=1.0% L=50.0m		S=1.0% L=50.0m		S=1.0% L=50.0m		S=4.6% L=50.0m		S=4.7% L=40.0m					
Pipe ø mm	DN300mm Concrete																	

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+290
Manhole Location	0+000.00			0+050.00			0+100.00			0+150.00			0+200.00			0+250.00		0+290.00
Original ground levels	1550.37	1549.51	1549.41	1550.03	1550.56	1550.80	1549.90	1549.41	1549.31	1549.29	1549.21	1549.25	1549.58	1549.08	1547.10	1546.17
Invert Elevations	1548.81		1548.21 / 1548.21			1547.61 / 1547.61		1547.01 / 1547.01			1546.41 / 1546.41		1544.58 / 1544.58		1543.11	
Slope %	S=1.2% L=50.0m		S=1.2% L=50.0m		S=1.2% L=50.0m		S=1.2% L=50.0m		S=3.7% L=50.0m		S=3.7% L=40.0m					
Pipe ø mm	DN 300mm Concrete															

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE -GIT A06 & GIT 07

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-005

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1569.97	1568.08
0+020		1570.02	
0+040		1570.15	
0+060	0+060.00	1569.60	1567.48 / 1567.48
0+080		1569.37	
0+100		1569.28	
0+120	0+118.77	1568.91	1566.89 / 1566.89
0+140		1568.58	
0+160		1568.42	
0+180	0+178.77	1568.11	1566.29 / 1566.29
0+200		1568.32	
0+220		1568.13	
0+240	0+231.53	1568.02	1565.77 / 1565.77
0+260		1567.71	
0+280		1567.53	
0+300	0+291.53	1567.62	1565.17 / 1565.17
0+320		1567.41	
0+340		1567.01	
0+360	0+351.53	1566.65	1564.57 / 1564.57
0+380		1566.23	
0+400		1565.76	
0+420	0+411.53	1565.00	1563.07 / 1563.07
0+440	0+430.16	1564.40	1562.60 / 1562.60
0+460		1563.29	
0+480	0+484.09	1563.21	1561.25 / 1561.25
0+500		1562.94	
0+520		1562.74	
0+540	0+544.09	1562.48	1559.75 / 1559.75
0+552.93	0+552.93	1562.17	1559.53

Slope %: S=1.0% L=60.0m; S=1.0% L=58.8m; S=1.0% L=60.0m; S=1.0% L=52.8m; S=1.0% L=60.0m; S=1.0% L=60.0m; S=2.5% L=60.0m; S=2.5% L=18.6m; S=2.5% L=53.9m; S=2.5% L=60.0m; S=2.5% L=8.8m

Pipe Ø mm: DN 225mm Concrete

Reference Drawings	

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

Runji & Partners SINCE 1984
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

NAIROBI CITY WATER & SEWERAGE COMPANY
(NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

Date	CONTRACT NO.	Date
DEPARTMENT HEAD	Rev	Managing Director

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title

PROFILE - GIT A16

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-GIT-006

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+512
Manhole No.	0+000.00			0+050.00		0+090.00		0+130.00		0+172.00		0+212.00	0+242.00	0+257.00	0+272.00	0+287.00	0+302.00	0+317.00		0+357.00		0+397.00		0+437.00		0+477.00	0+492.00	0+512.00
Ground Level	1574.52	1574.46	1574.21	1574.04	1573.74	1573.19	1572.98	1573.08	1572.85	1572.24	1571.58	1570.57	1569.17	1564.16	1557.28	1552.00	1548.14	1547.25	1545.92	1545.10	1544.28	1542.72	1540.67	1538.58	1537.93	1534.26	1532.93
Invert Elevations	1572.20		1572.20	1572.20	1571.40	1571.40	1570.60	1570.60	1569.76	1569.76	1568.96	1566.96	1565.43	1562.93	1562.17	1558.67	1557.90	1554.90	1554.14	1551.14	1550.37	1547.87	1547.11	1546.11	1544.07	1544.07	1542.02	1542.02	1539.98	1538.49	1536.45	1534.45	1533.68	1531.68	1530.66
Pipe Data	S=2.0% L=50.0m			S=2.0% L=40.0m		S=2.0% L=40.0m		S=2.0% L=42.0m		S=2.0% L=40.0m		S=5.1% L=30.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=40.0m		S=5.1% L=40.0m		S=5.1% L=40.0m		S=5.1% L=40.0m		S=5.1% L=15.0m	S=5.1% L=20.0m	
Dia. & Material	DN 225mm Concrete																										

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name : N.M

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - GIT A2

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-GIT-007

Stations	Manhole No.	Ground Level	Invert Elevations
0+000	0+000.00	1578.92	1574.47
0+020		1577.28	
0+040		1576.52	
0+060	0+055.00	1575.85	1573.48
0+080		1575.03	1573.48
0+100		1573.89	
0+120	0+110.00	1573.35	1572.49
0+140		1573.01	1572.49
0+160		1573.29	
0+180	0+165.00	1573.55	1571.50
0+200		1573.90	1571.50
0+220	0+220.00	1574.04	1570.51
0+240		1573.84	1570.51
0+260		1573.57	
0+280	0+275.00	1573.08	1569.52
0+300	0+295.00	1571.25	1569.52
0+320	0+320.00	1569.49	1569.16
0+340	0+335.00	1566.04	1569.16
0+360	0+350.00	1562.52	1567.89
0+380	0+365.00	1558.77	1566.39
0+400	0+380.00	1555.66	1565.62
0+420	0+395.00	1552.85	1562.62
0+440	0+410.00	1550.07	1561.86
0+460	0+425.00	1546.53	1560.36
0+480	0+440.00	1544.04	1559.59
0+500	0+455.00	1541.67	1558.09
0+520	0+470.00	1538.62	1557.33
0+540	0+490.00	1536.31	1555.83
0+560	0+505.00	1535.38	1555.06
0+580	0+520.00	1535.19	1553.56
0+585	0+535.00	1535.15	1552.80
	0+550.00		1551.30
	0+585.00		1550.53
			1549.03
			1548.27
			1546.27
			1545.50
			1544.00
			1543.24
			1543.24
			1542.22
			1540.72
			1539.95
			1538.45
			1537.69
			1535.69
			1534.92
			1534.92
			1534.48
			1534.48
			1533.42

Pipe Data: DN 300mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

Runji & Partners SINCE 1984
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE -GIT A3

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-008

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - GIT3 - 08

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-009

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE -GIT B1

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-001

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400
Manhole Location	0+000.00			0+050.00			0+102.80		0+145.49			0+198.34			0+252.36		0+294.22		0+330.12		0+368.26		0+408.35
Original ground levels	1578.97	1579.29	1579.72	1579.86	1579.90	1579.85	1580.06	1579.55	1579.38	1579.28	1578.84	1578.16	1577.77	1577.27	1576.51	1575.23	1574.08	1572.42	1571.03	1570.83	1571.06	1571.67
Invert Elevations	1578.03		1577.33 / 1577.33			1576.59 / 1576.59		1576.00 / 1576.00			1575.26 / 1575.26			1573.91 / 1573.91		1572.86 / 1572.86		1570.96 / 1570.96		1570.01 / 1570.01		1569.01
Slope %	S=1.4% L=50.0m			S=1.4% L=52.8m			S=1.4% L=42.7m			S=1.4% L=52.9m			S=2.5% L=54.0m			S=2.5% L=41.9m		S=5.3% L=35.9m		S=2.5% L=38.1m		S=2.5% L=40.1m	
Pipe Ø mm	DN 225mm Concrete																					

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE -GIT B2

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-002

GIT B1–04 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240
Manhole Location	0+000.00		0+040.00			0+090.00		0+140.00			0+190.00		0+240.00
Original ground levels	1577.55	1576.99	1576.67	1576.34	1576.02	1575.78	1575.47	1575.30	1575.27	1575.21	1575.13	1574.83	1574.66
Invert Elevations	1576.30		1575.50 1575.50			1574.50 1574.50		1573.50 1573.50			1572.50 1572.50		1571.50
Slope %	S=2.0% L=40.0m		S=2.0% L=50.0m			S=2.0% L=50.0m		S=2.0% L=50.0m			S=2.0% L=50.0m		
Pipe ø mm	DN 225mm Concrete												

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - GIT BI - 04

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-003

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1580.82	1578.81
0+020		1580.93	
0+040	0+048.00	1580.86	1578.33 / 1578.33
0+060		1581.02	
0+080		1581.26	
0+100	0+095.00	1581.32	1577.86 / 1577.86
0+120		1581.29	
0+140	0+143.00	1581.50	1577.38 / 1577.38
0+160		1581.64	
0+180		1580.92	
0+200	0+191.00	1580.53	1576.90 / 1576.90
0+220		1580.51	
0+240	0+241.00	1579.98	1576.40 / 1576.40
0+260		1579.45	
0+280	0+286.00	1578.93	1575.95 / 1575.95
0+300		1577.86	
0+320		1576.73	
0+340	0+336.00	1577.62	1573.95 / 1573.95
0+360		1577.41	
0+380	0+386.00	1574.26	1571.95 / 1571.95
0+400		1572.71	
0+420	0+431.00	1571.99	1570.15 / 1570.15
0+440		1570.58	
0+461	0+461.00	1571.35	1569.85

Slope %	
S=1.0%	L=48.0m
S=1.0%	L=47.0m
S=1.0%	L=48.0m
S=1.0%	L=48.0m
S=1.0%	L=50.0m
S=1.0%	L=45.0m
S=4.0%	L=50.0m
S=4.0%	L=50.0m
S=4.0%	L=45.0m
S=1.0%	L=30.0m

Pipe ø mm: DN 225mm Concrete

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O

Designed — Date — Name : S.M.W

Checked — Date — Name : N.M

Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - GIT B3

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-GIT-004

756

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+150
Manhole Location	0+000.00			0+050.00		0+100.00			0+150.00
Original ground levels	1581.67	1581.53	1581.42	1581.15	1580.78	1580.68	1580.79	1580.27	1579.95
Invert Elevations	1580.30			1579.05 1579.05		1577.80 1577.80			1576.55
Slope %	S=2.5% L=50.0m			S=2.5% L=50.0m			S=2.5% L=50.0m		
Pipe Ø mm	DN 225mm Concrete								

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - GIT B3 - 05

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-GIT-005

Reference Drawings	
B	
A	
REV	REVISIONS

Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn	Date : MAY. 2017	Designed	Date
Name : B.M.O		Name : S.M.W	
Checked	Date	Approved	Date
Name : N.M		Name : R.N	

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title

PROFILE - GIT B3 - 08 & GIT B3 - 10

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No. WS622-L1-GIT-006

Datum 1554

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240
Manhole No.	0+000.00	0+025.00	0+050.00	0+070.00	0+090.00	0+110.00	0+130.00	0+150.00	0+165.00	0+180.00	0+195.00	0+210.00	0+225.00	0+240.00
Ground Level	1574.37	1573.36	1572.26	1571.46	1570.34	1569.13	1567.82	1566.35	1565.65	1564.70	1562.60	1559.07	1552.60
Invert Elevations	1572.74	1571.46	1571.46	1570.19	1570.19	1569.17	1569.17	1568.15	1568.15	1567.13	1565.63	1564.61	1564.61	1563.59	1563.59	1562.82	1562.82	1562.06	1562.06	1561.30	1559.29	1558.53	1556.03	1555.26	1552.26	1551.50
Pipe Data	S=5.1% L=25.0m	S=5.1% L=25.0m	S=5.1% L=20.0m	S=5.1% L=20.0m	S=5.1% L=20.0m	S=5.1% L=20.0m	S=5.1% L=20.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=15.0m	S=5.1% L=15.0m
Dia. & Material	DN 225mm Concrete												

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280
Manhole Location	0+000.00	0+040.00	0+080.00	0+120.00	0+165.00	0+205.00	0+235.00	0+265.00
Original ground levels	1572.67	1571.34	1569.80	1568.66	1567.00	1566.45	1565.92	1565.70	1565.01	1564.39	1563.85	1563.32	1561.75	1560.66	1559.68
Invert Elevations	1570.42	1567.82	1567.82	1566.22	1566.22	1564.62	1564.62	1562.82	1562.82	1561.22	1561.22	1560.02	1560.02	1558.82	1558.82	1558.02
Slope %	S=6.5% L=40.0m	S=4.0% L=40.0m	S=4.0% L=40.0m	S=4.0% L=45.0m	S=4.0% L=40.0m	S=4.0% L=30.0m	S=4.0% L=30.0m	S=4.0% L=20.0m
Pipe ø mm	DN 225mm Concrete														

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Checked Date
Name : N.M

Designed Date
Name : S.M.W

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - CSB2 & CSB1

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CSB-001

CSB3 PROFILE

Chainage	Manhole Location	Original ground levels	Invert Elevations	Slope %	Pipe ø mm
0+000	0+000.00	1575.12	1573.89	S=4.5% L=40.0m	DN 225mm Concrete
0+020		1574.97			
0+040	0+040.00	1574.50	1572.09 / 1572.09	S=4.5% L=39.0m	
0+060		1573.76			
0+080	0+079.00	1573.48	1570.34 / 1570.34	S=5.1% L=37.0m	
0+100		1572.62			
0+120	0+116.00	1571.88	1568.45 / 1568.45	S=5.1% L=37.0m	
0+140		1570.48			
0+160	0+153.00	1569.39	1566.56 / 1566.56	S=5.1% L=40.0m	
0+180		1567.81			
0+200	0+193.00	1566.25	1564.53 / 1564.53	S=5.1% L=37.0m	
0+220		1564.59			
0+240	0+230.00	1563.42	1562.64 / 1562.64	S=5.1% L=33.0m	
0+260 / 0+263		1562.75 / 1562.65	1560.95		

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn — Date : MAY. 2017 — Name : B.M.O
Designed — Date — Name : S.M.W
Checked — Date — Name : N.M
Approved — Date — Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title: PROFILE - CSB 3

Scales (A1): Hor. 1:1000, Vert. 1:100

Drg No. WS622-L1-CSB-002

CSB3–01 PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+231.77
Manhole No.	0+000.00			0+049.39			0+107.82			0+166.41			
Ground Level	1574.58	1573.79	1572.91	1571.62	1569.98	1568.74	1567.91	1566.92	1565.37	1565.09	1565.31	1564.68	1563.93
Invert Elevations	1572.75		1570.78	1568.78		1566.44	1566.44		1564.10	1564.10		1562.79	
Pipe Data	S=4.0% L=49.4m			S=4.0% L=58.4m			S=4.0% L=58.6m			S=2.0% L=65.4m			
Dia. & Material	DN 225mm Concrete												

CSB3–04 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220
Manhole Location	0+000.00			0+055.00					0+165.00			0+220.00
Original ground levels	1576.62	1576.22	1575.98	1575.65	1575.29	1574.83	1574.25	1573.62	1573.71	1573.93	1573.00	1572.08
Invert Elevations	1575.20			1573.55 1573.55		1571.90 1571.90			1570.25 1570.25			1568.60
Slope %		S=3.0% L=55.0m			S=3.0% L=55.0m			S=3.0% L=55.0m			S=3.0% L=55.0m	
Pipe Ø mm	DN 225mm Concrete											

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE -CSB3 - 01 & CSB3- 04

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CSB-003

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220
Manhole Location	0+000.00			0+055.00			0+110.00			0+165.00		0+220.00
Original ground levels	1577.63	1577.57	1577.50	1577.42	1577.34	1577.15	1576.70	1576.25	1575.74	1575.19	1574.51	1574.50
Invert Elevations	1576.54			1575.44 1575.44		1574.34 1574.34			1573.24 1573.24			1572.14
Slope %	S=2.0% L=55.0m			S=2.0% L=55.0m			S=2.0% L=55.0m			S=2.0% L=55.0m		
Pipe ø mm	DN 225mm Concrete											

Reference Drawings				
B				
A				
REV	REVISIONS	Checked	Date	Appr. WD

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - CSB 3-06

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CSB-004

CSB4 PROFILE

Stations	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420
Manhole No.	0+000.00		0+035.00		0+085.00			0+135.00		0+185.00			0+235.00		0+274.00		0+311.00		0+349.00		0+385.00		0+420.00
Ground Level	1578.74	1578.77	1578.78	1578.77	1578.77	1578.50	1578.12	1577.74	1577.39	1576.87	1576.22	1575.62	1575.24	1575.08	1574.38	1574.08	1573.41	1572.64	1571.56	1569.41	1566.65	1564.52
Invert Elevations	1575.50		1574.87 1574.87		1573.97 1573.97		1573.07 1573.07			1572.17 1572.17			1571.27 1571.27		1570.57 1570.57		1569.91 1569.91		1568.20 1566.15		1564.55 1562.58		1560.99
Pipe Data	S=1.8% L=35.0m		S=1.8% L=50.0m		S=1.8% L=50.0m			S=1.8% L=50.0m		S=1.8% L=50.0m			S=1.8% L=39.0m		S=1.8% L=37.0m		S=4.5% L=38.0m		S=4.5% L=36.0m		S=4.5% L=35.0m	
Dia. & Material	DN 225mm Concrete																					

CSB4-03 PROFILE

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+219.95
Manhole Location	0+000.00			0+055.00			0+109.95			0+164.95		0+219.95
Original ground levels	1577.02	1576.80	1576.68	1577.02	1576.60	1576.24	1575.88	1575.53	1575.22	1574.79	1574.37	1573.43
Invert Elevations	1575.36			1574.53 1574.53			1573.71 1573.71			1572.88 1572.88		1572.06
Slope %		S=1.5% L=55.0m			S=1.5% L=55.0m			S=1.5% L=55.0m			S=1.5% L=55.0m	
Pipe Ø mm	DN 225mm Concrete											

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT
SINCE 1984
Runji & Partners
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.
In Joint Venture With
Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - CSB4 &CSB4 - 03

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CSB-005

Chainage	Manhole Location	Original ground levels	Invert Elevations
0+000	0+000.00	1580.25	1578.40
0+020		1579.96	
0+040		1579.54	1577.95
0+060	0+050.00	1578.96	1577.95
0+080		1578.57	
0+100	0+100.00	1578.60	1577.50
0+120		1578.62	1577.50
0+140		1578.64	
0+160	0+150.00	1578.93	1577.05
0+180		1579.50	1577.05
0+200	0+195.00	1579.78	1576.64
0+220		1579.64	1576.64
0+240	0+245.00	1579.62	1576.19
0+260		1579.62	1576.19
0+280		1579.53	1575.79
0+300	0+290.00	1579.22	1575.79
0+320		1578.97	
0+340	0+340.00	1578.76	1575.34
0+360		1578.77	1575.34
0+380		1578.63	
0+400	0+390.00	1578.44	1574.89
0+420		1578.28	1574.89
0+440	0+435.00	1578.16	1574.48
0+460		1577.63	1574.48
0+480	0+485.00	1577.40	1574.03
0+500		1576.61	1574.03
0+520		1576.02	
0+540	0+530.00	1575.19	1573.63
0+551	0+551.00	1575.24	1573.63
			1573.44

Slope %	Pipe Ø mm
S=0.9% L=50.0m	DN 225mm Concrete
S=0.9% L=50.0m	
S=0.9% L=50.0m	
S=0.9% L=45.0m	
S=0.9% L=50.0m	
S=0.9% L=45.0m	
S=0.9% L=50.0m	
S=0.9% L=50.0m	
S=0.9% L=45.0m	
S=0.9% L=50.0m	
S=0.9% L=45.0m	
S=0.9% L=21.0m	

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - CSP

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CSP-001

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+155
Manhole Location	0+000.00			0+055.00		0+105.00			0+155.00
Original ground levels	1581.56	1580.96	1580.55	1580.12	1579.66	1579.12	1578.33	1577.46	1577.20
Invert Elevations	1578.83			1577.18 1577.18		1575.68 1575.68			1574.18
Slope %		S=3.0% L=55.0m		S=3.0% L=50.0m		S=3.0% L=50.0m			
Pipe ø mm	DN 225mm Concrete								

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+155
Manhole Location	0+000.00			0+055.00		0+105.00			0+155.00
Original ground levels	1581.83	1580.77	1579.99	1579.45	1578.99	1578.92	1578.75	1578.57	1578.49
Invert Elevations	1579.65			1578.00 1578.00		1576.53 1576.53			1575.04
Slope %					S=3.0% L=50.0m		S=3.0% L=50.0m		
Pipe ø mm	DN 225mm Concrete								

Chainage	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+155
Manhole Location	0+000.00			0+055.00		0+105.00			0+155.00
Original ground levels	1581.69	1581.12	1580.88	1580.84	1580.79	1580.26	1579.93	1579.72	1579.62
Invert Elevations	1579.44			1578.34 1578.34		1577.34 1577.34			1576.34
Slope %		S=2.0% L=55.0m		S=2.0% L=50.0m		S=2.0% L=50.0m			
Pipe ø mm	DN 225mm Concrete								

Reference Drawings

REV	REVISIONS	Checked	Date	Appr. WD
B				
A				

DESIGN CONSULTANT

SINCE 1984 **Runji & Partners**
Consulting Engineers and Planners Ltd
3, Kindaruma road ,Off Ngong Road
Telephone (020) 2717213/4
Telefax (020) 2717215
P.O. Box 68053-00200,
Nairobi.

In Joint Venture With

Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi - 110 016, INDIA

Drawn Date : MAY. 2017
Name : B.M.O

Designed Date
Name : S.M.W

Checked Date
Name : N.M

Approved Date
Name : R.N

ATHI WATER WORKS DEVELOPMENT AGENCY
Africa Re-Centre,Hospital Road,Upper Hill
P.O Box 45283-0100
NAIROBI-KENYA

NAIROBI CITY WATER & SEWERAGE COMPANY (NCW&C)
Kampala Road, P.O Box 30656 - 00100,
NAIROBI -KENYA.

ENGINEERING SERVICES FOR DESIGN AND DOCUMENTATION OF PRIMARY AND SECONDARY SEWERLINES-LOT 1

Drawing Title
PROFILE - CSP - 02 & CSP- 04 & CSP - 07

Scales (A1) Hor. 1:1000 Vert. 1:100

Drg No.
WS622-L1-CSP-002