



Republic of Kenya



ATHI WATER WORKS DEVELOPMENT AGENCY

CKE 1135

NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Bidding Document Volume II

CONTENTS

Bills of Quantities

28TH MAY, 2024

Employer

**The Chief Executive Officer,
Athi Water Works Development Agency,
Athi Water Plaza, Muthaiga North Road,
off Kiambu Road
P.O. BOX 45283 - 00100, Nairobi, Kenya**

Email: info@awwda.go.ke

Project Manager

**The Technical Manager,
Athi Water Works Development Agency,
Athi Water Plaza, Muthaiga North Road,
off Kiambu Road
P.O. BOX 45283 - 00100, Nairobi, Kenya**

Email: info@awwda.go.ke

BIDDING DOCUMENTS

for

Procurement of

CKE 1135

NAIROBI WATER AND SANITATION PROJECT

Contract No.: AWWDA/AFD/NWSP/W-03/2023

**CONSTRUCTION WORKS FOR REHABILITATION OF
CENTRAL NAIROBI AREA WATER NETWORK PROJECT**

Employer: **Athi Water Works Development Agency**

Country: **Kenya**

Issued on: 28TH MAY, 2024

Bidding Documents have been compiled in the following Volumes:

- i) **Volume I** - Instructions to Bidders, Bid Data Sheet, Evaluation and Qualification Criteria, Bidding Forms, Works Requirements, Conditions of Contract and Contract Forms

- ii) **Volume II** - Bills of Quantities

- ii) **Volume III** - General and Particular Specifications and Standard Reference Numbers

- iii) **Volume IV** - Engineering Drawings

PREAMBLE TO BILL OF QUANTITIES

1. The Bills of Quantities forms part of the Contract Documents and are to be read in conjunction with the Instructions to Bidders, Conditions of Contract, Specifications and Drawings.
2. The brief description of the items in the Bills of Quantities is purely for the purpose of identification, and in no way modifies or supersedes the detailed descriptions given in the Conditions of Contract and Specifications for the full direction and description of work and materials.
3. The works in Bills indicated as 'Provisional' shall be carried out subject to Client further instructions to the main contract.
4. The Quantities set forth in the Bills of Quantities are estimated, representing substantially the work to be carried out, and are given to provide a common basis for bidding and comparing of Bids. There is no guarantee to the Contractor that he will be required to carry out all the quantities of work indicated under any one particular item or group of items in the Bill of Quantities. The basis of payment shall be the Contractor's rates and the quantities of work actually done in fulfilment of his obligation under the Contract.
5. The prices and rates inserted in the Bills of Quantities will be used for valuing the work executed, and the Engineer will only measure the whole of the works executed in accordance with this Contract.
6. A price or rate shall be entered in ink against every item in the Bills of Quantities with the exception of items that already have Provisional sums affixed thereto. The bidders are reminded that no "nil" or "included" rates or "lump-sum" discounts will be accepted. The rates for various items should include discounts if any. Bidders who fail to comply will be disqualified.
7. Provisional sums (including Dayworks) in the Bills of Quantities shall be expended in whole or in part at the discretion of the Engineer in accordance with the relevant Clauses of the Conditions of Contract.
8. The price and rates entered in the Bills of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Construction plant to be used, labour, insurance, supervision, compliance testing, materials, erection, maintenance of works, overheads and profits, taxes and duties (excluding VAT) together with all general risks, liabilities and obligations set out or implied in the Contract, transport, electricity and telephones, water, use and replenishment of all consumables, including those required under the contract by the Engineer and his staff.

9. Errors in the pricing of the Bills of Quantities will be corrected in accordance with the relevant Clause of the instructions to bidders.
10. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
11. General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
12. The method of measurement of completed work for payment shall be in accordance with the *Civil Engineering Standard Method of Measurement Version 4*.
13. "Authorised" "Directed" or "Approved" shall mean the authority, direction or approval of the Engineer.
14. Unless otherwise stated, all measurements shall be net taken on the finished work carried out in accordance with the details shown on the drawings or instructed, with no allowance for extra cuts or fills, waste or additional thickness necessary to obtain the minimum finished thickness or dimensions required in this contract. Any work performed in excess of the requirements of the plans and specifications will not be paid for, unless ordered in writing by the Engineer.
15. Units of Measurement and abbreviations used herein shall have the following meanings:

Unit	Abbreviation	Unit	Abbreviation
cubic meter	m ³ or cu m	millimeter	mm
hectare	ha	month	mth
hour	hr	number	No.
kilogram	kg	provisional sum	P.S.
kilometre	km	square meter	m ² or sq m
lump sum	L.S.	square millimeter	mm ² or sq mm
meter	m	vehicle	veh
metric ton (1,000 kg)	t	week	wk
months	mths		

16. In Volume II Items are included for Rock excavation on a volume basis. The rates shall include for breaking out and for any other additional costs and the items shall apply to work encountered within measured excavation. Different classifications have been billed separately. Rock shall be measured as a volume calculated from the thickness encountered within the plan area of a mass excavation, within the plan dimensions of a structure, or within the nominal width of a trench. The decision of the Engineer on the classification of rock encountered in excavation shall be final and binding. Note: Any excavation of murrum in whatever form will be taken as common excavation. The decision of the Engineer in classifying rock shall be final and binding. Rock in the Bill of Quantities will be itemised in three classes: -

Class 'A'

Soft rock of the type known locally as 'tuff' which in the opinion of the Engineer cannot be considered as hard rock but which considerably increases the amount of labour needed for its removal shall be known as Class 'A' rock.

Class 'B'

Very weathered phonolite lava containing many fissures and faults shall be known as hard rock. This type of rock contains stones and boulders of unweathered or incompletely formed black trap or lava. A boulder or outcrop of hard rock 1.5 cubic metres or less and grey or green building stone in a formation which is massive and geologically homogeneous, will be deemed to be Class 'B' rock.

Class 'C'

Phonolite in a formation which is massive and geologically homogeneous shall be known as Class 'C' rock.

PAGE 1 of 121

BILL No. 1 - PRELIMINARIES AND GENERAL					
Item No.	Description	Unit	Quantity	Rate (KES.)	Amount (KES.)
	Sum Brought Forward From Previous Page				
	Attendance upon the Resident Engineer's staff.				
	Salaries for staff under this item will be based on the approved Job Group Salary Scales for the Government of Kenya's Civil Service including basic pay, overtime, hardship allowance, house allowance, per diems and other allowances). The Bidder should allow for annual increments in his rates. The rates for the following staff shall consider Nairobi County as the primary place of work.				
A241.1	Drivers (Government of Kenya Job Group 'J' - 3 Nr persons	person month	75		
A241.2	Secretary (Government of Kenya Job Group 'J' - 1 Nr persons	person month	25		
A241.3	Office Assistant and messenger (Government of Kenya Job Group 'H' - 2 Nr persons	person month	50		
A241.4	Chainmen (Government of Kenya Job Group 'G' - 2 Nr person	person month	50		
A241.5	ACAD Technician (Government of Kenya Job Group 'M' - 1 Nr person	person month	25		
	Testing of Materials and Works				
A250.1	Allow for testing of construction materials as specified by Resident Engineer	Item	L.S		
A260.1	Allow for testing of the Works as per Specifications	Item	L.S		
	Project Signboards				
A279.1	Provide, sign write, erect and maintain project signboards at the Site of works as per Standard Drawing No. 6000023-HH-SD-DR-W-001 as directed by the Project Manager. Rates inclusive of statutory charges and removal after the completion of the maintenance period.	nr	2		
	Surveying and Setting Out				
A279.2	Allow for establishment of Level Datum Survey and Topographical Survey, Setting Out of the Works in accordance with Specifications of Bidding Document, Volume III. This shall include pegging of pipeline Routes and preparation of Setting Out Survey Report to the Engineer for approval. The Setting Out Works / Survey Works include the production of Survey Drawings to an agreed scale and will include the Engineering Survey of Water Distribution Mains to be rehabilitated, approximate length 136 km	Item	L.S		
	Contractor's Camps, Offices, Stores, etc.				
A310	The contractor shall set out below and fully describe and price, in the spaces provided, any or temporary work or obligation or anything in the Conditions of Contract or in the Specification not included by him in his rates elsewhere and for which he considers a separate charge is required. The prices inserted shall be considered to be fixed lump sums covering the whole of the work and as such will not be subjected to adjustment for any reason. The employer has no available land to offer for Contractor's Camp, storage of materials, etc. If the Contractor makes no entry in the space provided then the rates inserted elsewhere in the Bill will be deemed to cover all his obligations under the Contract.	Item	LS		
	i) Mobilisation, demobilization				
	ii) Setting up Contractors Camp, offices, store, yard and other facilities including equipment, temporary measures, water, electricity, etc.				
	iii) Setting out the works				
	iv) other items required by contractor				
	Page Total Carried Forward to Next Page				

BILL No. 1 - PRELIMINARIES AND GENERAL					
Item No.	Description	Unit	Quantity	Rate (KES.)	Amount (KES.)
	Sum Brought Forward From Previous Page				
A421	Provisional Sums				
	Project Supervision Vehicles				
A421.1	Allow a Provisional Sum for supply of 1 Nr 4WD Station Wagon Vehicle, to be used for supervision of works as per specifications to be approved by the Engineer. The vehicles to revert to Employer after completion of Contract.	Item	P.S.		13,000,000
A421.2	Allow a Provisional Sum for supply of 2 Nr 4WD Double Cab Pickups, to be used for supervision of works as per specifications to be approved by the Engineer. The vehicles to revert to Employer after completion of Contract.	Item	P.S.		22,500,000
A421.3	Allow a Provisional Sum for the maintenance, running, comprehensive insurance and servicing of the vehicle under Item (A421.1 and A421.2)	Item	P.S.		15,000,000
A421.4	Include percentage of Item (A421.1, A421.2 and A421.3) for profit, administration etc.	%			
	Other Provisional Sums				
A422.1	Allow a Provisional Sum to cover costs of the Employer's Counterpart Staff assigned to the Project including capacity building, training and internship, etc.	Item	P.S.		20,000,000
A422.2	Provisional sum to cater for monthly site meetings to be expended as directed by the Employer	Item	P.S.		2,500,000
A422.3	Allow a Provisional Sum to be expended for community sensitization activities as directed by the Engineer	Item	P.S.		4,000,000
A422.4	Allow a Provisional Sum for Inspection and Witness Testing of Pipes, Fittings and Equipment at manufacturer's premises by the Employer, Engineer and their representatives.	Item	P.S.		1,000,000
A422.5	Allow a Provisional Sum for Statutory Payments/ Fees requested by the Authorities for relocation of existing services (water pipelines, sewer liners power cable telcom cables, Road crossings,oil/gas pipelines, etc., Liaison with the relevant Authorities shall be the responsibility of the Contractor for the timely execution of the Works.	Item	P.S.		20,000,000
A422.6	Add% for profit, administration, attendance upon, overheads, etc. for Item A422.1 to A422.5 above.	%			
A422.7	Allow for identification of extent/limits of existing buried and surface utilities including restatement to the original status and liaison with the relevant body for inspection/approval during execution of the works. The rate shall be deemed to include repairs and restatement of any damages to the existing services as a result of execution of the works.	Item	LS		
A422.8	Allow for traffic diversion, traffic regulation; establishment, operation and removal of traffic control materials during the execution of the works. Item to include liaison with authorities for traffic management.	Item	LS		
A38	Method Related Charges, Other Items, Works / Obligations				
A381	In addition to the items listed above, tenderer may insert such items as he may require to cover items of work relating to his intended method of executing the works, other obligations as mentioned in the Conditions of Contract, Specifications, etc., costs of which are not to be considered as allowed in the rates and prices for the other items. Full description of such Items and Works should be made. If no separate charge is made hereunder, the rates in the Bills of Quantities will be deemed as covering expenses for all such Items and Works. (Tenderer can include additional sheets of paper if necessary)				
	Page Total Carried Forward to Next Page				

BILL No. 1 - PRELIMINARIES AND GENERAL					
Item No.	Description	Unit	Quantity	Rate (KES.)	Amount (KES.)
	Sum Brought Forward From Previous Page				
ESHS	<u>Environmental, Social, Health and Safety Cost Schedule as per Appendices in Vol III - Specifications</u>				
ESHS 1	Resources allocated to ESHS Management (Ref. Clause 4 of ESHS Specifications).	Item	L.S		
ESHS 2	Drafting and updating the ESHS Documentation, Reporting, Inspections (Ref. Clauses 1, 2, 3, 5, 6, 7 and 9 of ESHS Specifications). <i>[Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]</i>	Item	L.S		
ESHS 3	Implementation of the Health and Safety Plan: Meetings, health care centre, medical check-ups, emergencies and evacuations, safety protective equipment, hygiene (Ref. Clauses 1, 9, 21 to 25, 27 to 35, 37 and 38 of ESHS Specifications). <i>[Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]</i>	Item	L.S		
ESHS 4	Accommodation, Drinking Water, Meals and Transportation of Staff. (Ref. Clauses 36, 40 and 41 of ESHS Specifications). <i>[Note: The Bidder shall detail the financial conditions of the supply of accommodation, meals and transport to its staff. The cost for "Site Mobilization" should exclude all or part of the costs of these Tasks]</i>				
ESHS 4.1	Accommodation	Item	L.S		
ESHS 4.2	Meals	Item	L.S		
ESHS 4.3	Transport	Item	L.S		
ESHS 5	Training and Local Recruitment Management Costs (Ref. Clauses 8 and 39 of ESHS Specifications) <i>[Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]</i>	Item	L.S		
ESHS 6	Protection of Adjacent Areas, Biodiversity, Prevention of Erosion and Wastewater Management (Ref. Clauses 10, 11, 12, 17 and 18 of ESHS Specifications).	Item	L.S		
ESHS 7	Traffic, Noise and Atmospheric Emissions Management, Land Take (Ref. Clauses 13, 14, 42, 43 and 44 of ESHS Specifications).	Item	L.S		
ESHS 8	Waste Management (Ref. Clause 15 of ESHS Specifications).	Item	L.S		
ESHS 9	Vegetation Clearing and Site Rehabilitation (Ref. Clauses 16, 19 and 20 of ESHS Specifications). <i>[Note: The cost for "Site Mobilization" should exclude all or part of the costs associated to these Tasks]</i>	Item	L.S		
Security	<u>Security Cost Schedule</u>				
Security 1	Security Organization (Ref. Security Specifications, Article 4.1).	Item	L.S		
Security 2	Travel within the country and to the relevant area (Ref. Security Specifications, Article 4.2).	Item	L.S		
Security 3	Accommodation during assignments (Ref. Security Specifications, Article 4.3).	Item	L.S		
Security 4	Accommodation and security on project sites and worksites (Ref. Security Specifications, Article 4.4).	Item	L.S		
Security 5	Communication (Ref. Security Specifications, Article 4.5).	Item	L.S		
Other	This price may remunerate all the other services described in Articles 1 to 3 of the Security Specifications (Ref. Security Specifications, Articles 1 to 3 and 5 to 6).	Item	L.S		
PAGE TOTAL CARRIED TO GRAND SUMMARY PAGE					

PAGE 5 of 121

Bill No. 2.1 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: Loita St.(41N-47D), Koinange St.(41A-47G), Muindi Mbingu St.(41H-47A), Njugu Ln.(41C-41S), Tubman Rd.(41F-42N), University Way(41W-41A), Harry Thuku Rd.(39A-39C)					
	Sum Brought Forward From Previous Page				
	CLASS I: PIPEWORK - PIPES				
	<u>SUPPLY AND LAYING OF PIPELINES</u>				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated.				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711.1	OD 110mm HDPE	m	590		
I711.2	OD 160mm HDPE	m	2,195		
I711.3	OD 200mm HDPE	m	600		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	<u>SUPPLY AND INSTALLATION OF FITTINGS</u>				
	Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Tapers (Reducers)				
J331	DN150 x 100mm Ferrous All Flanged Reducer	nr	2		
	Double Collars (Stepped couplings/Couplings)				
J341.1	DN100mm straight coupling	nr	13		
J341.2	DN150mm straight coupling	nr	69		
J341.3	Ditto but 200mm	nr	18		
J341.4	DN100/100mm Stepped Coupling	nr	2		
	Adaptors (Flange adaptors)				
J351.1	DN 65mm flange adaptor	nr	1		
J351.2	DN 80mm flange adaptor	nr	1		
J351.3	Ditto but 100mm	nr	16		
	Page Total Carried Forward to Next Page				

Bill No. 2.1 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: Loita St.(41N-47D), Koinange St.(41A-47G), Muindi Mbingu St.(41H-47A), Njugu Ln.(41C-41S), Tubman Rd.(41F-42N), University Way(41W-41A), Harry Thuku Rd.(39A-39C)					
	Sum Brought Forward From Previous Page				
J351.4	Ditto but 150mm	nr	14		
	Straight Specials				
J381.1	DN 400mm ferrous spigot pipe, 1.2m long	nr	1		
J381.2	DN 400mm ferrous all flanged pipe, 1.2m long	nr	1		
J381.3	DN 1000mm ferrous flanged spigot pipe, 1.2m long	nr	2		
	High density polyethylene pipes (HDPE) PE 100 HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	6		
J611.2	OD 160mm, 45° Bend	nr	3		
J611.3	Ditto but 60° Bend	nr	1		
J611.4	OD 200mm, 30° Bend	nr	1		
	HDPE Junctions and Branches				
J621.1	OD 110 x 75mm Plain Ended Tee	nr	8		
J621.2	OD 110 x 110mm Plain Ended Tee	nr	2		
J621.3	Ditto but 160 x 63mm	nr	1		
J621.4	Ditto but 160 x 75mm	nr	19		
J621.5	Ditto but 160 x 110mm	nr	11		
J621.6	Ditto but 160 x 160mm	nr	2		
J621.7	Ditto but 200 x 75mm	nr	5		
J621.8	Ditto but 200 x 160mm	nr	3		
	HDPE Tapers				
J631.1	OD 160 x 110mm Plain Ended Reducer	nr	1		
J631.2	OD 200 x 110mm Plain Ended Reducer	nr	2		
	HDPE Straight specials				
J681.1	OD 63mm Stub End with flange	nr	1		
J681.2	Ditto but 75mm	nr	29		
J681.3	OD 75mm HDPE plain ended pipe, 1.2m long, cut to suit	nr	34		
J681.4	OD 110mm Stub End with flange	nr	11		
J681.5	Ditto but 160mm	nr	8		
J681.6	OD 110mm End Cap	nr	1		
J681.7	OD 110mm HDPE Plain ended Pipe, 1.2m long, cut to suit	nr	4		
J681.8	Ditto but 160mm	nr	3		
J681.9	Ditto but 200mm	nr	2		
	Gate Valves				
J811.1	DN 65mm all flanged sluice valve	nr	1		
J811.2	Ditto but 80mm	nr	1		
J811.3	Ditto but 100mm	nr	13		
J811.4	Ditto but 150mm	nr	9		
	Page Total Carried Forward to Next Page				

Bill No. 2.1		NAIROBI CENTRAL BUSINESS DISTRICT			
		Proposed Water Lines: Loita St.(41N-47D), Koinange St.(41A-47G), Muindi Mbingu St.(41H-47A), Njugu Ln.(41C-41S), Tubman Rd.(41F-42N), University Way(41W-41A), Harry Thuku Rd.(39A-39C)			
	Sum Brought Forward From Previous Page				
	Hydrants				
J901	DN 80mm fire hydrant	nr	28		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K200	Narrow Concrete chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	52		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	54		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	150		
K731.2	Ditto' - but Concrete block paved road	m	70		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	257		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	110		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume: n.e 0.1m³				
L711	Nominal Bore: n.e 150mm	nr	27		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 2.2 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 42A-57D along Wabera St, Taifa Rd and Lt. Tumbo Dr, Wabera St (42B-48), Mutual Ln (48O-42G), KaundaSt (48P-42J), Kimathi St (42F-42J), Mama Ngina St (48R-48V), Agha Khan Walk (48AK-57I), Nkurumah Ln (48AP-48AZ)					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 160mm HDPE	m	1,460		
A260.2	OD 200mm HDPE	m	1,190		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.3	OD 160mm HDPE	m	1,460		
A260.4	OD 200mm HDPE	m	1,190		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated.				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711.1	OD 160mm	m	1,460		
I711.2	OD 200mm	m	1,190		
	Page Total Carried Forward to Next Page				

Bill No. 2.2 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 42A-57D along Wabera St, Taifa Rd and Lt. Tumbo Dr, Wabera St (42B-48), Mutual Ln (48O-42G), KaundaSt (48P-42J), Kimathi St (42F-42J), Mama Ngina St (48R-48V), Agha Khan Walk (48AK-57I), Nkurumah Ln (48AP-48AZ)					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	<u>SUPPLY AND INSTALLATION OF FITTINGS</u> Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings.				
	Junctions and Branches				
J321.1	DN 200 x 150mm Ferrous All Flanged Tee	nr	3		
J321.2	DN 200 x 200mm Ferrous All Flanged Tee	nr	2		
	Tapers				
J331.1	DN 200 x 100mm Ferrous All flanged Reducer	nr	1		
J331.2	DN 200 x 150mm Ferrous All flanged Reducer	nr	1		
	Double Collars (Couplings/Stepped couplings)				
J341.1	DN 100mm Straight Coupling	nr	1		
J341.2	DN 150mm Straight Coupling	nr	57		
J341.3	Ditto but 200mm	nr	50		
J341.4	DN 150/150mm Stepped Coupling	nr	4		
J341.5	Ditto but 200/200mm	nr	10		
	Adaptors				
J351.1	DN 80mm flange adaptor	nr	6		
J351.2	Ditto but 100mm	nr	7		
J351.3	Ditto but 150mm	nr	13		
	Straight Specials				
J381.1	DN 100mm ferrous flanged spigot pipe, 1.2m long	nr	1		
J381.2	Ditto but 150mm	nr	4		
J381.3	Ditto but 200mm	nr	10		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	4		
J611.2	OD 160mm, 30° Bend	nr	2		
J611.3	Ditto but 60° Bend	nr	1		
J611.4	Ditto but 90° Bend	nr	2		
J611.5	OD 200mm, 90° Bend	nr	4		
	Page Total Carried Forward to Next Page				

Bill No. 2.2 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 42A-57D along Wabera St, Taifa Rd and Lt. Tumbo Dr, Wabera St (42B-48), Mutual Ln (48O-42G), KaundaSt (48P-42J), Kimathi St (42F-42J), Mama Ngina St (48R-48V), Agha Khan Walk (48AK-57I), Nkurumah Ln (48AP-48AZ)					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Junctions and Branches				
J621.1	OD 160 x 160mm Plain Ended Tee	nr	5		
J621.2	OD 160 x 110mm Plain Ended Tee	nr	5		
J621.3	OD 160 x 75mm Plain Ended Tee	nr	14		
J621.4	OD 200 x 75mm Plain Ended Tee	nr	13		
J621.5	OD 200 x 110mm Plain Ended Tee	nr	1		
J621.6	OD 200 x 160mm Plain Ended Tee	nr	7		
	HDPE Tapers				
J631.1	OD 160 x 110mm Plain Ended HDPE Reducer	nr	1		
	Straight Specials				
J681.1	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	25		
J681.2	OD 75mm Stub End with flange	nr	27		
J681.3	Ditto but 110mm	nr	7		
J681.4	OD 160mm plain ended pipe, 1.2m long, cut to suit	nr	1		
J681.5	OD 160mm Stub End with flange	nr	11		
J681.6	OD 160mm End Cap	nr	2		
J681.7	Ditto but 200mm	nr	1		
J681.8	OD 200mm plain ended pipe, 1.2m long, cut to suit	nr	1		
	Valves				
J811.1	DN 80mm all flanged sluice valve	nr	6		
J811.2	Ditto but 100mm	nr	8		
J811.3	Ditto but 150mm	nr	15		
J811.4	Ditto but 200mm	nr	4		
	Hydrants				
J901	DN 80mm fire hydrant	nr	21		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 900mm x 1200mm, depth n.e. 2m	nr.	1		
K152.2	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	3		
	Page Total Carried Forward to Next Page				

Bill No. 2.2 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 42A-57D along Wabera St, Taifa Rd and Lt. Tumbo Dr, Wabera St (42B-48), Mutual Ln (48O-42G), KaundaSt (48P-42J), Kimathi St (42F-42J), Mama Ngina St (48R-48V), Agha Khan Walk (48AK-57I), Nkurumah Ln (48AP-48AZ)					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
K152.3	Chamber internal dimensions 1200mm x 1500mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	46		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	53		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm	m	90		
K731.2	Ditto' - but Concrete block paved road	m	40		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	152		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	65		
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	28		
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	8		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	L.S		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 2.3 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines 42E-49E, 39C-42E along Moi Avenue and Tom Mboya Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 315mm HDPE	m	920		
A260.2	OD 400mm HDPE	m	730		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.3	OD 315mm HDPE	m	920		
A260.4	OD 400mm HDPE	m	730		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated. The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I731.1	OD 315mm	m	920		
I731.2	OD 400mm	m	730		
	Page Total Carried Forward to Next Page				

[illegible]

Bill No. 2.3 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines 42E-49E, 39C-42E along Moi Avenue and Tom Mboya Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J351.4	Ditto but 150mm	nr	3		
J351.5	Ditto but 400mm	nr	1		
	Straight Specials				
J381.1	DN 65mm ferrous flanged spigot pipe, 1.2m long	nr	1		
J381.2	Ditto but 100mm	nr	1		
J381.3	Ditto but 150mm	nr	1		
J381.4	Ditto but 200mm	nr	8		
J382	DN 300mm ferrous flanged spigot pipe, 1.2m long	nr	14		
J383	DN 400mm ferrous flanged spigot pipe, 1.2m long	nr	9		
J381.7	DN 400mm all flanged ferrous spigot pipe, 1.2m long	nr	1		
J381.8	DN 400mm plain ended ferrous spigot pipe, 1.2m long	nr	1		
J381.9	DN 1000mm ferrous flanged spigot pipe, 1.2m long	nr	2		
	High density polyethylene pipes (HDPE) PE 100 HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	4		
J613.1	OD 315mm, 90° Bend	nr	2		
J613.2	OD 400mm, 45° Bend	nr	2		
	Junctions and Branches				
J623.1	OD 315 x 75mm Plain Ended Tee	nr	3		
J623.2	OD 315 x 110mm Plain Ended Tee	nr	1		
J623.3	OD 315 x 160mm Plain Ended Tee	nr	1		
J623.4	OD 400 x 75mm Plain Ended Tee	nr	16		
J623.5	OD 400 x 110mm Plain Ended Tee	nr	1		
J623.6	OD 400 x 160mm Plain Ended Tee	nr	2		
	Straight Specials				
J681.3	OD 75mm HDPE plain ended pipe, 1.2m long, cut to suit	nr	24		
J683	Ditto but 400mm	nr	1		
J681.4	OD 75mm Stub End with flange	nr	20		
J681.5	Ditto but 110mm	nr	2		
J681.6	Ditto but 160mm	nr	3		
	Valves				
J811.1	DN 65mm all flanged sluice valve	nr	1		
J811.2	Ditto but 80mm	nr	1		
J811.3	Ditto but 100mm	nr	2		
J811.4	Ditto but 150mm	nr	3		
J811.5	Ditto but 200mm	nr	8		
	Page Total Carried Forward to Next Page				

Bill No. 2.3 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines 42E-49E, 39C-42E along Moi Avenue and Tom Mboya Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J812	Ditto but 300mm	nr	2		
J813	Ditto but 400mm	nr	2		
	UltraSonic water meter				
J903	DN 400mm flanged water meters	nr	1		
J321	DN 400mm flanged Y-type strainers	nr	1		
	Hydrants				
J901	DN 80mm fire hydrant	nr	19		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	1		
K152.2	Ditto but dimensions 1200mm x 1200mm	nr.	9		
K152.3	Ditto but dimensions 1500mm x 1500mm	nr.	1		
K152.4	Ditto but dimensions 2500mm x 1200mm	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	26		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	40		
	Reinstatements				
K732.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 500mm.	m	95		
K732.2	Ditto' - but Concrete block paved road	m	40		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 500mm	m	158		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	68		
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks <u>Thrust blocks for tees, end caps and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	8		
	Page Total Carried Forward to Next Page				

Bill No. 2.3 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines 42E-49E, 39C-42E along Moi Avenue and Tom Mboya Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	8		
	Volume:- 0.2 - 0.5m³				
L732	To nominal bore 200 - 300mm	nr	2		
	Volume:- 0.5 - 1m³				
L743	To nominal bore 350mm	nr	13		
	Volume:- 1.0 - 2.0m³				
L753	To nominal bore 400mm	nr	9		
	Volume:- 2.0 - 4.0m³				
L765	To nominal bore 1000mm	nr	2		
X	Miscellaneous Works Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 2.4 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 43D-48AH, 48AG-43J, 43G-48AJ along Tom Mboya St., Accra Rd, Voi Rd, Mfangano Ln and Ronald Ngala St.					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS Testing of the Works Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD110mm HDPE	m	295		
A260.2	OD160mm HDPE	m	150		
A260.3	OD200mm HDPE	m	1000		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.4	OD110mm HDPE	m	295		
A260.5	OD160mm HDPE	m	150		
A260.6	OD200mm HDPE	m	1,000		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES SUPPLY AND LAYING OF PIPELINES Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16 Replace existing water mains by pipe cracking or bursting method to diameters indicated. The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711.1	OD 110mm HDPE	m	295		
I711.2	OD 160mm HDPE	m	150		
	Page Total Carried Forward to Next Page				

Bill No. 2.4 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 43D-48AH, 48AG-43J, 43G-48AJ along Tom Mboya St., Accra Rd, Voi Rd, Mfangano Ln and Ronald Ngala St.					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
I711.3	OD 200mm HDPE	m	1,000		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings Junctions and Branches				
J322	DN 300 x 200mm All Flanged Tee	nr	1		
	Double Collars				
J341.1	DN 100/100mm stepped coupling	nr	2		
J341.2	DN 100mm straight coupling	nr	4		
J341.3	DN 150mm straight coupling	nr	13		
J341.4	Ditto but 200mm	nr	16		
J341.5	DN 200/200mm Stepped Coupling	nr	1		
J342	Ditto but 300/300mm	nr	2		
	Adaptors (Flange adaptors)				
J351.1	DN 65mm flange adaptor	nr	2		
J351.2	Ditto but 100mm	nr	2		
J351.3	Ditto but 150mm	nr	2		
	Straight Specials				
J381.1	DN 300mm Flanged Spigot Pipe, 1.2m long	nr	2		
	High density polyethylene pipes (HDPE) PE 100 Bends				
J611.1	OD 75mm, 90° Bend	nr	2		
J611.2	OD 160mm, 30°	nr	1		
J611.3	OD 200mm, 60°	nr	1		
	Junctions and Branches				
J621.1	OD 110 x 75mm Plain Ended Tee	nr	2		
J621.2	OD 110 x 110mm Plain Ended Tee	nr	1		
J621.3	Ditto but 160 x 75mm	nr	3		
J621.4	Ditto but 160 x 160mm	nr	1		
J621.5	Ditto but 200 x 75mm	nr	5		
J621.6	Ditto but 200 x 110mm	nr	2		
	Tapers				
J631	OD 160 x 110mm Plain Ended Reducer	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 2.4 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 43D-48AH, 48AG-43J, 43G-48AJ along Tom Mboya St., Accra Rd, Voi Rd, Mfangano Ln and Ronald Ngala St.					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Straight specials				
J681.1	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	10		
J681.2	OD 75mm Stub End with flange	nr	10		
J681.3	OD 110mm End Cap	nr	1		
J681.4	OD 110mm Stub End with flange	nr	2		
J681.5	Ditto but 160mm	nr	2		
	Gate Valves				
J811.1	DN 65mm all flanged sluice valve	nr	2		
J811.2	Ditto but 100mm	nr	2		
J811.3	Ditto but 150mm	nr	2		
J811.4	Ditto but 200mm	nr	1		
	Hydrants				
J901	DN 80mm fire hydrant	nr	8		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
K152	Manholes Chamber internal dimensions 1200mm x 1500mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	14		
K82	Marker Posts Supply and fix marker posts with required labelling as shown on standard drawings	nr	13		
K731.1	Reinstatements Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	70		
K731.2	Ditto' - but Concrete block paved road	m	30		
K742.1	Reinstatement of footpaths Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	117		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	50		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks <u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc Volume: n.e 0.1m³				
L711	Nominal Bore: n.e 200mm	nr	6		
	Page Total Carried Forward to Next Page				

Bill No. 2.4 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 43D-48AH, 48AG-43J, 43G-48AJ along Tom Mboya St., Accra Rd, Voi Rd, Mfangano Ln and Ronald Ngala St.					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Volume: n.e 0.2m³				
L721	Nominal Bore: n.e 200mm	nr	1		
	Volume: n.e 1m³				
L742	Nominal Bore: n.e 300mm	nr	1		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
TOTAL CARRIED FORWARD TO COLLECTION SHEET					

Bill No. 2.5 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 49Q-49W, 49W-50H, 49W-50H along River Rd and Landhies Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	<u>NOTE:</u> The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	<u>CLASS A - GENERAL ITEMS</u>				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 160mm HDPE	m	1,345		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.2	OD 160mm HDPE	m	1,345		
A3	<u>Method Related Charges</u>				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item			
	<u>CLASS I: PIPEWORK - PIPES SUPPLY AND LAYING OF PIPELINES</u>				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated. The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711	OD 160mm HDPE	m	1345		
	Page Total Carried Forward to Next Page				

Bill No. 2.5 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 49Q-49W, 49W-50H, 49W-50H along River Rd and Landhies Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Tapers				
J331	DN150x100mm Ferrous All Flanged Reducer	nr	1		
	Double Collars				
J341.1	DN 65/50mm stepped coupling	nr	1		
J341.2	Ditto but 100/100mm	nr	1		
J341.3	DN 150mm straight coupling	nr	24		
	Adaptors				
J351.1	DN 65mm flange adaptor	nr	1		
J351.2	Ditto but 80mm	nr	1		
J351.3	Ditto but 100mm	nr	5		
J351.4	Ditto but 150mm	nr	3		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 63mm, 45°	nr	1		
J611.2	Ditto but 110mm	nr	1		
J611.3	OD 75mm, 90° Bend	nr	2		
J611.4	OD 160mm, 60°	nr	2		
J611.5	OD 160mm, 90°	nr	1		
	HDPE Junctions and Branches				
J621.1	OD 160 x 63mm Plain Ended Tee	nr	1		
J621.2	Ditto but 160 x 75mm	nr	8		
J621.3	Ditto but 160 x 110mm	nr	4		
J621.4	Ditto but 160 x 160mm	nr	2		
	HDPE Straight specials				
J681.1	OD 63mm Stub End with flange	nr	1		
J681.2	Ditto but 75mm	nr	8		
J681.3	Ditto but 110mm	nr	4		
J681.4	Ditto but 160mm	nr	2		
J681.5	OD 63mm HDPE Plain Ended Pipe, 1.2m long, Cut to Suit	nr	1		
J681.6	Ditto but 75mm	nr	9		
	Page Total Carried Forward to Next Page				

Bill No. 2.5 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 49Q-49W, 49W-50H, 49W-50H along River Rd and Landhies Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J681.7	Ditto but 110mm	nr	1		
	Gate Valves				
J811.1	DN 65mm all flanged sluice valve	nr	1		
J811.2	Ditto but 80mm	nr	1		
J811.3	Ditto but 100mm	nr	4		
J811.4	Ditto but 150mm	nr	2		
	Hydrants				
J901	DN 80mm fire hydrant	nr	7		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
K200	Manholes Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	15		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	14		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	65		
K731.2	Ditto - but Concrete block paved road	m	25		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	105		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	45		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume: n.e 0.1m³				
L711	Nominal Bore: n.e 200mm	nr	9		
X	Miscellaneous Works Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 2.6 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 56A-49P along Haille Selassie Avenue and Racecourse Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	<p>NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.</p>				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 250mm HDPE	m	980		
A260.2	OD 315mm HDPE	m	650		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.3	OD 250mm HDPE	m	980		
A260.4	OD 315mm HDPE	m	650		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated.				
	<p>The rates entered against the items in this section shall include costs for</p> <ul style="list-style-type: none"> - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. <p>Fittings in good condition to be handed over to Client as per engineer's assessment.</p>				
I721	OD 250mm	m	980		
I731	OD 315mm	m	650		
	Page Total Carried Forward to Next Page				

Bill No. 2.6 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 56A-49P along Haille Selassie Avenue and Racecourse Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings Junctions and Branches				
J321.1	DN 200 x 150mm Ferrous All Flanged Tee	nr	1		
J322.1	Ditto but 250 x 50mm	nr	1		
J322.2	Ditto but 250 x 80mm	nr	2		
J322.3	DN 250 x 200mm Ferrous All Flanged Tee	nr	1		
J322.4	Ditto but 250 x 250mm	nr	1		
J322.5	Ditto but 300 x 50mm	nr	1		
J323.1	DN 250 x 25mm Saddle Clamp	nr	1		
J323.1	Ditto but DN 250 x 65mm	nr	1		
J323.1	Ditto but DN 250 x 80mm	nr	1		
J323.1	Ditto but DN 300 x 80mm	nr	1		
J322.10	DN 300 x 150mm Ferrous All Flanged Tee	nr	1		
J322.11	Ditto but 300 x 200mm	nr	1		
J325	DN 1000 x 300mm Ferrous All Flanged Tee	nr	1		
	Tapers				
J332	DN 300 x 250mm Ferrous All Flanged Reducer	nr	1		
	Double Collars-Couplings/Stepped couplings				
J341.1	DN 80mm straight coupling	nr	2		
J341.2	Ditto but 150mm	nr	1		
J341.3	DN 150/150mm stepped coupling	nr	1		
J341.4	Ditto but 200/200mm	nr	1		
J341.5	Ditto but 225/200mm	nr	1		
J341.6	Ditto but 250/250mm	nr	7		
J341.7	DN 250mm straight coupling	nr	28		
J341.8	Ditto but 300mm	nr	20		
J341.9	DN 300/300mm stepped coupling	nr	9		
J342	DN 1000mm straight coupling	nr	2		
	Adaptors				
J351.1	DN 80mm flange adaptor	nr	1		
J351.2	Ditto but 100mm	nr	7		
J351.3	Ditto but 150mm	nr	5		
J352	Ditto but 300mm	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 2.6 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 56A-49P along Haille Selassie Avenue and Racecourse Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Straight Specials				
J381.1	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	2		
J381.2	Ditto but 150mm	nr	2		
J381.3	Ditto but 200mm	nr	2		
J382.1	Ditto but 250mm	nr	9		
J382.2	Ditto but 300mm	nr	9		
J382.3	DN 300mm ferrous all flanged pipe, 1.2m long	nr	1		
J385	DN 1000mm ferrous flanged spigot pipe, 1.2m long	nr	2		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611	OD 75mm, 90° Bend	nr	2		
J612	OD 250mm, 30° Bend	nr	1		
J613	OD 315mm, 45° Bend	nr	2		
	Junctions and Branches				
J622.1	OD 250 x 75mm Plain Ended Tee	nr	5		
J622.2	OD 250 x 110mm Plain Ended Tee	nr	5		
J622.3	Ditto but 250 x 160mm	nr	2		
J623.1	Ditto but 315 x 75mm	nr	4		
J623.2	Ditto but 315 x 110mm	nr	2		
J623.3	Ditto but 315 x 160mm	nr	3		
	Straight Specials				
J681.1	OD 63mm plain ended pipe, 1.2m long	nr	1		
J681.2	OD 63mm Stub End with flange	nr	2		
J681.3	Ditto but 75mm	nr	13		
J681.4	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	13		
J681.5	OD 110mm Stub End with flange	nr	7		
J681.6	Ditto but 160mm	nr	5		
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	1		
J811.2	Ditto but 65mm	nr	3		
J811.3	Ditto but 80mm	nr	2		
J811.4	Ditto but 100mm	nr	7		
J811.5	Ditto but 150mm	nr	7		
J811.6	Ditto but 200mm	nr	2		
J812.1	Ditto but 250mm	nr	3		
J812.2	Ditto but 300mm	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 2.6 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 56A-49P along Haile Selassie Avenue and Racecourse Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Air Valves				
J861	DN 50mm reinforced polyamide combination air valve	nr	2		
	UltraSonic water meter				
J902	DN 300mm flanged water meters	nr	1		
J322.6	DN 300mm flanged Y-type strainers	nr	1		
	Hydrants				
J901	DN 80mm fire hydrant	nr	9		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	1		
K152.2	Chamber internal dimensions 1200mm x 1000mm, depth n.e. 2m	nr.	2		
K152.3	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	1		
K152.4	Chamber internal dimensions 1500mm x 1200mm, depth n.e. 2m	nr.	1		
K200	Narrow concrete chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	26		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	34		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	60		
K731.2	Ditto - but Concrete block paved road	m	25		
K732.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 500mm.	m	40		
K732.2	Ditto - but Concrete block paved road	m	20		
	Reinstatement of footpaths				
K741.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	51		
K741.2	Ditto - but concrete and concrete block paved footpaths	m	34		
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 500mm	m	22		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	15		
	Page Total Carried Forward to Next Page				

Bill No. 2.6 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 56A-49P along Haille Selassie Avenue and Racecourse Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, end caps and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	18		
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	3		
	Volume:- 0.2 - 0.5m³				
L732	To nominal bore 250mm	nr	5		
	Volume:- 0.5 - 1m³				
L742	To nominal bore 300mm	nr	6		
	Volume:- 2.0 - 4.0m³				
L765	To nominal bore 1000mm	nr	2		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 2.7 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 47F-42E along Kenyatta Avenue					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 315mm HDPE	m	850		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.2	OD 315mm HDPE	m	850		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated. The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I731	OD 315mm	m	850		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Page Total Carried Forward to Next Page				

Bill No. 2.7 NAIROBI CENTRAL BUSINESS DISTRICT Proposed Water Lines: 47F-42E along Kenyatta Avenue					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321	DN 300 x 50mm Ferrous All Flanged Tee	nr	1		
J322.1	DN 400 x 65mm Saddle Clamp	nr	1		
J322.2	DN 400 x 200mm Ferrous All Flanged Tee	nr	2		
J323	DN 1000 x 300mm Ferrous All Flanged Tee	nr	1		
	Double Collars-Couplings/Stepped couplings				
J341.1	DN 200/200mm stepped coupling	nr	2		
J342.1	Ditto but 300/300mm	nr	5		
J342.2	DN 300mm straight coupling	nr	27		
J343	DN 400/400mm stepped coupling	nr	4		
J345	DN 1000mm straight coupling	nr	2		
	Adaptors				
J351.1	DN 65mm flange adaptor	nr	1		
J351.2	Ditto but 100mm	nr	4		
J351.3	Ditto but 150mm	nr	5		
J351.4	Ditto but 300mm	nr	1		
	Straight Specials				
J381.1	DN 200mm ferrous flanged spigot pipe, 1.2m long	nr	2		
J382.1	Ditto but 300mm	nr	3		
J382.2	DN 300mm ferrous all flanged pipe, 1.2m long	nr	1		
J382.3	DN 300mm ferrous plain ended pipe, 1.2m long	nr	1		
J383	DN 400mm ferrous flanged spigot pipe, 1.2m long	nr	4		
J385	Ditto but 1000mm	nr	2		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611	OD 75mm, 90° Bend	nr	1		
J613	OD 315mm, 30° Bend	nr	1		
	Junctions and Branches				
J623.1	OD 315 x 75mm Plain Ended Tee	nr	5		
J623.2	Ditto but 315 x 110mm	nr	3		
J623.3	Ditto but 315 x 160mm	nr	5		
	Straight Specials				
J681.1	OD 63mm plain ended pipe, 1.2m long	nr	1		
J681.2	OD 63mm Stub End with flange	nr	1		
J681.3	Ditto but 75mm	nr	5		
J681.4	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	6		
	Page Total Carried Forward to Next Page				

Bill No. 2.7 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 47F-42E along Kenyatta Avenue					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J681.5	OD 110mm Stub End with flange	nr	3		
J681.6	Ditto but 160mm	nr	5		
J683	OD 315mm plain ended pipe, 1.2m long, cut to suit	nr	3		
	Valves				
J811.1	DN 65mm all flanged sluice valve	nr	1		
J811.2	Ditto but 100mm	nr	3		
J811.3	Ditto but 150mm	nr	5		
J811.4	Ditto but 200mm	nr	2		
J812	Ditto but 300mm	nr	1		
	Air Valves				
J861	DN50mm reinforced polyamide combination air valve	nr	1		
	UltraSonic water meter				
J902	DN300mm flanged water meters	nr	1		
J322	DN300mm flanged Y-type strainers	nr	1		
	Hydrants				
J901	DN 80mm fire hydrant	nr	5		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	3		
K152.2	Chamber internal dimensions 1500mm x 1200mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	14		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	20		
	Reinstatements				
K732.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 500mm.	m	55		
K732.2	Ditto' - but Concrete block paved road	m	25		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 500mm	m	93		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	40		
	Page Total Carried Forward to Next Page				

Bill No. 2.7 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Lines: 47F-42E along Kenyatta Avenue					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, end caps and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 200mm	nr	10		
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	2		
	Volume:- 0.5 - 1.0m³				
L742	To nominal bore 300mm	nr	1		
	Volume:- 1.0 - 2.0m³				
L753	To nominal bore 400mm	nr	3		
	Volume:- 2.0 - 4.0m³				
L765	To nominal bore 1000mm	nr	1		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

PAGE 34 of 121

Bill No. 2.8 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Line 42M-49P along River Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J322	DN 250 x150mm Ferrous All Flanged Tee	nr	1		
	Tapers				
J332	DN 250 x 150mm Ferrous All Flanged Reducer	nr	1		
	Double Collars-Couplings/Stepped couplings				
J341.1	DN 150/150mm stepped coupling	nr	1		
J341.2	DN 150mm straight coupling	nr	55		
J342	DN 250/250mm stepped coupling	nr	1		
	Adaptors				
J351.1	DN 65mm flange adaptor	nr	5		
J351.2	Ditto but 100mm	nr	7		
J351.3	Ditto but 150mm	nr	5		
J351.4	Ditto but 200mm	nr	1		
	Straight Specials				
J381.1	DN 150mm ferrous flanged spigot pipe, 1.2m long	nr	1		
J381.2	DN 150mm ferrous all flanged spigot pipe, 1.2m long	nr	1		
J381.3	DN 150mm ferrous plain ended spigot pipe, 1.2m long	nr	1		
J381.4	DN 250mm ferrous flanged spigot pipe, 1.2m long	nr	1		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	2		
J611.2	OD 160mm, 30° Bend	nr	1		
J611.3	Ditto but 60°	nr	1		
J611.4	Ditto but 90°	nr	1		
	Junctions and Branches				
J621.1	OD 160 x 63mm Plain Ended Tee	nr	1		
J621.2	Ditto but 160 x 75 mm	nr	13		
J621.3	Ditto but 160 x 110 mm	nr	7		
J621.4	Ditto but 160 x 160 mm	nr	4		
	Page Total Carried Forward to Next Page				

Bill No. 2.8 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Line 42M-49P along River Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Tapers				
J331.1	OD 160 x 75mm Plain Ended Reducer	nr	1		
J331.2	Ditto but 200 x 160 mm	nr	1		
	Straight Specials				
J681.1	OD 63mm Stub End with flange	nr	1		
J681.2	Ditto but 75mm	nr	14		
J681.3	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	12		
J681.4	OD 110mm Stub End with flange	nr	7		
J681.5	Ditto but 160mm	nr	4		
J681.6	OD 160mm plain ended pipe, 1.2m long	nr	1		
J681.7	OD 200mm Stub End with flange	nr	1		
	Valves				
J811.1	DN 65mm all flanged sluice valve	nr	5		
J811.2	Ditto but 100mm	nr	8		
J811.3	Ditto but 150mm	nr	6		
J811.4	Ditto but 200mm	nr	1		
	UltraSonic water meter				
J901.1	DN 150mm flanged water meters	nr	1		
J321	DN 150mm flanged Y-type strainers	nr	1		
	Hydrants				
J901.2	DN 80mm fire hydrant	nr	10		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
K152	Manholes Chamber internal dimensions 1200mm x 1000mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	27		
K63	Crossings Construction of new HDPE pipeline using horizontal directional drilling or approved equivalent trenchless method. High density polyethylene pipes (HDPE) PE 100 - PN 16 and fusion bonded epoxy steel pipe PN16 sleeve as per standard drawing No.6000023-HH-SD-DR-W-009 (Cost of pipes measured seperately). The rates to include supply, transport to site and store in secure place. Transport from site store, lay and joint HDPE pipes by 'butt fusion' welding; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation, backfilling and final reinstatement. Depth n.e 2m				
	Page Total Carried Forward to Next Page				

Bill No. 2.8 NAIROBI CENTRAL BUSINESS DISTRICT					
Proposed Water Line 42M-49P along River Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
K631	Road crossing, OD 160mm	m	20		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	31		
	Reinstatements				
K732.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	80		
K732.2	Ditto' - but Concrete block paved road	m	35		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	134		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	58		
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, end caps and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 200mm	nr	19		
	Volume:- 0.2 - 0.5m³				
L732	To nominal bore 200 - 300mm	nr	3		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

	Bill 2 COLLECTION SHEET	
	NAIROBI CENTRAL BUSINESS DISTRICT	
SECTION	DESCRIPTION	TOTAL AMOUNT (Kshs.)
	BILL No. 2.1	
	BILL No. 2.2	
	BILL No. 2.3	
	BILL No. 2.4	
	BILL No. 2.5	
	BILL No. 2.6	
	BILL No. 2.7	
	BILL No. 2.8	
TOTAL EXCLUSIVE OF VAT CARRIED TO SUMMARY SHEET		

PAGE 39 of 121

Bill No. 3.1 Central Industrial Area Proposed Water Lines:77A-67A, 76H-77E, 76G-77F, 85J-78E, 85G-78E, 85D-86F, 85C-86C, 85A-86B, 98E-86A, 98I-100A, 87B-79C, 85G-79A and 99A-78A. 59B-65A, 65E-75T, 65E-75M, 75L-66L, 66A-76P, 76S-66E in Industrial Area					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	<p>Replace existing water mains by pipe cracking or bursting method to diameters indicated.</p> <p>The rates entered against the items in this section shall include costs for</p> <ul style="list-style-type: none"> - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. <p>Fittings in good condition to be handed over to Client as per engineer's assessment.</p>				
I711.1	OD 110mm HDPE	m	5,500		
I711.2	OD 160mm HDPE	m	3,310		
I711.3	OD 200mm HDPE	m	3,540		
I721.1	OD 250mm HDPE	m	170		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	<p>SUPPLY AND INSTALLATION OF FITTINGS</p> <p>Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.</p>				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321.1	DN 150 x 50mm All Flanged Tee	nr	1		
J321.2	DN 150 x 50mm Saddle Clamp	nr	2		
J321.4	DN 150 x 150mm All Flanged Tee	nr	1		
J321.3	DN 200 x 200mm All Flanged Tee	nr	6		
J322.1	Ditto but 250 x 250mm	nr	1		
	Tapers				
J331.1	DN200 x 150mm All Flanged Reducer	nr	2		
J331.2	DN400 x 250mm All Flanged Reducer	nr	1		
	Double Collars (Couplings/Stepped couplings)				
J341.1	DN100mm Straight Coupling	nr	84		
J341.2	Ditto but 150mm	nr	86		
J341.3	DN150/150mm Stepped Coupling	nr	6		
J341.4	Ditto but 200/200mm	nr	15		
J341.5	DN 200mm Straight Coupling	nr	54		
J342.1	Ditto but 250mm	nr	8		
J343.1	DN400/400mm Stepped Coupling	nr	2		
J343.2	DN 400mm Straight Coupling	nr	3		
	Page Total Carried Forward to Next Page				

Bill No. 3.1 Central Industrial Area					
Proposed Water Lines:77A-67A, 76H-77E, 76G-77F, 85J-78E, 85G-78E, 85D-86F, 85C-86C, 85A-86B, 98E-86A, 98I-100A, 87B-79C, 85G-79A and 99A-78A. 59B-65A, 65E-75T, 65E-75M, 75L-66L, 66A-76P, 76S-66E in Industrial Area					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Adaptors				
J351.1	DN 50mm flange adaptor	nr	2		
J351.2	Ditto but 65mm	nr	3		
J351.3	Ditto but 80mm	nr	2		
J351.4	Ditto but 100mm	nr	13		
J351.5	Ditto but 150mm	nr	6		
	Straight Specials				
J381.1	DN 50mm flanged spigot pipe, 1.2m long	nr	1		
J381.2	Ditto but 150mm	nr	5		
J381.3	Ditto but 200mm	nr	18		
J381.4	Ditto but 250mm	nr	4		
J381.5	Ditto but 400mm	nr	1		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	64		
J611.2	OD 110mm, 90° Bend	nr	2		
J611.3	OD 110mm, 60° Bend	nr	1		
J611.4	OD 160mm, 90° Bend	nr	5		
J611.5	OD 200mm, 90° Bend	nr	2		
J611.6	Ditto but 45°	nr	1		
J611.7	Ditto but 60°	nr	2		
J612.1	OD 250mm, 45° Bend	nr	1		
J612.2	Ditto but 30°	nr	1		
	Junctions and Branches				
J621.1	OD 110 x 75mm Plain Ended Tee	nr	38		
J621.2	Ditto but 110 x 110mm	nr	3		
J621.3	Ditto but 160 x 63mm	nr	2		
J621.4	Ditto but 160 x 75mm	nr	22		
J621.5	Ditto but 160 x 110mm	nr	9		
J621.6	Ditto but 160 x 160mm	nr	7		
J621.7	Ditto but 200 x 75mm	nr	21		
J621.8	Ditto but 200 x 110mm	nr	1		
J621.9	Ditto but 200 x 110mm	nr	1		
J623.1	Ditto but 250 x 75mm	nr	1		
J623.2	Ditto but 400 x 160mm	nr	2		
	Page Total Carried Forward to Next Page				

Bill No. 3.1 Central Industrial Area					
Proposed Water Lines:77A-67A, 76H-77E, 76G-77F, 85J-78E, 85G-78E, 85D-86F, 85C-86C, 85A-86B, 98E-86A, 98I-100A, 87B-79C, 85G-79A and 99A-78A. 59B-65A, 65E-75T, 65E-75M, 75L-66L, 66A-76P, 76S-66E in Industrial Area					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Straight Specials				
J681.1	OD 50mm Stub End with flange	nr	1		
J681.2	OD 63mm Stub End with flange	nr	2		
J681.3	Ditto but 75mm	nr	82		
J681.4	Ditto but 110mm	nr	11		
J681.5	OD 50mm plain ended pipe, 1.2m long, cut to suit	nr	1		
J681.6	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	143		
J681.7	OD 110mm plain ended pipe, 1.2m long, cut to suit	nr	1		
J681.8	OD 160mm Stub End with flange	nr	8		
J681.9	OD 400mm plain ended pipe, 1.2m long, cut to suit	nr	1		
J682.1	OD110mm End Cap	nr	13		
J682.2	OD160mm End Cap	nr	6		
J682.3	OD250mm End Cap	nr	1		
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	3		
J811.2	Ditto but 65mm	nr	3		
J811.2	Ditto but 80mm	nr	2		
J811.3	Ditto but 100mm	nr	12		
J811.4	Ditto but 150mm	nr	6		
J811.5	Ditto but 200mm	nr	5		
J811.6	Ditto but 250mm	nr	2		
	Air Valves				
J861.1	DN 50mm reinforced polyamide combination air valve	nr	1		
	Hydrants				
J901	DN 80mm fire hydrant	nr	77		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	3		
K152.2	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	6		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	104		
	Page Total Carried Forward to Next Page				

Bill No. 3.1 Central Industrial Area					
Proposed Water Lines:77A-67A, 76H-77E, 76G-77F, 85J-78E, 85G-78E, 85D-86F, 85C-86C, 85A-86B, 98E-86A, 98I-100A, 87B-79C, 85G-79A and 99A-78A. 59B-65A, 65E-75T, 65E-75M, 75L-66L, 66A-76P, 76S-66E in Industrial Area					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	115		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	250		
K731.2	Ditto' - but Concrete block paved road	m	105		
K731.3	Ditto' - but murrum paved road	m	350		
	Reinstatement of footpaths				
K741.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	247		
K741.2	Ditto' - but concrete and concrete block paved footpaths	m	165		
K741.3	Ditto' - but unpaved footpaths	m	176		
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, end caps and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711.1	To nominal bore 200mm	nr	37		
	Volume:- 0.2 - 0.5m³				
L732.1	To nominal bore 200 - 300mm	nr	14		
L733.1	To nominal bore 300 - 600mm	nr	1		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 3.2 Central Industrial Area					
Proposed Water Lines:75T-60E along Lusaka Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD160mm HDPE	m	600		
A260.2	OD 250mm HDPE	m	2,210		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.1	OD160mm HDPE	m	600		
A260.2	OD 250mm HDPE	m	2,210		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS D: DEMOLITION AND SITE CLEARANCE				
D11	General site clearance along the pipeline alignment	ha	0.17		
	Buildings and Other Structures				
D46	Allow for demolition and removal of buildings and all other structures including all chambers, marker posts, brickwork, concrete, masonry, metal, timber and other materials from the wayleave. The rate includes for removal of all waste material.	Item	PS		
D61	Removal of existing pipeline and carting away of removed existing pipe and fittings to approved tips. OD160mm, depth not exceeding 1.5m	m	2,810		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
I712	OD160mm, depth not exceeding 1.5m	m	480		
I713	OD160mm, depth not exceeding 2.0m	m	120		
I714	OD250mm, depth not exceeding 1.5m	m	1,768		
I715	OD250mm, depth not exceeding 2.0m	m	442		
Page Total Carried Forward to Next Page					

PAGE 45 of 121

Bill No. 3.2 Central Industrial Area					
Proposed Water Lines:75T-60E along Lusaka Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90°	nr	3		
J611.2	OD 160mm, 90°	nr	2		
J612.1	OD 250mm, 30°	nr	1		
	Junctions and Branches				
J622.1	OD 250 x 75mm Plain Ended Tee	nr	4		
J622.2	Ditto but 250 x 110mm	nr	1		
J622.3	Ditto but 250x160mm	nr	1		
	Straight Specials				
J681.1	OD 63mm plain ended pipe, 1.2m long, cut to suit	nr	1		
J681.2	OD 63mm Flanged Stub End	nr	1		
J681.3	Ditto but 75mm	nr	4		
J681.4	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	7		
J681.5	OD 110mm Stub End with flange	nr	1		
J681.6	OD 160mm Stub End with flange	nr	2		
	Valves				
J811.1	DN 65mm all flanged sluice valve	nr	1		
J811.2	Ditto but 100mm	nr	2		
J811.3	Ditto but 150mm	nr	2		
J811.4	Ditto but 200mm	nr	2		
J812.1	Ditto but 250mm	nr	2		
	Hydrants				
J901	DN 80mm fire hydrant	nr	4		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 1000mm x 1000mm, depth n.e. 2m	nr.	2		
K152.2	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	2		
	Page Total Carried Forward to Next Page				

Bill No. 3.2 Central Industrial Area					
Proposed Water Lines:75T-60E along Lusaka Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	8		
K63	Crossings Construction of new HDPE pipeline using horizontal directional drilling or approved equivalent trenchless method. High density polyethylene pipes (HDPE) PE 100 - PN 16 and fusion bonded epoxy steel pipe PN16 sleeve as per standard drawing No.6000023-HH-SD-DR-W-009 (Cost of pipes measured separately). The rates to include supply, transport to site and store in secure place. Transport from site store, lay and joint HDPE pipes by 'butt fusion' welding; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation, backfilling and final reinstatement. Depth n.e 2m The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
K631.1	Road crossing for OD 250mm pipe	m	70		
K631.2	Provide all materials and anchor approx. 40m aerial crossing section of pipeline on edge of bridge above railway crossing on Lusaka Road. The pipe is to be anchored on bridge deck and bridge supports using steel brackets, concrete and other members as required. Item includes for all connections, anchorage, welding, traffic control and ancillary works involved.	Item	L.S		
K82	Marker Posts Supply and fix marker posts with required labelling as shown on standard drawings	nr	12		
K731.1	Reinstatements Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	413		
K731.2	Ditto' - but Concrete block paved road	m	177		
K731.3	Ditto' - but murrum paved road	m	253		
K741.1	Reinstatement of footpaths Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	964		
K741.2	Ditto' - but concrete and concrete block paved footpaths	m	413		
K741.3	Ditto' - but unpaved footpaths	m	590		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION Extras to excavation and backfilling for excavation in Rock. Rate to include carting away and disposal. (Provisional) Note:- Blasting is NOT permitted for Item L Extras to excavation and backfilling as per Clause 301 of The Specifications for pipeline and chambers				
L111.1	Excavation in trench for rock class "A"	m ³	483		
L111.2	Excavation in trench for rock class "B"	m ³	483		
L111.3	Excavation in trench for rock class "C"	m ³	644		
	Page Total Carried Forward to Next Page				

Bill No. 3.2 Central Industrial Area					
Proposed Water Lines:75T-60E along Lusaka Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Surrounds				
L531	Provide, place and compact selected imported granular fill material in bed and surround to pipes as specified and where directed by the Engineer.	m	1,405		
	Pipe Detectable Underground Warning Tape				
L6	Upon backfill to crown of the pipe, place detectable underground warning tape, minimum 75mm wide as required in specifications.	m	2,810		
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711.1	To nominal bore 200mm	nr	5		
	Volume:- 0.1 - 0.2m³				
L721.1	To nominal bore 200mm	nr	2		
L722.1	To nominal bore 200 - 300mm	nr	1		
	Volume:- 0.2 - 0.5m³				
L732.1	To nominal bore 200 - 300mm	nr	6		
L733.1	To nominal bore 300 - 600mm	nr	1		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	Decommissioning of Redundant Asbestos Cement Mains				
X64	Allow for excavation and safe removal of existing Asbestos Cement (AC) Mains in compliance with Vol. III Works Specifications. Disposal of AC waste to be done by approved licensed handler in accordance with NEMA requirements. Workers to be issued with required PPE for AC hazard level and undergo AC removal and site induction procedure. AC pipe OD 100mm and OD225	Kg	42,998		
TOTAL CARRIED FORWARD TO COLLECTION SHEET					

Bill No. 3.3 Central Industrial Area Proposed Water Lines:76K-98I and 76C-99E along Enterprise Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 200mm HDPE	m	1,960		
A260.2	OD 315mm HDPE	m	2,765		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.3	OD 200mm HDPE	m	1,960		
A260.4	OD 315mm HDPE	m	2,765		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated. The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711.1	OD 200mm HDPE	m	1,960		
I731.1	OD 315mm HDPE	m	2,765		
	Page Total Carried Forward to Next Page				

Bill No. 3.3 Central Industrial Area Proposed Water Lines:76K-98I and 76C-99E along Enterprise Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings.				
	Junctions and Branches				
J321.1	DN200 x 50mm All Flanged Tee	nr	1		
J321.2	Ditto but 200 x 200mm	nr	4		
J322.1	Ditto but 250 x 200mm	nr	1		
J322.2	Ditto but 300 x 50mm	nr	1		
J322.3	Ditto but 300 x 200mm	nr	2		
J322.4	Ditto but 300 x 300mm	nr	2		
J323.1	Ditto but 400 x 300mm	nr	1		
	Tapers				
J331.1	Ditto but 200 x 100mm	nr	1		
J332.1	Ditto but 300 x 200mm	nr	1		
J333.1	Ditto but 400 x 300mm	nr	1		
	Double Collars (Couplings/Stepped couplings)				
J341.1	DN 100/100mm stepped coupling	nr	1		
J341.2	DN 200/200mm stepped coupling	nr	6		
J341.3	DN 200mm straight coupling	nr	49		
J342.1	DN 250mm straight coupling	nr	2		
J342.2	DN 225/200mm stepped coupling	nr	2		
J343.1	Ditto but 300/300mm	nr	12		
J343.2	DN 300mm straight coupling	nr	24		
J343.3	Ditto but 400mm	nr	3		
	Adaptors				
J351.1	DN 100mm flange adaptor	nr	13		
J351.2	Ditto but 150mm	nr	1		
J351.3	Ditto but 200mm	nr	2		
J352.1	Ditto but 300mm	nr	1		
	Straight Specials				
J381.1	DN 100mm flanged spigot pipe, 1.2m long	nr	1		
J381.2	Ditto but 200mm	nr	16		
J381.3	DN 200mm all flanged spigot pipe, 1.2m lon	nr	1		
J381.4	DN 200mm plain ended spigot pipe, 1.2m lon	nr	1		
J382.1	DN 250mm flanged spigot pipe, 1.2m long	nr	2		
J382.2	Ditto but 300mm	nr	12		
J383.1	Ditto but 400mm	nr	3		
	Page Total Carried Forward to Next Page				

Bill No. 3.3 Central Industrial Area Proposed Water Lines:76K-98I and 76C-99E along Enterprise Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	1		
J611.2	OD 200mm, 60o Bend	nr	4		
J611.3	Ditto but 30°	nr	1		
J611.4	Ditto but 90°	nr	1		
J613.1	OD 315mm, 60° Bend	nr	1		
J613.2	Ditto but 30°	nr	3		
J613.3	Ditto but 45°	nr	1		
	Junctions and Branches				
J621.1	OD 200 x 75mm Plain Ended Tee	nr	4		
J621.2	OD 200 x 110mm Plain Ended Tee	nr	8		
J621.3	OD 200 x 200mm Plain Ended Tee	nr	1		
J622.1	Ditto but 315 x 110mm	nr	5		
J622.1	Ditto but 315 x 160mm	nr	1		
	Straight Specials				
J681.1	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	5		
J681.2	OD 75mm Stub End with flange	nr	4		
J681.3	OD 110mm Stub End with flange	nr	13		
J681.4	OD 160mm Stub End with flange	nr	1		
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	2		
J811.2	Ditto but 100mm	nr	14		
J811.3	Ditto but 150mm	nr	1		
J811.4	Ditto but 200mm	nr	7		
J812.1	Ditto but 300mm	nr	3		
	Air Valves				
J861.1	DN 50mm reinforced polyamide combination air valve	nr	2		
	Hydrants				
J901	DN 80mm fire hydrant	nr	5		
	UltraSonic water meter				
J911.1	DN 200mm flanged water meters	nr	1		
J911.2	DN 200mm flanged Y-type strainers	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 3.3 Central Industrial Area Proposed Water Lines:76K-98I and 76C-99E along Enterprise Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
K152.1	Manholes Chamber internal dimensions 1000mm x 1000mm, depth n.e. 2m	nr.	2		
K152.2	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	7		
K152.3	Chamber internal dimensions 1500mm x 1000mm, depth n.e. 2m	nr.	1		
K152.4	Chamber internal dimensions 1500mm x 1500mm, depth n.e. 2m	nr.	2		
K152.5	Chamber internal dimensions 2100mm x 1000mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	13		
K63	Crossings				
	Construction of new HDPE pipeline using horizontal directional drilling or approved equivalent trenchless method. High density polyethylene pipes (HDPE) PE 100 - PN 16 and fusion bonded epoxy steel pipe PN16 sleeve as per standard drawing No.6000023-HH-SD-DR-W-009 (Cost of pipes measured seperately). The rates to include supply, transport to site and store in secure place. Transport from site store, lay and joint HDPE pipes by 'butt fusion' welding; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation, backfilling and final reinstatement. Depth n.e 2m				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
K631	Road crossing Enterprise Road OD200mm.	m	50		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	26		
	Reinstatements				
K731.1	Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	32		
K731.2	Ditto' - but Concrete block paved road	m	14		
K731.3	Ditto' - but murrum paved road	m	108		
K732.1	Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 500mm.	m	49		
K732.2	Ditto' - but Concrete block paved road	m	19		
K732.3	Ditto' - but murrum paved road	m	151		
	Page Total Carried Forward to Next Page				

Bill No. 3.3 Central Industrial Area					
Proposed Water Lines:76K-98I and 76C-99E along Enterprise Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Reinstatement of footpaths				
K741.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 500mm	m	54		
K741.2	Ditto - but concrete and concrete block paved footpaths	m	36		
K741.3	Ditto' - but unpaved footpaths	m	39		
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	77		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	51		
K742.3	Ditto' - but unpaved footpaths	m	55		
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711.1	To nominal bore 200mm	nr	19		
	Volume:- 0.1 - 0.2m³				
L721.1	To nominal bore 200mm	nr	15		
	Volume:- 0.2 - 0.5m³				
L732.1	To nominal bore 200 - 300mm	nr	9		
L733.1	To nominal bore 300 - 600mm	nr	1		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

PAGE 54 of 121

Bill No. 3.4 Central Industrial Area		Proposed Water Lines: 75W-83C, 83B-83A, 95D-95K, 75S-96P, 83G-76B, 76A-84F, 83H-85K, 84C-83J, 83I-96U, 96R-95R, 95O-96S, 95K-96T, 95Q-95H, 96P-97F, 96A-96G, 96K-105F, 105A-105C, 66A-76P along Shimo La Tewa Rd, Dunga-Mukenia Rd, Aoko Rd, Kapiti Rd			
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
I711.3	OD 200mm HDPE	m	3,545		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings.				
	Junctions and Branches				
J321.1	DN 200 x 100mm Ferrous All Flanged Level Invert Tee	nr	1		
J321.2	DN 200 x 200mm All Flanged Tee	nr	5		
J321.3	DN 200 x 150mm Cross Tee	nr	2		
J331.1	DN 200 x 200mm Cross Tee	nr	1		
J331.2	DN 800 x 100mm All Flanged Tee	nr	1		
	Tapers				
J331.1	DN 200 x 100mm Double Flanged Reducer	nr	1		
J331.2	Ditto but 200 x 150mm	nr	2		
	Double Collars (Couplings/Stepped couplings)				
J341.1	DN 100mm straight coupling	nr	11		
J341.2	DN 100/100mm stepped coupling	nr	8		
J341.3	Ditto but 100/150mm	nr	1		
J341.4	Ditto but 150/150mm	nr	7		
J341.5	DN 150mm straight coupling	nr	79		
J341.6	Ditto but 200mm	nr	78		
J341.7	Ditto but 200/200mm	nr	8		
J344	DN 800mm straight coupling	nr	2		
	Adaptors				
J351.1	DN 65mm flange adaptor	nr	1		
J351.3	Ditto but 80mm	nr	6		
J351.4	Ditto but 100mm	nr	17		
	Page Total Carried Forward to Next Page				

Bill No. 3.4		Central Industrial Area			
Proposed Water Lines: 75W-83C, 83B-83A, 95D-95K, 75S-96P, 83G-76B, 76A-84F, 83H-85K, 84C-83J, 83I-96U, 96R-95R, 95O-96S, 95K-96T, 95Q-95H,96P-97F, 96A-96G, 96K-105F, 105A-105C, 66A-76P along Shimo La Tewa Rd, Dunga-Mukenia Rd, Aoko Rd, Kapiti Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J351.5	Ditto but 150mm	nr	9		
J351.6	Ditto but 200mm	nr	1		
	Straight Specials				
J381.2	DN 100mm flanged spigot pipe, 1.2m long	nr	3		
J381.3	Ditto but 150mm	nr	9		
J381.4	Ditto but 200mm	nr	27		
J384.1	Ditto but 800mm	nr	2		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	22		
J611.2	OD 160mm, 30° Bend	nr	1		
J611.3	Ditto but 45°	nr	4		
J611.4	Ditto but 60°	nr	1		
J611.5	OD 200mm, 30° Bend	nr	1		
J611.6	Ditto but 45°	nr	3		
J611.7	Ditto but 90°	nr	5		
	Junctions and Branches				
J621.1	OD 110 x 75mm Plain Ended Tee	nr	4		
J621.2	OD 110 x 110mm Plain Ended 45° Tee	nr	1		
J621.3	OD 110 x 110mm Plain Ended Tee	nr	3		
J621.4	Ditto but 160 x 75mm	nr	24		
J621.5	Ditto but 160 x 110mm	nr	7		
J621.6	Ditto but 160 x 160mm	nr	4		
J621.7	OD 200 x 75mm Plain Ended Tee	nr	8		
J621.8	Ditto but 200 x 110mm	nr	8		
J621.9	OD 200 x 110mm Plain Ended 45° Tee	nr	1		
J621.10	OD 200 x 160mm Plain Ended Tee	nr	6		
J621.11	Ditto but 200 x 200mm	nr	2		
J621.12	OD 200 x 200mm Plain Ended 45° Tee	nr	1		
J621.13	OD 250 x 75mm Plain Ended Tee	nr	1		
	HDPE Tapers				
J631.1	OD 160 x 110 HDPE Reducer	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 3.4 Central Industrial Area					
Proposed Water Lines: 75W-83C, 83B-83A, 95D-95K, 75S-96P, 83G-76B, 76A-84F, 83H-85K, 84C-83J, 83I-96U, 96R-95R, 95O-96S, 95K-96T, 95Q-95H, 96P-97F, 96A-96G, 96K-105F, 105A-105C, 66A-76P along Shimo La Tewa Rd, Dunga-Mukenia Rd, Aoko Rd, Kapiti Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Straight Specials				
J681.1	OD 75mm Stub End with flange	nr	36		
J681.2	Ditto but 110mm	nr	16		
J681.3	OD 110mm End Cap	nr	1		
J681.4	OD 160mm Stub End with flange	nr	9		
J681.5	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	94		
J681.6	OD 110mm plain ended pipe, 1.2m long, cut to suit	nr	1		
J681.7	OD 160mm End Cap	nr	12		
J681.8	OD 200mm Stub End with flange	nr	2		
J681.9	OD 200mm plain ended pipe, 1.2m long, cut to suit	nr	1		
J681.10	OD 200mm End Cap	nr	8		
	Valves				
J811.1	DN 65mm all flanged sluice valve	nr	1		
J811.3	Ditto but 80mm	nr	6		
J811.4	Ditto but 100mm	nr	19		
J811.5	Ditto but 150mm	nr	15		
J811.6	Ditto but 200mm	nr	5		
	Hydrants				
J901	DN80mm fire hydrant	nr	29		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill sorround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	1		
K152.3	Chamber internal dimensions 1500mm x 1200mm, depth n.e. 2m	nr.	3		
K152.4	Chamber internal dimensions 1500mm x 1500mm, depth n.e. 2m	nr.	1		
K152.5	Chamber internal dimensions 1800mm x 1000mm, depth n.e. 2m	nr.	3		
	Page Total Carried Forward to Next Page				

Bill No. 3.4		Central Industrial Area			
Proposed Water Lines: 75W-83C, 83B-83A, 95D-95K, 75S-96P, 83G-76B, 76A-84F, 83H-85K, 84C-83J, 83I-96U, 96R-95R, 95O-96S, 95K-96T, 95Q-95H,96P-97F, 96A-96G, 96K-105F, 105A-105C, 66A-76P along Shimo La Tewa Rd, Dunga-Mukenia Rd, Aoko Rd, Kapiti Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	62		
K63	Crossings				
K631.1	Provide all materials and anchor approx. 20m aerial crossing above Ngong River at section of pipeline on Dunga - Mukenia Road. The pipe is to be anchored on bridge deck and and bridge supports using steel brackets, concrete and other members as required. Item includes for all connections, anchorage, welding, traffic control and ancillary works involved.	Item	L.S		
K631.2	Provide all materials and anchor approx. 20m aerial crossing above Ngong River at section of pipeline on Shimo la Tewa Road. The pipe is to be anchored on bridge deck and and bridge supports using steel brackets, concrete and other members as required. Item includes for all connections, anchorage, welding, traffic control and ancillary works involved.	Item	L.S		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	70		
	Reinstatements				
K731.1	Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	170		
K731.2	Ditto' - but Concrete block paved road	m	75		
K731.3	Ditto' - but murram paved road	m	560		
	Reinstatement of footpaths				
K741.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	282		
K741.2	Ditto' - but concrete and concrete block paved footpaths	m	188		
K741.3	Ditto' - but unpaved footpaths	m	201		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e 0.1m³				
L711.1	To nominal bore 200mm	nr	47		
	Volume:- 0.1 - 0.2m³				
L721.1	To nominal bore 200mm	nr	9		
L722.1	To nominal bore 200 - 300mm	nr	1		
	Volume:- 0.2 - 0.5m³				
L732.1	To nominal bore 200 - 300mm	nr	2		
L734.1	To nominal bore 600- 900mm	nr	1		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

PAGE 59 of 121

Bill No. 3.5		Central Industrial Area			
Proposed Water Lines: 60O-67C, 60G-60L, 60J-60K, 67V-77B, 61A-68D, 61B-68C, 68C-61J, 74A-75E, 74C-75G and 74D-75H along Kaloleni Rd (City Stadium Roundabout), Lanet Rd and Hola Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
I711.1A	OD 160mm	m	4,310		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS				
	Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321.1	DN 150 x 50mm Saddle Clamps	nr	8		
	Double Collars				
	Couplings/Stepped couplings				
J341.1	DN 100/100mm stepped coupling	nr	2		
J341.2	DN 150mm straight coupling	nr	6		
J341.3	DN 150/150mm stepped coupling	nr	28		
J342.1	Ditto but 225/225mm	nr	6		
J343.1	Dito but 400/400mm	nr	2		
	Adaptors				
J351.1	DN 50mm flange adaptor	nr	8		
J351.2	Ditto but 100mm	nr	5		
J351.3	Ditto but 150mm	nr	12		
	Page Total Carried Forward to Next Page				

Bill No. 3.5		Central Industrial Area			
Proposed Water Lines: 60O-67C, 60G-60L, 60J-60K, 67V-77B, 61A-68D, 61B-68C, 68C-61J, 74A-75E, 74C-75G and 74D-75H along Kaloleni Rd (City Stadium Roundabout), Lanet Rd and Hola Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	High density polyethylene pipes (HDPE) PE 100				
	Bends				
J661.1	OD 75mm, 90° Bend	nr	14		
J661.2	OD 160mm, 30° Bend	nr	11		
J661.3	Ditto but 45°	nr	3		
J661.4	Ditto but 60°	nr	2		
J661.5	Ditto but 90°	nr	7		
	Junctions and Branches				
J621.1	OD 110 x 110mm Plain Ended Tee	nr	1		
J621.2	OD 160 x 75mm Plain Ended Tee	nr	14		
J621.3	OD 160 x 110mm Plain Ended 45° Tee	nr	1		
J621.4	OD 160 x 110mm Plain Ended Tee	nr	5		
J621.5	OD 160 x 160mm Plain Ended Cross Tee	nr	8		
J622.1	OD 225 x 160mm Plain Ended Cross Tee	nr	3		
J623.1	OD 400 x 160mm Plain Ended Tee	nr	1		
	Tapers				
J631.1	OD160 x 110mm ferrous all flanged reducer	nr	1		
J621.2	Ditto but 250 x 160mm	nr	1		
	Straight specials				
J681.1	OD 75mm Stub End with flange	nr	14		
J681.2	OD 75mm Plain Ended Pipe 1.2m Long	nr	28		
J681.3	OD 110mm Stub End with flange	nr	5		
J681.4	OD 160mm Stub End with flange	nr	12		
J681.5	OD 160mm Plain Ended Pipe 1.2m Long	nr	1		
J681.6	OD 160mm End Cap	nr	2		
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	8		
J811.2	Ditto but 100mm	nr	5		
J811.3	Ditto but 150mm	nr	12		
	Hydrants				
J901	DN 80mm fire hydrant	nr	14		
	Page Total Carried Forward to Next Page				

Bill No. 3.5		Central Industrial Area			
Proposed Water Lines: 60O-67C, 60G-60L, 60J-60K, 67V-77B, 61A-68D, 61B-68C, 68C-61J, 74A-75E, 74C-75G and 74D-75H along Kaloleni Rd (City Stadium Roundabout), Lanet Rd and Hola Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill sorround, e.t.c				
K200	Manholes Narrow Concrete chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	40		
K820.1	Marker Posts Supply and fix marker posts with required labelling as shown on standard drawings	nr	40		
K63	Crossings				
K631.1	Provide all materials and anchor approx. 20m aerial crossing above Ngong River at section of pipeline on Hola Road for the OD 160mm pipe. The pipe is to be anchored on bridge deck and and bridge supports using steel brackets, concrete and other members as required. Item includes for all connections, anchorage, welding, traffic control and ancillary works involved.	Item	L.S		
K631.2	Provide all materials and anchor approx. 20m aerial crossing above Ngong River at section of pipeline on Lanet Road. The pipe is to be anchored on bridge deck and and bridge supports using steel brackets, concrete and other members as required. Item includes for all connections, anchorage, welding, traffic control and ancillary works involved.	Item	L.S		
K731.1	Reinstatements Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	388		
K731.2	Ditto' - but Concrete block paved road	m	905		
K731	Reinstatement of footpaths Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	905		
K732	Ditto' - but Concrete block paved road	m	2,112		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION Extras to excavation and backfilling for excavation in Rock. Rate to include carting away and disposal. (Provisional) Note:- Blasting is NOT permitted for Item L				
	Extras to excavation and backfilling as per Clause 301 of The Specifications for pipeline and chambers				
L111.1	Excavation in trench for rock class "A"	m ³	570		
L111.2	Excavation in trench for rock class "B"	m ³	570		
L111.3	Excavation in trench for rock class "C"	m ³	780		
	Surrounds				
L531	Provide, place and compact selected imported granular fill material in bed and surround to pipes as specified and where directed by the Engineer.	m	4,310		
	Detectable Underground Warning Tape				
L6	Upon backfill to crown of pipe, place detectable underground warning tape minimum 75mm wide as required in specifications.	m	4,310		
	Page Total Carried Forward to Next Page				

PAGE 63 of 121

PAGE 64 of 121

Bill No. 4.1 Eastleigh (PROVISIONAL)					
Proposed Water Line 19A-27F along Juja Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 200mm HDPE	m	1,750		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.2	OD 200mm HDPE	m	1,750		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item			
	CLASS D: DEMOLITION AND SITE CLEARANCE				
D11	General site clearance along the pipeline alignment	ha	0.11		
	Buildings and Other Structures				
D46	Allow for demolition and removal of buildings and all other structures including all chambers, marker posts, brickwork, concrete, masonry, metal, timber and other materials from the wayleave. The rate includes for removal of all waste material.	Item	PS		
D61	Removal of existing pipeline and carting away of removed existing pipe and fittings to approved tips. OD160mm, depth not exceeding 1.5m	m	1,750		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
I712	OD200mm, depth not exceeding 1.5m	m	1,400		
I713	OD200mm, depth not exceeding 2.0m	m	350		
	Page Total Carried Forward to Next Page				

Bill No. 4.1 Eastleigh (PROVISIONAL)					
Proposed Water Line 19A-27F along Juja Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	<u>SUPPLY AND INSTALLATION OF FITTINGS</u> Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321.1	DN 200 x 80mm Saddle Clamps	nr	2		
J321.2	DN 200 x 50mm Ferrous All Flanged Tee	nr	1		
J321.3	DN 200 x 200mm Ferrous All Flanged Tee	nr	2		
J324	DN 600 x 200mm Ferrous All Flanged Tee	nr	3		
	Double Collars				
J341.1	DN 100mm ferrous straight coupling	nr	1		
J341.2	DN 150/150mm ferrous stepped coupling	nr	1		
J341.3	Ditto but 200/200mm	nr	7		
J341.4	DN 200mm ferrous straight coupling	nr	42		
J343	Ditto but 350mm	nr	2		
J344	Ditto but 600mm	nr	6		
	Adaptors				
J351.1	DN 80mm flange adaptor	nr	2		
J351.2	Ditto but 100mm	nr	4		
J351.3	Ditto but 150mm	nr	8		
J351.4	Ditto but 200mm	nr	6		
	Straight Specials				
J381.1	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	2		
J381.2	DN 200mm ferrous all flanged pipe, 1.2m long	nr	3		
J381.3	DN 200mm ferrous plain ended pipe, 1.2m long	nr	3		
J381.4	DN 200mm ferrous flanged spigot pipe, 1.2m long	nr	5		
J384	DN 600mm ferrous flanged spigot pipe, 1.2m long	nr	6		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	2		
J611.2	OD 200mm, 30° Bend	nr	1		
	Junctions and Branches				
J621.1	OD 200 x 75mm Plain Ended Tee	nr	8		
J621.2	OD 200 x 110mm Plain Ended Tee	nr	5		
J621.3	OD 200 x 160mm Plain Ended Tee	nr	8		
	Page Total Carried Forward to Next Page				

Bill No. 4.1 Eastleigh (PROVISIONAL)					
Proposed Water Line 19A-27F along Juja Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Straight Specials				
J681.1	OD 75mm Stub end with flange	nr	10		
J681.2	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	6		
J681.3	OD 110mm Stub end with flange	nr	4		
J681.4	Ditto but 160mm	nr	8		
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	1		
J811.2	DN 80mm all flanged sluice valve	nr	2		
J811.3	Ditto but 100mm	nr	4		
J811.4	Ditto but 150mm	nr	8		
J811.5	Ditto but 200mm	nr	4		
	Air Valves				
J861	DN 50mm reinforced polyamide combination air valve	nr	1		
	UltraSonic water meter				
J901.1	DN 200mm flanged water meters	nr	3		
J321.2	DN 200mm flanged Y-type strainers	nr	3		
	Hydrants				
J901.2	DN 80mm fire hydrant	nr	8		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	5		
K152.2	Chamber internal dimensions 1200mm x 2100mm, depth n.e. 2m	nr.	3		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	22		
K63	Crossings				
	Construction of new HDPE pipeline using horizontal directional drilling or approved equivalent trenchless method. High density polyethylene pipes (HDPE) PE 100 - PN 16 and fusion bonded epoxy steel pipe PN16 sleeve as per standard drawing No.6000023-HH-SD-DR-W-009 (Cost of pipes measured seperately). The rates to include supply, transport to site and store in secure place. Transport from site store, lay and joint HDPE pipes by 'butt fusion' welding; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation, backfilling and final reinstatement. Depth n.e 2m				
	Page Total Carried Forward to Next Page				

Bill No. 4.1 Eastleigh (PROVISIONAL)					
Proposed Water Line 19A-27F along Juja Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
K631	Road crossing for OD 200mm pipe	m	30		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	30		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	158		
K731.2	Ditto' - but Concrete block paved road	m	368		
	Reinstatement of footpaths				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	368		
K731.2	Ditto' - but Concrete block paved road	m	858		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION Extras to excavation and backfilling for excavation in Rock. Rate to include carting away and disposal. (Provisional) Note:- Blasting is NOT permitted for Item L				
	Extras to excavation and backfilling as per Clause 301 of The Specifications for pipeline and chambers				
L111.1	Excavation in trench for rock class "A"	m ³	189		
L111.2	Excavation in trench for rock class "B"	m ³	189		
L111.3	Excavation in trench for rock class "C"	m ³	252		
	Surrounds				
L531	Provide, place and compact selected imported granular fill material in bed and surround to pipes as specified and where directed by the Engineer.	m	875		
	Pipe Detectable Underground Warning Tape				
L6	Upon backfill to crown of the pipe, place detectable underground warning tape, minimum 75mm wide as required in specifications.	m	1,750		
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20 Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	15		
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	7		
	Page Total Carried Forward to Next Page				

PAGE 69 of 121

Bill No. 4.2 Eastleigh (PROVISIONAL)					
Proposed Water Line 18S-62B, 18B-46A, 46A-46R Along Eastleigh First, Eastleigh Second Avenue and Fourteenth Street					
	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 200mm HDPE	m	5,130		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.2	OD 200mm HDPE	m	5,130		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated.				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711	OD 200mm	m	5,130		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS				
	Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Page Total Carried Forward to Next Page				

Bill No. 4.2 Eastleigh (PROVISIONAL)					
Proposed Water Line 18S-62B, 18B-46A, 46A-46R Along Eastleigh First, Eastleigh Second Avenue and Fourteenth Street					
	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321.1	DN 200 x 50mm Saddle Clamp	nr	3		
J321.2	Ditto but 200 x 65mm	nr	6		
J321.3	Ditto but 200 x 80mm	nr	57		
J321.4	DN 200 x 200mm Ferrous All Flanged Tee	nr	5		
J323.1	Ditto but 350 x 200mm	nr	1		
J324	Ditto but 400 x 200mm	nr	1		
	Double Collars				
J341.1	DN 200/200mm stepped coupling	nr	25		
J341.2	DN 200mm straight coupling	nr	92		
J343.1	DN 350mm straight coupling	nr	2		
J344	DN 400mm straight coupling	nr	2		
	Adaptors				
J351.1	DN 50mm flange adaptor	nr	3		
J351.2	Ditto but 65mm	nr	6		
J351.3	Ditto but 80mm	nr	57		
J351.4	Ditto but 100mm	nr	6		
J351.5	Ditto but 150mm	nr	8		
J351.6	Ditto but 200mm	nr	10		
	Straight Specials				
J381.1	DN 50mm ferrous flanged spigot pipe, 1.2m long	nr	1		
J381.2	DN 65mm ferrous plain ended pipe, 1.2m long	nr	6		
J381.3	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	59		
J381.4	DN 200mm ferrous flanged spigot pipe, 1.2m long	nr	16		
J381.5	DN 200mm ferrous plain ended pipe, 1.2m long	nr	7		
J381.6	DN 200mm ferrous pipe, 20m long (river crossing)	nr	1		
J383.1	DN 350mm ferrous flanged spigot pipe, 1.2m long	nr	2		
J384	Ditto but 400mm	nr	2		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	5		
J611.2	Ditto but 200mm	nr	8		
J611.3	Ditto but 30°	nr	1		
	Junctions and Branches				
J621.1	OD 200 x 75mm Plain Ended Tee	nr	23		
	Page Total Carried Forward to Next Page				

Bill No. 4.2 Eastleigh (PROVISIONAL)					
Proposed Water Line 18S-62B, 18B-46A, 46A-46R Along Eastleigh First, Eastleigh Second Avenue and Fourteenth Street					
	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J621.2	OD 200 x 110mm Plain Ended Tee	nr	6		
J621.3	OD 200 x 160mm Plain Ended Tee	nr	8		
	Straight Specials				
J681.1	OD 75mm Stub end with flange	nr	23		
J681.2	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	28		
J681.3	OD 110mm Stub end with flange	nr	6		
J681.4	Ditto but 160mm	nr	8		
J681.5	OD 200mm plain ended pipe, 1.2m long, cut to suit	nr	1		
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	3		
J811.2	Ditto but 65mm	nr	6		
J811.3	Ditto but 80mm	nr	57		
J811.4	Ditto but 100mm	nr	6		
J811.5	Ditto but 150mm	nr	8		
J811.6	Ditto but 200mm	nr	12		
	Hydrants				
J901	DN 80mm fire hydrant	nr	23		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	5		
K152.2	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	6		
K152.2	Chamber internal dimensions 1500mm x 1200mm, depth n.e. 2m	nr.	1		
K152.2	Chamber internal dimensions 1500mm x 1500mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	105		
	K63 Crossings				
K631.1	Provide all materials and anchor approx. 20m aerial crossing above Nairobi River at section of pipeline on Eastleigh First Avenue, DN 200mm. The pipe is to be anchored on bridge deck and and bridge supports using steel brackets, concrete and other members as required. Item includes for all connections, anchorage, welding, traffic control and ancillary works involved.	Item	L.S		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	118		
	Page Total Carried Forward to Next Page				

Bill No. 4.2		Eastleigh (PROVISIONAL)			
Proposed Water Line 18S-62B, 18B-46A, 46A-46R Along Eastleigh First, Eastleigh Second Avenue and Fourteenth Street					
	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
K731.1	Reinstatements Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	170		
K731.2	Ditto' - but Concrete block paved road	m	75		
K731.1	Reinstatement of footpaths Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	286		
K731.2	Ditto' - but Concrete block paved road	m	123		
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	75		
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	81		
	Volume:- 0.5 - 1m³				
L743	To nominal bore 350mm	nr	1		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

PAGE 74 of 121

Bill No. 4.3 Eastleigh (PROVISIONAL) Proposed Water Line 18AC-18AF, 18AN-18AQ, 18AQ-18AF, 18AG-34T, 18AK-34P, 29AB-34U, 29AE-29N along Major Jackson Muriithi Street, Captain Mungai Street, Kirongothi, Kipande Athumani Street Street and Timoroa Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Saddle Clamps				
J321	DN 150x80mm Saddle Clamps	nr	7		
	Double Collars				
J341.1	DN 65mm straight coupling	nr	2		
J341.2	Ditto but 65/65mm	nr	2		
J341.3	Ditto but 100/100mm	nr	16		
J341.4	Ditto but 150/150mm	nr	8		
J341.5	DN 150mm straight coupling	nr	54		
J341.7	Ditto but 200mm	nr	6		
	Adaptors				
J351.1	DN 80mm flange adaptor	nr	11		
J351.2	DN 100mm flange adaptor	nr	1		
J351.3	Ditto but 150mm	nr	6		
	Straight Specials				
J381.1	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	7		
J381.2	Ditto but 150mm	nr	6		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611	OD 75mm, 90° Bend	nr	3		
	Junctions and Branches				
J621.1	OD 63 x 63mm Plain Ended Tee	nr	1		
J621.2	OD 75 x 75mm Plain Ended Tee	nr	1		
J621.3	OD 110 x 110mm Plain Ended Tee	nr	4		
J621.4	OD 160 x 75mm Plain Ended Tee	nr	16		
J621.5	OD 160 x 90mm Plain Ended Tee	nr	1		
J621.6	OD 160 x 110mm Plain Ended Tee	nr	7		
J621.7	OD 160 x 160mm Plain Ended Tee	nr	2		
J621.8	OD 200 x 110mm Plain Ended Tee	nr	2		
	Tapers				
J631.1	OD 160 x 63mm plain ended reducer	nr	1		
J631.2	OD 160 x 90mm plain ended reducer	nr	1		
J631.3	OD 160 x 110mm plain ended reducer	nr	4		
	Page Total Carried Forward to Next Page				

PAGE 76 of 121

Bill No. 4.3 Eastleigh (PROVISIONAL) Proposed Water Line 18AC-18AF, 18AN-18AQ, 18AQ-18AF, 18AG-34T, 18AK-34P, 29AB-34U, 29AE-29N along Major Jackson Muriithi Street, Captain Mungai Street, Kirongothi, Kipande Athumani Street Street and Timoroa Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
L	<u>CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u>				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	25		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

PAGE 78 of 121

Bill No. 4.4 Eastleigh (PROVISIONAL)					
Proposed Water Line 17N-45AS, 45BF-46B, 45AS-45G along Muratina Street, Waudo Street and Marimbi Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321.1	DN 200 x 50mm Saddle Clamps	nr	5		
J321.2	DN 200 x 80mm Saddle Clamps	nr	11		
J321.3	DN 200 x 150mm Ferrous All Flanged Tee	nr	1		
J321.4	DN 200 x 200mm Ferrous All Flanged Tee	nr	2		
	Double Collars				
J341.1	DN 150/150mm Stepped Coupling	nr	1		
J341.2	Ditto but 200/200mm	nr	8		
J341.3	DN 200mm straight coupling	nr	69		
	Adaptors				
J351.1	DN 50mm flange adaptor	nr	5		
J351.2	DN 80mm flange adaptor	nr	11		
J351.3	DN 100mm flange adaptor	nr	4		
J351.4	Ditto but 150mm	nr	14		
J351.5	Ditto but 200mm	nr	2		
	Page Total Carried Forward to Next Page				

Bill No. 4.4 Eastleigh (PROVISIONAL)					
Proposed Water Line 17N-45AS, 45BF-46B, 45AS-45G along Muratina Street, Waudo Street and Marimbi Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	3		
J611.2	Ditto but 200mm	nr	4		
	Junctions and Branches				
J621.1	OD 200 x 75mm Plain Ended Tee	nr	16		
J621.2	OD 200 x 110mm Plain Ended Tee	nr	4		
J621.3	OD 200 x 160mm Plain Ended Tee	nr	13		
J621.4	OD 200 x 200mm Plain Ended Tee	nr	1		
	Straight Specials				
J681.1	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	22		
J681.2	OD 200mm plain ended pipe, 1.2m long, cut to suit	nr	3		
J681.3	OD 90mm Stub end with flange	nr	1		
J681.4	Ditto but 110mm	nr	3		
J681.5	Ditto but 160mm	nr	9		
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	5		
J811.2	Ditto but 80mm	nr	11		
J811.3	Ditto but 100mm	nr	4		
J811.4	Ditto but 150mm	nr	14		
J811.5	Ditto but 200mm	nr	2		
	Hydrants				
J901	DN 80mm fire hydrant	nr	16		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
	Page Total Carried Forward to Next Page				

PAGE 81 of 121

Bill No. 4.5 Eastleigh (PROVISIONAL)					
Proposed Water Line 51A-46H along Digo Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 315mm HDPE	m	1,510		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.2	OD 315mm HDPE	m	1,510		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated. The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I731	OD 315mm	m	1,510		
	Page Total Carried Forward to Next Page				

Bill No. 4.5 Eastleigh (PROVISIONAL)					
Proposed Water Line 51A-46H along Digo Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J322.1	DN 300 x 80mm Saddle Clamps	nr	4		
J322.1	DN 300 x 300mm Ferrous All Flanged Tee	nr	1		
	Double Collars				
J342.1	DN 300mm straight coupling	nr	36		
J342.1	DN 300/300mm stepped coupling	nr	2		
	Adaptors				
J351.1	DN 80mm flange adaptor	nr	4		
J351.2	Ditto but 100mm	nr	3		
J351.3	Ditto but 150mm	nr	3		
J352	Ditto but 300mm	nr	2		
	Straight Specials				
J381.1	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	4		
J382.1	DN 300mm ferrous plain ended pipe, 1.2m long	nr	1		
J382.2	DN 300mm ferrous flanged spigot pipe, 1.2m long	nr	4		
J382.3	DN 300mm ferrous all flanged spigot pipe, 1.2m long	nr	1		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611	OD 75mm, 90° Bend	nr	2		
J613	OD 315mm, 30° Bend	nr	1		
	Junctions and Branches				
J623.1	OD 315 x 75mm Plain Ended Tee	nr	9		
J623.2	OD 315 x 110mm Plain Ended Tee	nr	3		
J623.3	OD 315 x 160mm Plain Ended Tee	nr	4		
	Straight Specials				
	Page Total Carried Forward to Next Page				

Bill No. 4.5 Eastleigh (PROVISIONAL)					
Proposed Water Line 51A-46H along Digo Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J681.1	OD 75mm Stub end with flange	nr	9		
J681.2	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	11		
J681.3	OD 110mm Stub end with flange	nr	3		
J681.4	OD 160mm Stub end with flange	nr	3		
	Valves				
J811.1	DN 80mm all flanged sluice valve	nr	4		
J811.2	DN 100mm all flanged sluice valve	nr	3		
J811.3	Ditto but 150mm	nr	3		
J812	Ditto but 300mm	nr	2		
	Hydrants				
J901	DN 80mm fire hydrant	nr	9		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	1		
K152.2	Chamber internal dimensions 1200mm x 1500mm, depth n.e. 2m	nr.	1		
K152.3	Chamber internal dimensions 1200mm x 2100mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	19		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	22		
	Reinstatements Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 500mm.				
K731.1		m	50		
K731.2	Ditto' - but Concrete block paved road	m	25		
	Reinstatement of footpaths Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 500mm.				
K731.1		m	88		
K731.2	Ditto' - but Concrete block paved road	m	38		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks <u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	7		
	Page Total Carried Forward to Next Page				

Bill No. 4.5 Eastleigh (PROVISIONAL)					
Proposed Water Line 51A-46H along Digo Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
L742	Volume:- 0.5 - 1m³				
	To nominal bore 300mm	nr	5		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 4.6 Eastleigh (PROVISIONAL)					
Proposed Water Line 34AD-45BE, 45J-45Z, 45B-45G, 45AT-45AV, 45AA-45AF, 45AK-45AH along Timboroa Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	<p>NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.</p>				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 160mm HDPE	m	1,260		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.2	OD 160mm HDPE	m	1,260		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS D: DEMOLITION AND SITE CLEARANCE				
D11	General site clearance along the pipeline alignment	ha	0.08		
	Buildings and Other Structures				
D46	Allow for demolition and removal of buildings and all other structures including all chambers, marker posts, brickwork, concrete, masonry, metal, timber and other materials from the wayleave. The rate includes for removal of all waste material.	Item	PS		
D61	Removal of existing pipeline and carting away of removed existing pipe and fittings to approved tips. OD160mm, depth not exceeding 1.5m	m	1,260		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
I712	OD160mm, depth not exceeding 1.5m	m	1,008		
I713	OD160mm, depth not exceeding 2.0m	m	252		
	Page Total Carried Forward to Next Page				

Bill No. 4.6 Eastleigh (PROVISIONAL)					
Proposed Water Line 34AD-45BE, 45J-45Z, 45B-45G, 45AT-45AV, 45AA-45AF, 45AK-45AH along Timboroa Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	<u>SUPPLY AND INSTALLATION OF FITTINGS</u> Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321.1	DN 150 x 50mm Saddle Clamps	nr	15		
J321.2	DN 150 x 80mm Saddle Clamps	nr	8		
	Tapers				
J331	DN 150 x 80mm ferrous all flanged reducer	nr	2		
	Double Collars				
	Couplings/Stepped couplings				
J351.1	DN 80mm straight coupling	nr	9		
J351.2	DN 150mm straight coupling	nr	15		
	Adaptors				
J351.1	DN 50mm flange adaptor	nr	15		
J351.2	DN 80mm flange adaptor	nr	9		
	Straight Specials				
J381.1	DN 50mm ferrous flanged spigot pipe, 1.2m long	nr	15		
J381.2	DN 80mm plain ended pipe, 1.2m long	nr	1		
J381.3	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	7		
	High density polyethylene pipes (HDPE) PE 100				
	Junctions and Branches				
J621.1	OD 160 x 75 Plain Ended Tee	nr	3		
	Straight specials				
J681.1	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	6		
J681.2	OD 75mm Stub end with flange	nr	3		
J681.3	OD 160mm Stub end with flange	nr	2		
J681.4	OD 160mm end cap	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 4.6 Eastleigh (PROVISIONAL)					
Proposed Water Line 34AD-45BE, 45J-45Z, 45B-45G, 45AT-45AV, 45AA-45AF, 45AK-45AH along Timboroa Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Valves				
J811.1	DN 50mm all flanged sluice valve	nr	15		
J811.2	DN 80mm all flanged sluice valve	nr	7		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
K200	Manholes Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	23		
K82	Marker Posts Supply and fix marker posts with required labelling as shown on standard drawings	nr	33		
	Reinstatements				
K731.1	Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	113		
K731.2	Ditto' - but Concrete block paved road	m	265		
K731.1	Reinstatement of footpaths Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 500mm.	m	265		
K731.2	Ditto' - but Concrete block paved road	m	617		
L	Pipework - Supports and protection, ancillaries to laying and excavation				
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION Extras to excavation and backfilling for excavation in Rock. Rate to include carting away and disposal. (Provisional) Note:- Blasting is NOT permitted for Item L				
	Extras to excavation and backfilling as per Clause 301 of The Specifications for pipeline and chambers				
L111.1	Excavation in trench for rock class "A"	m ³	147		
L111.2	Excavation in trench for rock class "B"	m ³	147		
L111.3	Excavation in trench for rock class "C"	m ³	196		
	Surrounds				
L531	Provide, place and compact selected imported granular fill material in bed and surround to pipes as specified and where directed by the Engineer.	m	630		
	Pipe Detectable Underground Warning Tape				
L6	Upon backfill to crown of the pipe, place detectable underground warning tape, minimum 75mm wide as required in specifications.	m	1,260		
	Page Total Carried Forward to Next Page				

Bill No. 4.6 Eastleigh (PROVISIONAL)					
Proposed Water Line 34AD-45BE, 45J-45Z, 45B-45G, 45AT-45AV, 45AA-45AF, 45AK-45AH along Timboroa Street					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Concrete supports, thrust blocks, stools and anchor blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	51		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill 4 - COLLECTION SHEET		
EASTLEIGH (PROVISIONAL)		
SECTION	DESCRIPTION	TOTAL AMOUNT
		(Kshs.)
	BILL No. 4.1	
	BILL No. 4.2	
	BILL No. 4.3	
	BILL No. 4.4	
	BILL No. 4.5	
	BILL No. 4.6	
TOTAL EXCLUSIVE OF VAT CARRIED TO SUMMARY SHEET		

Bill No. 5.1 Ngara (PROVISIONAL) Proposed Water Line 36C-38F on Kolobot Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD160mm HDPE	m	920		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.2	OD160mm HDPE	m	920		
	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated.				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711	OD160mm	m	920		
	Page Total Carried Forward to Next Page				

Bill No. 5.1 Ngara (PROVISIONAL) Proposed Water Line 36C-38F on Kolobot Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings. Junctions and Branches				
J321.1	DN150x50mm Saddle Clamp	nr	1		
J321.2	DN150x50mm Ferrous all flanged tee	nr	1		
	Double Collars				
J341.1	DN100/100mm Stepped Coupling	nr	2		
J341.2	DN150/150mm Stepped Coupling	nr	13		
J341.3	DN150mm Straight Coupling	nr	10		
	Adaptors				
J351.1	DN80mm Flange Adaptor	nr	1		
J351.2	DN150mm Flange Adaptor	nr	2		
	Straight Specials				
J381.1	DN80mm ferrous flanged spigot pipe, 1.2m long	nr	1		
J381.2	Ditto but 150mm	nr	2		
	High density polyethylene pipes (HDPE) PE 100 HDPE Bends				
J611.1	OD75mm, 90° Bend	nr	5		
J611.2	OD160mm, 45° Bend	nr	1		
	Junctions and Branches				
J621.1	OD110 x 110m Plain Ended Tee	nr	1		
J621.2	OD160 x 75m Plain Ended Tee	nr	5		
J621.3	OD160 x 110mm Plain Ended Tee	nr	1		
J621.4	OD160 x 160mm Plain Ended Tee	nr	3		
J622	OD160x110mm Plain Ended HDPE Reducer	nr	1		
	Straight Specials				
J681.1	OD75mm plain ended pipe, 1.2m long, cut to suit	nr	10		
J681.2	OD75mm Stub End with flange	nr	5		
J681.3	Ditto but 110mm	nr	1		
J681.4	Ditto but 160mm	nr	2		
J682	OD 160mm End Cap	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 5.1 Ngara (PROVISIONAL)					
Proposed Water Line 36C-38F on Kolobot Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Valves				
J811.1	DN50mm all flanged sluice valve	nr	1		
J811.2	Ditto but DN80mm	nr	1		
J811.3	Ditto but DN100mm	nr	1		
J811.4	Ditto but DN150mm	nr	2		
	Air Valves				
J861	DN50mm reinforced polyamide combination air valve	nr	1		
	Hydrants				
J901	DN80mm fire hydrant	nr	5		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct precast concrete chambers. Include for supply and fixing of removable precast concrete covers, step irons, compacted granular fill, etc. All as detailed in standard drawings.				
	Provide all materials and construct valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork e.t.c				
	Manholes				
K152	Chamber internal dimensions 1200mm x 1500mm, depth n.e. 2m	nr.	1		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	9		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	8		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	30		
K731.2	Ditto' - but Concrete block paved road	m	15		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	53		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	23		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
L711	Volume:- n.e. 0.1m³ To nominal bore 50mm	nr	3		
	Page Total Carried Forward to Next Page				

Bill No. 5.1 Ngara (PROVISIONAL)

Proposed Water Line 36C-38F on Kolobot Rd

Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
X	Miscellaneous Works Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	L.S		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 5.2 Ngara (PROVISIONAL) Proposed Water Line 37Q-37T, 37J-37U, 39C-40F, 37D- 38C, 38C-38E, 38C-38A on Munae, Mushembi, Chambers & Kipkabus, Kienjeku Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD110mm HDPE	m	590		
A260.2	OD160mm HDPE	m	1,330		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.3	OD110mm HDPE	m	590		
A260.4	OD160mm HDPE	m	1,330		
	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated. The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711.1	OD110mm	m	590		
I711.2	OD160mm	m	1,330		
Page Total Carried Forward to Next Page					

Bill No. 5.2 Ngara (PROVISIONAL) Proposed Water Line 37Q-37T, 37J-37U, 39C-40F, 37D- 38C, 38C-38E, 38C-38A on Munae, Mushembi, Chambers & Kipkabus, Kienjoku Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings.				
	Junctions and Branches				
J321.1	DN150x50mm Saddle Clamp	nr	1		
J321.2	DN150x65mm Saddle Clamp	nr	1		
J321.3	Ditto but 150x80mm	nr	2		
J321.4	DN150 x 50mm Ferrous All Flanged Tee	nr	1		
J321.5	DN200 x 150mm Ferrous All Flanged Tee	nr	2		
	Double Collars				
J341.1	Ditto but 100/100mm	nr	4		
J341.2	Ditto but 150/150mm	nr	28		
J341.3	DN100mm Straight Coupling	nr	11		
J341.4	Ditto but 150mm	nr	10		
J341.5	Ditto but 200mm	nr	4		
	Adaptors				
J351.1	DN50mm Flange Adaptor	nr	1		
J351.2	Ditto but 65mm	nr	2		
J351.3	Ditto but 80mm	nr	2		
J351.4	Ditto but 100mm	nr	2		
J351.5	Ditto but 150mm	nr	3		
	Straight Specials				
J381.1	DN80mm ferrous plain ended pipe, 1.2m long, cut to suit	nr	1		
J381.2	DN50mm ferrous flanged spigot pipe, 1.2m long	nr	1		
J381.3	Ditto but 80mm	nr	1		
J381.4	Ditto but 150mm	nr	2		
J381.5	Ditto but 200mm	nr	4		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD75mm, 90° Bend	nr	10		
J611.2	OD110mm, 90° Bend	nr	3		
J611.3	OD160mm, 30° Bend	nr	2		
J611.4	Ditto but 45° Bend	nr	1		
J611.5	Ditto but 60° Bend	nr	1		
	Page Total Carried Forward to Next Page				

Bill No. 5.2 Ngara (PROVISIONAL)					
Proposed Water Line 37Q-37T, 37J-37U, 39C-40F, 37D- 38C, 38C-38E, 38C-38A on Munae, Mushembi, Chambers & Kipkabus, Kienjeku Rd					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Junctions and Branches				
J621.1	OD110 x 110mm Plain Ended Tee	nr	2		
J621.2	OD110 x 75mm Plain Ended Tee	nr	2		
J621.3	OD160 x 75mm Plain Ended Tee	nr	10		
J621.4	OD160 x 110mm Plain Ended Tee	nr	5		
	HDPE Tapers				
J631.1	OD160x110mm Plain Ended HDPE Reducer	nr	1		
	Straight Specials				
J681.1	OD63mm plain ended pipe, 1.2m long	nr	1		
J681.1	Ditto but 75mm	nr	20		
J681.3	Ditto but 160mm	nr	1		
J681.4	OD75mm Stub End with flange	nr	12		
J681.5	Ditto but 110mm	nr	4		
J681.6	Ditto but 160mm	nr	2		
J682.1	OD 110mm End Cap	nr	1		
J682.2	OD 160mm End Cap	nr	1		
	Valves				
J811.1	DN50mm all flanged sluice valve	nr	2		
J811.2	Ditto but 65mm	nr	2		
J811.3	Ditto but 80mm	nr	2		
J811.4	Ditto but 100mm	nr	4		
J811.5	Ditto but 150mm	nr	5		
	Air Valves				
J861	DN50mm reinforced polyamide combination air valve	nr	1		
	Hydrants				
J901	DN80mm fire hydrant	nr	10		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K152.1	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	1		
K152.2	Chamber internal dimensions 1200mm x 1500mm, depth n.e. 2m	nr.	2		
K200	Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	19		
	Page Total Carried Forward to Next Page				

Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	17		
	Reinstatements				
K731.1	Breaking up,temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	65		
K731.2	Ditto' - but Concrete block paved road	m	30		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	111		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	48		
L L7	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u> Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711	To nominal bore 150mm	nr	9		
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	4		
X	Miscellaneous Works Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

PAGE 99 of 121

Bill No. 6.1 Jogoo Road (PROVISIONAL) Proposed Water Lines: 60N-60Q, 60Q-62B, 62C-62G, 62G-54A, 54A-63C 63D-55B, 54H-54G 54A-54D, and 55C-73A along Ahero St.- Ambira Rd, Heshima Rd and Nyasa Rd.- Jogoo Rd and in Bahati Estate.					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.				
	CLASS A - GENERAL ITEMS				
	Testing of the Works				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD 160mm HDPE	m	5,350		
A260.2	OD 200mm HDPE	m	1,800		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.3	OD 160mm HDPE	m	5,350		
A260.4	OD 200mm HDPE	m	1,800		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item	PS		
	CLASS D: DEMOLITION AND SITE CLEARANCE				
D11	General site clearance along the pipeline alignment	ha	0.43		
	Buildings and Other Structures				
D46	Allow for demolition and removal of buildings and all other structures including all chambers, marker posts, brickwork, concrete, masonry, metal, timber and other materials from the wayleave. The rate includes for removal of all waste material.	Item	PS		
D61.1	Removal of existing pipeline and carting away of removed existing pipe and fittings to approved tips. OD160mm, depth not exceeding 1.5m	m	5,350		
D61.2	Removal of existing pipeline and carting away of removed existing pipe and fittings to approved tips. OD200mm, depth not exceeding 1.5m	m	1,800		
	CLASS I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Page Total Carried Forward to Next Page				

Bill No. 6.1 Jogoo Road (PROVISIONAL) Proposed Water Lines: 60N-60Q, 60Q-62B, 62C-62G, 62G-54A, 54A-63C 63D-55B, 54H-54G 54A-54D, and 55C-73A along Ahero St.- Ambira Rd, Heshima Rd and Nyasa Rd.- Jogoo Rd and in Bahati Estate.					
	Sum Brought Forward From Previous Page				
I712	OD160mm, depth not exceeding 1.5m	m	4,280		
I713	OD160mm, depth not exceeding 2.0m	m	1,070		
I714	OD200mm, depth not exceeding 1.5m	m	1,440		
I715	OD200mm, depth not exceeding 2.0m	m	360		
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Junctions and Branches				
J321.1	DN 150 x 50mm Saddle Clamp	nr	7		
J321.2	DN 200 x 80mm Saddle Clamp	nr	2		
J321.3	DN 200 x 100mm Ferrous All Flanged Tee	nr	1		
J321.4	DN 200 x 200mm Ferrous All Flanged Tee	nr	1		
	Double Collars (Couplings/Stepped couplings)				
J341.1	DN 100mm Straight Coupling	nr	1		
J341.2	Ditto but 150mm	nr	153		
J341.4	Ditto but 100/100mm	nr	4		
J341.5	Ditto but 125/150mm	nr	1		
J341.7	DN 200mm Straight Coupling	nr	45		
J341.8	DN 200/200mm Stepped Coupling	nr	10		
J343	DN 300/300mm Stepped Coupling	nr	2		
	Adaptors				
J351.1	DN 50mm Ferrous Flange Adaptor	nr	7		
J351.2	Ditto but 80mm	nr	7		
J351.3	Ditto but 100mm	nr	5		
J351.4	Ditto but 150mm	nr	13		
	Straight Specials				
J381.1	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	2		
J381.2	Ditto but 100mm	nr	1		
J381.3	Ditto but 200mm	nr	5		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	OD 75mm, 90° Bend	nr	36		
	Page Total Carried Forward to Next Page				

Bill No. 6.1 Jogoo Road (PROVISIONAL)					
Proposed Water Lines: 60N-60Q, 60Q-62B, 62C-62G, 62G-54A, 54A-63C 63D-55B, 54H-54G 54A-54D, and 55C-73A along Ahero St.- Ambira Rd, Heshima Rd and Nyasa Rd.- Jogoo Rd and in Bahati Estate.					
	Sum Brought Forward From Previous Page				
J611.2	OD 160mm, 30o Bend	nr	4		
J611.3	Ditto but 60°	nr	4		
J611.4	Ditto but 75°	nr	8		
J611.5	Ditto but 90°	nr	8		
J611.6	DN200mm, 30°	nr	1		
	Junctions and Branches				
J621.1	OD 110x110mm Plain Ended Tee	nr	1		
J621.2	OD 160 x 75mm Plain Ended Tee	nr	44		
J621.3	Ditto but 160 x 110mm	nr	2		
J621.3	Ditto but 160 x 160mm	nr	12		
J621.4	Ditto but 160 x 160mm plain ended 45° HDPE tee	nr	1		
J621.5	OD 200 x 75mm Plain Ended Tee	nr	16		
J621.6	Ditto but 200 x 110mm	nr	3		
J621.7	Ditto but 200 x 160mm	nr	1		
J622.1	Ditto but 225 x 160mm	nr	5		
J623.1	OD 315 x 160mm Plain Ended Tee	nr	1		
	Tapers				
J631.1	OD 160 x 110mm HDPE Reducer	nr	3		
J631.2	OD 200x 160mm HDPE Reducer	nr	1		
	Straight Specials				
J681.1	OD 50mm plain ended pipe, 1.2m long, cut to suit	nr	7		
J681.2	Ditto but 75mm	nr	18		
J681.3	Ditto but 110mm	nr	1		
J681.4	Ditto but 160mm	nr	3		
J681.2	OD 50mm Stub End with flange	nr	7		
J681.2	Ditto but 75mm	nr	60		
J681.3	Ditto but 110mm	nr	5		
J681.4	Ditto but 160mm	nr	11		
J681.5	OD 160mm End Cap	nr	1		
J681.6	OD 200mm plain ended pipe, 1.2m long, cut to suit	nr	1		
	Valves				
J811.1	DN50mm all flanged sluice valve	nr	7		
J811.2	Ditto but 80mm	nr	7		
J811.3	Ditto but 100mm	nr	6		
J811.4	Ditto but 150mm	nr	13		
J811.5	Ditto but 200mm	nr	2		
	Page Total Carried Forward to Next Page				

Bill No. 6.1 Jogoo Road (PROVISIONAL) Proposed Water Lines: 60N-60Q, 60Q-62B, 62C-62G, 62G-54A, 54A-63C 63D-55B, 54H-54G 54A-54D, and 55C-73A along Ahero St.- Ambira Rd, Heshima Rd and Nyasa Rd.- Jogoo Rd and in Bahati Estate.					
	Sum Brought Forward From Previous Page				
	Hydrants				
J901	DN 80mm fire hydrant	nr	45		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers				
	Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill surround, e.t.c				
	Manholes				
K151.1	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	1		
K151.2	Chamber internal dimensions 1200mm x 1200mm, depth n.e. 2m	nr.	1		
K151.3	Standard plastic surface box internal diameter 300mm, depth n.e. 2m	nr.	87		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	69		
	Reinstatements				
K731.1	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	225		
K731.2	Ditto' - but Concrete block paved road	m	97		
K731.3	Ditto' - but murrum paved road	m	751		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	751		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	1,752		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
	Extras to excavation and backfilling for excavation in Rock. Rate to include carting away and disposal. (Provisional)				
	Note:- Blasting is NOT permitted for Item L				
	Extras to excavation and backfilling as per Clause 301 of The Specifications for pipeline and chambers				
L111.1	Excavation in trench for rock class "A"	m ³	651		
L111.2	Excavation in trench for rock class "B"	m ³	651		
L111.3	Excavation in trench for rock class "C"	m ³	868		
	Surrounds				
L531	Provide, place and compact selected imported granular fill material in bed and surround to pipes as specified and where directed by the Engineer.	m	3,575		
	Pipe Detectable Underground Warning Tape				
L6	Upon backfill to crown of the pipe, place detectable underground warning tape, minimum 75mm wide as required in specifications.	m	7,150		
	Page Total Carried Forward to Next Page				

Bill No. 6.1 Jogoo Road (PROVISIONAL) Proposed Water Lines: 60N-60Q, 60Q-62B, 62C-62G, 62G-54A, 54A-63C 63D-55B, 54H-54G 54A-54D, and 55C-73A along Ahero St.- Ambira Rd, Heshima Rd and Nyasa Rd.- Jogoo Rd and in Bahati Estate.					
	Sum Brought Forward From Previous Page				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, end caps and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711.1	To nominal bore 200mm	nr	10		
	Volume:- 0.1 - 0.2m³				
L721.1	To nominal bore 200mm	nr	12		
	Volume:- 0.2 - 0.5m³				
L731.1	To nominal bore 200mm	nr	4		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	Decommissioning of Redundant Asbestos Cement Mains				
X64	Allow for excavation and safe removal of existing Asbestos Cement (AC) Mains in compliance with Vol. III Works Specifications. Disposal of AC waste to be done by approved licensed handler in accordance with NEMA requirements. Workers to be issued with required PPE for AC hazard level and undergo AC removal and site induction procedure. AC pipe OD 160mm and OD200	Kg	82,330		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

Bill No. 6.2		Jogoo Road (PROVISIONAL)			
Proposed Water Lines: 70A-71G, 70N-70Q along Njiwa Rd- Ngiri Rd and in Mbotela Estate					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	<p>NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in same position as existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline. The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.</p>				
	<p>CLASS A - GENERAL ITEMS</p>				
	<p>Testing of the Works</p>				
	Pipeline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing.				
A260.1	OD160mm HDPE	m	2,150		
	Disinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l Calcium Hypochlorite, left for 24 hours, including all the required equipment, materials, chemicals and water. Rate includes laboratory testing for measurement of residual chlorine, flushing with clean water and the safe disposal of the disinfecting water to the Engineer's approval.				
A260.5	OD160mm HDPE	m	2,150		
A3	Method Related Charges				
A35.2	Allow for method related charges the tenderer feels may be required. These should be indicated below with pricing for each item				
A35.2.1	i)	Item			
	<p>CLASS I: PIPEWORK - PIPES</p>				
	<p>SUPPLY AND LAYING OF PIPELINES</p>				
	Supply, transport to site and store in secure place. Transport from site store, lay and joint pipes by 'butt fusion' welding in trench; include for excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. High density polyethylene pipes (HDPE) PE 100 - PN 16				
	Replace existing water mains by pipe cracking or bursting method to diameters indicated.				
	The rates entered against the items in this section shall include costs for - Supply, transportation, storage, security, insurance, - Replacement of existing pipes, welding pipes using 'butt fusion', - Excavation for launch/ retrieval/ access pits in all material including demolition of chamber/structures on existing alignment, preparation of surfaces, disposal of excavated material, shoring, support, keeping excavation free from water or other flows, etc. backfilling with approved excavated material in the launch/retrieval pits. - Disposal of excavated pipes and fittings to tips approved by the engineer. Fittings in good condition to be handed over to Client as per engineer's assessment.				
I711.2	OD 160mm	m	2,150		
	Page Total Carried Forward to Next Page				

Bill No. 6.2		Jogoo Road (PROVISIONAL)			
Proposed Water Lines: 70A-71G, 70N-70Q along Njiwa Rd- Ngiri Rd and in Mbotela Estate					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	CLASS J - PIPEWORK - FITTINGS AND VALVES				
	<u>SUPPLY AND INSTALLATION OF FITTINGS</u> Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets etc as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butt fusion welding, bolting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement.				
	Epoxy FBE coated and lined steel pipe fittings				
	Double Collars (Couplings/Stepped couplings)				
J341.1	DN 150mm Straight Coupling	nr	23		
J341.2	DN 150/150mm Stepped Coupling	nr	1		
	Adaptors				
J351.1	DN 65mm Ferrous Flange Adaptor	nr	6		
	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
J611.1	Ditto but 45°	nr	4		
J611.2	Ditto but 90°	nr	1		
	Junctions and Branches				
J621.1	Ditto but 160 x 75mm	nr	6		
J621.2	Ditto but 160 x 160mm	nr	1		
	Straight Specials				
J681.1	75mm Stub End with flange	nr	6		
	Page Total Carried Forward to Next Page				

Bill No. 6.2		Jogoo Road (PROVISIONAL)			
Proposed Water Lines: 70A-71G, 70N-70Q along Njiwa Rd- Ngiri Rd and in Mbotela Estate					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J681.8	OD 160mm End Cap	nr	3		
J681.9	160mm Stub End with flange	nr	3		
	Valves				
J811.1	Ditto but 65mm	nr	6		
	Hydrants				
J910.3	DN 80mm fire hydrant	nr	10		
	CLASS K: PIPEWORK - PIPEWORK ANCILLARIES				
	Includes manholes and other chambers, ducts, culverts, crossings, thrust blocks, anchor blocks, reinstatement and other pipework ancillaries.				
	Chambers Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and bulk meter chambers as detailed in Standard Drawings. Rate includes all costs such as excavation, concrete, re-steel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill sorround, e.t.c				
K200	Manholes Narrow HDPE chamber with surface box / lockable cover OD200mm, Depth n.e 2m as per Drawing No. 6000023-HH-SD-DR-W-003	nr.	6		
	Marker Posts				
K82	Supply and fix marker posts with required labelling as shown on standard drawings	nr	16		
	Reinstatements				
K731	Breaking up, temporary and permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in his rated, nominal bore not exceeding 300mm.	m	100		
K733	Ditto' - but murram paved road	m	10		
	Reinstatement of footpaths				
K742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	128		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	55		
	Page Total Carried Forward to Next Page				

Bill No. 6.2		Jogoo Road (PROVISIONAL)			
Proposed Water Lines: 70A-71G, 70N-70Q along Njiwa Rd- Ngiri Rd and in Mbotela Estate					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	<u>Thrust blocks for tees, end caps and anchor blocks for tapers, gate valves and bends - concrete class 20/20</u>				
	Rates to include for excavation, formwork, provision and placing of concrete, backfilling etc				
	Volume:- n.e. 0.1m³				
L711.1	To nominal bore 200mm	nr	10		
X	Miscellaneous Works				
	Temporary water supply				
X6.1	Maintain temporary uninterrupted supply of water to existing NCWSC consumers of the pipeline during construction works. The rate will include subsequent removal upon completion of works and reinstatement of all surfaces to the satisfaction of the engineer.	Item	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

PAGE 109 of 121

Bill No. 7.1 CONSUMER CONNECTIONS					
Central Business District and Central Industrial Area					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	<p>NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in the same alignment as the existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline.</p> <p>The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.</p> <p>The works under this Bill entail the following; - Reinstatement of Consumer Connections that already exist on the Pipelines that are being replaced/ decommissioned under the Project. Consumer Connections that are on the replaced/ decommissioned lines have to be transferred to the new mains once these mains have been commissioned. - The bill also contains provisional new connections along rehabilitated lines. - All pipes, fittings, materials, etc removed/ replaced should be carted away to site approved by the Engineer.</p> <p>CLASS I: PIPEWORK - PIPES</p> <p>Supply and Installation of Pipes and Fittings to be used for Reinstatement of Existing Consumer Connections</p> <p>Typical arrangement of pipes and fittings for a consumer connection are shown in standard drawings.</p> <p>The Pipes and Fittings to be supplied under this Item are for 4895 Nr. Consumer Connections.</p> <p>Supply, Transport to Site and install all Pipes for the Consumer Connections. All pipes and fittings to be pressure Class PN 10 Rating.</p>				
I612.1	DN15mm, PPR pipe	m	3,533		
I612.2	Ditto but 20mm	m	1,598		
I612.3	Ditto but 25mm	m	715		
I612.4	Ditto but 32mm	m	379		
I612.5	Ditto but 40mm	m	189		
I612.6	Ditto but 50mm	m	400		
I612.7	Ditto but 63mm	m	126		
I612.8	Ditto but 90mm HDPE Pipe	m	189		
I612.9	Ditto but 110mm	m	42		
	<p>CLASS J: PIPEWORK - FITTINGS AND VALVES</p> <p>Supply, Transport to Site and install all Fittings (Refer to Standard drawing excluding consumer meter) for REINSTATED CONSUMER CONNECTIONS</p> <p>Rates to Include all necessary Jointing Material/ Fittings. All pipes and fittings to be pressure Class PN 10 Rating.</p>				
J691.1	Connected to 110mm dia. HDPE distribution line 15mm dia	nr	122		
	Page Total Carried Forward to Next Page				

PAGE 111 of 121

Bill No. 7.1 CONSUMER CONNECTIONS					
Central Business District and Central Industrial Area					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Supply, Transport to Site and install all Pipes and Fittings (including saddle clamps, brass ferrules etc. as shown in standard drawing but excluding consumer meter) for NEW CONSUMER CONNECTIONS				
	Rates to Include all necessary Jointing Material/ Fittings. All pipes and fittings to be pressure Class PN 10 Rating.				
	Connected to 110mm dia. HDPE distribution line				
J691.1	15mm dia	nr	13		
J691.2	20mm dia	nr	1		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	1		
J691.5	40mm dia	nr	1		
	Connected to 160mm dia. HDPE distribution line				
J691.1	15mm dia	nr	50		
J691.2	20mm dia	nr	13		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	4		
J691.5	40mm dia	nr	2		
J691.6	50mm dia	nr	2		
J691.7	63mm dia	nr	1		
J691.8	90mm dia	nr	1		
	Connected to 200mm dia. HDPE distribution line				
J691.1	15mm dia	nr	21		
J691.2	20mm dia	nr	4		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	4		
J691.5	40mm dia	nr	4		
J691.6	50mm dia	nr	3		
J691.7	63mm dia	nr	4		
J691.8	90mm dia	nr	2		
J691.9	110mm dia	nr	2		
	Connected to 250mm dia. HDPE distribution line				
J691.1	15mm dia	nr	2		
J691.2	20mm dia	nr	2		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	2		
J691.5	50mm dia	nr	2		
J691.6	63mm dia	nr	4		
J691.7	90mm dia	nr	1		
J691.8	110mm dia	nr	1		
	Connected to 315mm dia. HDPE distribution line				
J691.1	15mm dia	nr	3		
J691.2	20mm dia	nr	2		
J691.3	25mm dia	nr	2		
J691.4	32mm dia	nr	1		
J691.5	40mm dia	nr	2		
J691.6	50mm dia	nr	1		
	Consumer Water Meters				
	<u>Note: All Water Meters to be MID approved and to conform with EN ISO 4064: 2014, and KS OMIL R 49:2006 Specifications for Domestic Water Meters or approved equivalent.</u>				
J91*.1	15mm dia Consumer Plastic Water Meters, Single-Jet, Composite Body, Plastic Register. Type, Aquila or approved equivalent. The Meters to include inbuilt Meter Strainers & Non-Return Mechanism. Rate to include for Supply of Meters Liner (2Nr for each Meter). All Meters to be engraved with word "NCWSC" or as directed by the Engineer	nr	105		
J91*.2	Ditto but 20mm dia	nr	25		
J91*.3	Ditto but 25mm dia	nr	21		
	Page Total Carried Forward to Next Page				

PAGE 113 of 121

Bill No. 7.2 CONSUMER CONNECTIONS (PROVISIONAL)					
Eastleigh, Ngara, Jogoo Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	<p>NOTE: The works entail rehabilitation of existing pipelines. The rehabilitation pipelines will be laid as much as possible in the same alignment as the existing pipeline. The pipeline wayleaves have existing active services both on the surface and buried including electricity lines, water pipelines, sewers, fiber optic cables, etc.). There is limited working space for mechanical excavation equipment and stock piling of excavated material along the pipeline.</p> <p>The Contractor's rates should allow for any measures necessary to deal with the terrain, provision of access to the work sites, mitigation against interruption of existing water supply. The Contractors rates shall be deemed to include all the above.</p> <p>The works under this Bill entail the following; - Reinstatement of Consumer Connections that already exist on the Pipelines that are being replaced/ decommissioned under the Project. Consumer Connections that are on the replaced/ decommissioned lines have to be transferred to the new mains once these mains have been commissioned. - The bill also contains provisional new connections along rehabilitated lines. - All pipes, fittings, materials, etc removed/ replaced should be carted away to site approved by the Engineer.</p> <p>CLASS I: PIPEWORK - PIPES</p> <p>Supply and Installation of Pipes and Fittings to be used for Reinstatement of Existing Consumer Connections</p> <p>Typical arrangement of pipes and fittings for a consumer connection are shown in standard drawings.</p> <p>The Pipes and Fittings to be supplied under this Item are for 4895 Nr. Consumer Connections.</p> <p>Supply, Transport to Site and install all Pipes for the Consumer Connections. All pipes and fittings to be pressure Class PN 10 Rating.</p>				
I612.1	DN15mm, PPR pipe	m	3,145		
I612.2	Ditto but 20mm	m	1,423		
I612.3	Ditto but 25mm	m	636		
I612.4	Ditto but 32mm	m	337		
I612.5	Ditto but 40mm	m	168		
I612.6	Ditto but 50mm	m	356		
I612.7	Ditto but 63mm	m	112		
I612.8	Ditto but 90mm HDPE Pipe	m	168		
I612.9	Ditto but 110mm	m	37		
	<p>CLASS J: PIPEWORK - FITTINGS AND VALVES</p> <p>Supply, Transport to Site and install all Fittings (Refer to Standard drawing excluding consumer meter) for REINSTATED CONSUMER CONNECTIONS</p> <p>Rates to Include all necessary Jointing Material/ Fittings. All pipes and fittings to be pressure Class PN 10 Rating.</p>				
J691.1	Connected to 110mm dia. HDPE distribution line 15mm dia	nr	109		
	Page Total Carried Forward to Next Page				

PAGE 115 of 121

Bill No. 7.2 CONSUMER CONNECTIONS (PROVISIONAL)					
Eastleigh, Ngara, Jogoo Road					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Supply, Transport to Site and install all Pipes and Fittings (including saddle clamps, brass ferrules etc. as shown in standard drawing but excluding consumer meter) for NEW CONSUMER CONNECTIONS				
	Rates to Include all necessary Jointing Material/ Fittings. All pipes and fittings to be pressure Class PN 10 Rating.				
	Connected to 110mm dia. HDPE distribution line				
J691.1	15mm dia	nr	11		
J691.2	20mm dia	nr	1		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	1		
J691.5	40mm dia	nr	1		
	Connected to 160mm dia. HDPE distribution line				
J691.1	15mm dia	nr	45		
J691.2	20mm dia	nr	11		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	4		
J691.5	40mm dia	nr	2		
J691.6	50mm dia	nr	2		
J691.7	63mm dia	nr	1		
J691.8	90mm dia	nr			
	Connected to 200mm dia. HDPE distribution line				
J691.1	15mm dia	nr	19		
J691.2	20mm dia	nr	4		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	4		
J691.5	40mm dia	nr	4		
J691.6	50mm dia	nr	3		
J691.7	63mm dia	nr	4		
J691.8	90mm dia	nr	1		
J691.9	110mm dia	nr	2		
	Connected to 250mm dia. HDPE distribution line				
J691.1	15mm dia	nr	2		
J691.2	20mm dia	nr	1		
J691.3	25mm dia	nr	4		
J691.4	32mm dia	nr	1		
J691.5	50mm dia	nr	2		
J691.6	63mm dia	nr	3		
	Connected to 315mm dia. HDPE distribution line				
J691.1	15mm dia	nr	3		
J691.2	20mm dia	nr	1		
J691.3	25mm dia	nr	1		
J691.4	40mm dia	nr	1		
J691.5	50mm dia	nr	1		
	Consumer Water Meters				
	<u>Note: All Water Meters to be MID approved and to conform with EN ISO 4064: 2014, and KS QMIL R 49:2006 Specifications for Domestic Water Meters or approved equivalent.</u>				
J91*.1	15mm dia Consumer Plastic Water Meters, Single-Jet, Composite Body, Plastic Register. Type, Aquila or approved equivalent. The Meters to include inbuilt Meter Strainers & Non-Return Mechanism. Rate to include for Supply of Meters Liner (2Nr for each Meter). All Meters to be engraved with word "NCWSC" or as directed by the Engineer	nr	94		
J91*.2	Ditto but 20mm dia	nr	22		
J91*.3	Ditto but 25mm dia	nr	19		
	Page Total Carried Forward to Next Page				

PAGE 117 of 121

PAGE 118 of 121

Bill No. 8 DAYWORKS					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	THE WHOLE OF THIS BILL IS PROVISIONAL				
1.0	LABOUR				
	The rates inserted herein should include for all costs such as insurance, travelling time, overtime, accommodation, use and maintenance of small tools of trade, supervision, overheads and profit. Only time engaged upon work will be paid for:				
1.1	Unskilled Labourer	Hrs	100		
1.2	Timberman	Hrs	50		
1.3	Stone Mason	Hrs	100		
1.4	Carpenter	Hrs	50		
1.5	Concretor	Hrs	50		
1.6	Blaster (Certified)	Hrs	10		
1.7	Pipelayer	Hrs	50		
1.8	Painter	Hrs	10		
1.9	Surveyor	Hrs	50		
1.10	Foreman	Hrs	100		
1.11	Watchman (including use of firewood, lights, day, night, Sunday and Public Holiday watching)	Hrs	50		
2	PLANT				
	The rates inserted herein should include for all operational and maintenance costs, fuel, oil, grease, operators, turnboys, supervision, overhead and profits. Only the time actually employed on works will be paid for and the rates should include for idle, travelling and overtime				
2.1	Compressor (3.0 m ³ /minute)	Hrs	50		
2.2	D4 Tractor	Hrs	50		
2.3	Concrete Vibrator (Petrol or Diesel)	Hrs	50		
2.4	Concrete Mixer 14/10 (including batch weighing gear and drag feed shovel)	Hrs	100		
2.5	Dumper 0.38 m ³	Hrs	50		
2.6	Tandem 3 wheels roller. Dead weight 9 tonnes	Hrs	20		
2.7	5 Tonne Lorry (Tipper)	Hrs	50		
2.8	7 Tonne Lorry (Tipper)	Hrs	50		
2.9	Portable water pump 50mm diameter (inclusive of hoses, couplings, etc.)	Hrs	50		
2.1	Oxy-Acetylene cutting and welding set, including oxygen and acetylene	Hrs	20		
2.11	Electric welding set including electrodes	Hrs	10		
2.12	Rock Breaker Machine, 10 tonnes	Hrs	10		
2.13	Motor Grader with at least 3.6m blade	Hrs	20		
2.14	Forklift, 2 Tonne capacity	Hrs	10		
2.15	Water Bowser, 8000 litres	Hrs	30		
	Page Total Carried Forward to Next Page				

Bill No. 8 DAYWORKS					
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
3	MATERIALS				
	All materials are to comply with the specifications. The rates inserted herein are to include for delivery to site, storage, handling, overheads and profits				
3.1	Ordinary Portland Cement	Tonne	1		
3.2	Mild steel (any size from 8mm to 25mm dia.)	Kg	50		
3.3	High tensile steel (any size from 8mm to 15mm dia.)	Kg	50		
3.4	Fine aggregate for concrete	m ³	20		
3.5	Coarse aggregate for concrete	m ³	20		
3.6	Use of shuttering timber	m ²	10		
3.7	Murram	m ³	20		
3.8	300mm dia. Concrete Ogee Pipe	m	20		
3.9	Concrete Class 15/20	m ³	10		
3.1	Concrete Class 20/20	m ³	10		
3.11	Concrete Class 25/20	m ³	10		
3.12	600mm dia. Concrete Ogee Pipe	m	20		
3.13	900mm dia. Concrete Ogee Pipe	m	20		
3.14	uPVC Pipe, Class 'D' - OD 315mm	m	20		
3.15	uPVC Pipe, Class 'D' - OD 280mm	m	20		
3.16	uPVC Pipe, Class 'D' - OD 250mm	m	20		
3.17	uPVC Pipe, Class 'D' - OD 200mm	m	20		
3.18	uPVC Pipe, Class 'D' - OD 160mm	m	20		
3.19	uPVC Pipe, Class 'D' - OD 110mm	m	30		
3.2	uPVC Pipe, Class 'D' - OD 90mm	m	30		
3.21	uPVC Pipe, Class 'D' - OD 63mm	m	30		
3.22	uPVC Pipe, Class 'D' - OD 32mm	m	30		
3.23	uPVC Pipe, Class 'D' - OD 25mm	m	30		
3.24	Fusion bonded epoxy coated steel pipe DN 200	m	20		
3.25	Ditto but DN 250	m	50		
3.26	Ditto but DN 350	m	40		
4	SPECIALTY WORKS - as per specifications				
	CCTV camera inspection and assessment for nominal diameters:				
X601	diameter n.e. 200mm	m	1,000		
X602	diameter exceeding 200mm but n.e. 400mm	m	500		
X603	Ground Penetrating Radar (GPR) scans on paved wayleave n.e. 4m width	m	2,500		
	TOTAL CARRIED FORWARD TO SUMMARY SHEET				

GRAND SUMMARY		
SECTION	DESCRIPTION	TOTAL AMOUNT (Kshs.)
1	PRELIMINARIES & GENERAL (BILL No. 1)	
2	NAIROBI CENTRAL BUSINESS DISTRICT (BILL No. 2.1 - 2.9)	
3	CENTRAL INDUSTRIAL AREA (BILL No. 3.1 - 3.5)	
4	EASTLEIGH (BILL No. 4.1 - 4.6) - PROVISIONAL	
5	NGARA (Bill No. 5.1 - 5.2) - PROVISIONAL	
6	JOGOO ROAD (Bill No. 6.1 - 6.2) - PROVISIONAL	
7	CONSUMER RECONNECTIONS (Bill No. 7.1)	
8	SCHEDULE OF DAYWORK RATES (Bill No. 8)	
	Bills Total Exclusive of VAT - (A)	
	Add 10% of (A) for Contingencies - (B)	
	Bill Total Inclusive of Contingencies - (C)	
	Value Added Tax (VAT) (D) - 16% of (C)	
	GRAND TOTAL CARRIED TO LETTER OF BID [(C) + (D)]	