





ATHI WATER WORKS DEVELOPMENT AGENCY

CKE 1135 NAIROBI WATER AND SANITATON PROJECT

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Bidding Document Volume II

CONTENTSBills of Quantities

28TH MAY, 2024

Employer

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BIDDING DOCUMENTS

for

Procurement of

CKE 1135
NAIROBI WATER AND SANITATON 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:

- 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.
- 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.
- 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	m³or cu m	millimeter	mm
hectare	ha	month	mth
hour	hr	number	No.
kilogram	kg	provisional sum	P.S.
kilometre	km	square meter	m² 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 murram 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.

tem No.	Description	Unit	Quantity	Rate (KES.)	Amount (KES.)
	THE WHOLE OF THIS BILL IS PROVISIONAL				
	CLASS A: GENERAL ITEMS				
	Contractual Requirements				
A110.1	Performance Security	Item	L.S		
A120.1	Insurance of Works and Contractor's Equipment	Item	L.S		
A120.2	Third Party Insurance (including Employer's Property).	Item	L.S		
A120.3	Insurance against Accident to Workmen	Item	L.S		
	Specified Requirements				
A211.1	Provision of office for Resident Engineers Staff; Rent office space as specified in the Vol III Specifications to Engineer's approval.	month	25		
A211.2	Allow a Provisional Sum for provision of furniture and equipment to the Resident Engineer's office as per Vol III Specifications. Final list of furniture and equipment to be approved by Resident Engineer prior to ordering and will all revert to the employer at the end of the Contract.	Item	P.S.		5,000,00
A211.3	Allow for maintenance and attendance of the Engineer's office for monthly supply of consumables including stationery, refreshments, toiletries, etc. maintenance of equipment, and payment of bills (water, electricity, etc) as specified in Volume III Specifications by the Engineer	Item	P.S.		3,300,00
A211.4	Include percentage of Item (A211.2 and A211.3) for profit, administration etc.	%			
A221.1	Provide 2 No. alternative transport to Engineers staff before the acquisition of project vehicles. Vehicles to be as good as new and be equivalent to the vehicles being procured. Rate includes maintenance, running, servicing and insurance (2 vehicles x 6 months = 12 months)	vehicle month	12		
A233.3	Allow for provision of As-Built Drawings in accordance with Specifications of Bidding Document Volume III	Item	L.S		
A233.4	Allow for provision of Operation and Maintenance (O&M) Manual in accordance with Bidding Document Volume III Specifications	Item	L.S		
A233.5	Test Running of the Scheme: Allow for Test Running all the Project Components for a period of 4 weeks upon completion and offical commissioning of the Works. Test Running to be carried out in close liaison with NCWSC's Staff. Contractor to allow for training of Operation and Maintenance Staff, Tools, etc, all in accordance with Specifications of the Bidding Document Volume II	Item	L.S		

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 Sclaes 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		
A250.1	Testing of Materials and Works 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 Settting 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				

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.		15,000,00
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 reistatement to the original status and liason with the relevant body for inspection/approval during execution of the works. The rate shall be demeed to include repairs and reistatement 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)				

Item No.	Description	Unit	Quantity	Rate (KES.)	Amount (KES.)
	Sum Brought Forward From Previous Page				
ESHS	Environmental, Social, Health and Safety Cost Schedule as per Appendices in Vol III - Specifications				
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, 7and 9 of ESHS Specifications). [Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]	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). [Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]	Item	L.S		
ESHS 4	Accommodation, Drinking Water, Meals and Transportation of Staff. (Ref. Clauses 36, 40 and 41 of ESHS Specifications). [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]				
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)	Item	L.S		
	[Note: Cost of ESHS 1 should exclude all or part of the costs of these Tasks]				
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). [Note: The cost for "Site Mobilization" should exclude all or part of the costs associated to these Tasks]	Item	L.S		
Security	Security Cost Schedule				
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		

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)

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 110mm HDPE	m	590		
A260.2	OD 160mm HDPE	m	2,195		
A260.3	OD 200mm HDPE	m	600		
	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	OD 110mm HDPE	m	590		
A260.5	OD 160mm HDPE	m	2,195		
A260.6	OD 200mm HDPE	m	600		
А3	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	D	Item	PS		
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	er Lines: Loita St.(41N-47D), Koinange St.(41A-47G), Muindi Mbingu St.(41H-47	A), Njugu L	₋n.(41C-41S),	Tubman Rd.	(41F-42N),
Oniversity Way	(41W-41A), Harry Thuku Rd.(39A-39C) 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 polvethylene pines (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.				
l711.1	OD 110mm HDPE	m	590	1	
I711.2	OD 160mm HDPE	m	2,195		
l711.3	OD 200mm HDPE	m	600		
	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 (Reducers)				
J331	DN150 x 100mm Ferrous All Flanged Reducer	nr			
	Double Collars (Stepped couplings/Couplings)				
J341.1	DN100mm straight coupling	nr	13		
J341.2	DN150mm straight coupling	nr	69		
J341.3	Ditto but 200mm				
	1	nr	18		
J341.4	DN100/100mm Stepped Coupling	nr	2		
	Adaptors (Flange adaptors)				
	Adaptors (Frange adaptors)			1	
J351.1	DN 65mm flange adaptor	nr	1 1		
		nr nr	1 1 1		
J351.1	DN 65mm flange adaptor				

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)

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J351.4	Ditto but 150mm	nr	14	
	Straight Specials			
J381.1	DN 400mm ferrous spigot pipe, 1.2m long	nr	11	
J381.2	DN 400mm ferrous all flanged pipe, 1.2m long	nr	11	
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	11	
	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 170mm	nr	11	
J621.6	Ditto but 160 x 160mm	nr	2	
J621.7	Ditto but 200 x 75mm	nr	55	
J621.8	Ditto but 200 x 160mm	<u>nr</u>	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	
1044.4	Gate Valves			
J811.1	DN 65mm all flanged sluice valve	nr	11	
J811.2	Ditto but 80mm	nr	11	
J811.3	Ditto but 100mm		13	
J811.4	Ditto but 150mm	nr	9	
	Page Total Carried Forward to Next Page		1	

Proposed Water Lines: Loita St.(41N-47D), Koinange St.(41A-47G), Muindi Mbingu St.(41H-47A), Njugu Ln.(41C-41S), Tubman Rd.(41F-42N),

	Sum Brought Forward From Previous Page				
	Hydrants				
J901	DN 80mm fire hydrant	nr	28		
3301	DN commine nyacan				l
	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				
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		
	Markay Doolo				
K82	Marker Posts Supply and fix marker posts with required labelling as shown on standard drawings	nr	54		
	Palastata and a second				
(731.1	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	150		
(731.2	Ditto' - but Concrete block paved road	m	70		
	Reinstatement of footpaths				
(742.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	257		
(742.2	Ditto - but concrete and concrete block paved footpaths	m	110		
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7					
_L/	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 0.1m ³				
L711	Nominal Bore: n.e 150mm	nr	27		!
X	Miscellaneous Works				İ
	Temporary water supply				ļ
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		
					
					<u> </u>
				1	

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.				
4000.4			4.400		
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		
l711.2	OD 200mm	m	1,190		

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	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 but100mm	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			4		
0011.0	OD 200mm, 90° Bend	nr	4		
	Page Total Carried Forward to Next Page				

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		7		
		<u>nr</u>			
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	<u>nr</u>	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 sorround, e.t.c				
	Manholes	ļ			
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				

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		
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	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	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	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				

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		
А3	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.				
l731.1	OD 315mm	m	920		
l731.2	OD 400mm	m	730		
	Page Total Carried Forward to Next Page				

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				
J323.1	DN 300 x 150mm Ferrous All Flanged Tee	nr	1		
J323.2	DN 300 x 200mm Ferrous All Flanged Tee	nr	5		
J323.3	DN 300 x 80mm Saddle Clamp	<u>nr</u>	1		
J323.4	Ditto but 400 x 65mm	nr	1		
J323.5	DN 400 x 100mm Ferrous All Flanged Tee	nr	1		
J323.6	Ditto but 400 x 200mm	nr	3		
J323.7	Ditto but 400 x 300mm	nr	1		
J323.8	Ditto but 1000 x 400mm	nr	1		
	Tapers				
J333	DN 400 x 300mm Ferrous All Flanged Reducer	nr	1		
	Double Collars-Couplings/Stepped couplings				
J341.1					
	DN 100/100mm stepped coupling	<u>nr</u>	1		
J341.2	Ditto but 150/150mm	nr	1		
J341.3	Ditto but 200/200mm	nr	8		
J342.1	DN 300mm straight coupling	<u>nr</u>	14		
J342.2	DN 300/300mm stepped coupling	nr	14		
J343.1	DN 400mm straight coupling	nr	40		
J343.2	DN 400/400mm stepped coupling	nr	10		
J344.1	DN 1000mm straight coupling	nr	2		
	Adaptors				
J351.1	DN 65mm flange adaptor	<u>nr</u>	1		
J351.2	Ditto but 80mm	nr	1		
J351.3	Ditto but 100mm	nr	2		
			‡		
	Page Total Carried Forward to Next Page				

Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J351.4	Ditto but 150mm	<u>nr</u>	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	11		
J623.3	OD 315 x 160mm Plain Ended Tee	nr	11		
J623.4	OD 400 x 75mm Plain Ended Tee	nr	16		
J623.5	OD 400 x 110mm Plain Ended Tee	nr	11		
J623.6	OD 400 x 160mm Plain Ended Tee	nr	2		
1604.2	Straight Specials OD 75mm HDPE plain ended pipe, 1.2m long, cut to suit		24		
J681.3		nr			
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		
J811.1	Valves DN 65mm all flanged sluice valve	nr	1		
J811.2	Ditto but 80mm	nr	11		
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				

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 sorround, 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		
K732.1	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 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	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks Thrust blocks for tees, end caps 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	8		

em 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	88		
	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		

Bill No. 2.4	NAIROBI CENTRAL BUSINESS DISTRICT
DIII NO. 2.4	NAIRUDI CENTRAL BUSINESS DISTRICT

Hom No	Description	l lmi4	Ouentite :	Data (Vah)	Amount (Kal-)
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.				
	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.				
	of the distincting 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		
А3	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	0	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. 				
			<u> </u>		
l711.1	OD 110mm HDPE	m_	295		
l711.2	OD 160mm HDPE	m	150		
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	Page Total Carried Forward to Next Page				

Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
l711.3	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		
J341.5	Ditto but 300/300mm	nr	2		
J342	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				
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				
			<u> </u>		
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 V	/ater Lines: 43D-48AH, 48AG-43J, 43G-48AJ along Tom Mboya St., Accra Rd, V	oi Rd, Mfa	ngano Ln and	d 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		2		
3001.5		nr			
	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 sorround, 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.	14		
	Marker Posts Supply and fix marker posts with required labelling as shown on standard				
K82	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				
	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 0.1m ³		<u> </u>		
L711	Nominal Bore: n.e 200mm	nr	6		
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Bill No. 2.4	NAIROBI CENTRAL BUSINESS DISTRICT				
Proposed '	Water Lines: 43D-48AH, 48AG-43J, 43G-48AJ along Tom Mboya St., Accra Rd, V	oi Rd, Mfar	ngano Ln and	l 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 1m ³				
L742	Nominal Bore: n.e 300mm	nr	1		
Х	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 Total Carried Forward to Next Page

Azeo.1 OD A3 Met A35.2 Allor be in A35.2.1 i) CLA Sup Store Sup Store Rep	r Lines: 49Q-49W, 49W-50H, 49W-50H along River Rd and Landhies Rd escription DTE: e works entail rehabilitation of existing pipelines. The rehabilitation belines will be laid as much as possible in same position as existing beline. e pipeline wayleaves have existing active services both on the surface d buried including electricity lines, water pipelines, sewers, fiber optic bles, etc.). There is limited working space for mechanical excavation uipment and stock piling of excavated material along the pipeline. e Contractor's rates should allow for any measures necessary to deal with a terrain, provision of access to the work sites, mitigation against erruption of existing water supply. The Contractors rates shall be deemed include all the above. ASS A - GENERAL ITEMS sting of the Works beline pressure testing and commissioning, including provision of all the required uipment, materials and works necessary for testing. D 160mm HDPE sinfection of pipeline; flushing with clear water, filling with water containing 0.05g/licium Hypochlorite, left for 24 hours, including all the required equipment, iterials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. D 160mm HDPE ethod Related Charges bow for method related charges the tenderer feels may be required. These should indicated below with pricing for each item	m	Quantity 1.345	Rate (Ksh)	Amount (Ks
A260.1 OD Disi Calc material care A260.2 OD A3 Met A35.2 Allo be in A35.2.1 i) CLA SUF Sup stor exc: side den	The contractor's rates should allow for any measures necessary to deal with a terrain, provision of existing water supply. The Contractors rates shall be deemed including and commissioning, including provision of all the required including works necessary for testing. ASS A - GENERAL ITEMS Setline pressure testing and commissioning, including provision of all the required equipment, materials and works necessary for testing. Define the Works he	m	1,345	Rate (Ksh)	Amount (Ks
A260.1 OD A3 Met A35.2 Allor be in A35.2.1 i) CLA Sup Sup Store Sup Store Rep	e works entail rehabilitation of existing pipelines. The rehabilitation belines will be laid as much as possible in same position as existing beline. e pipeline wayleaves have existing active services both on the surface d buried including electricity lines, water pipelines, sewers, fiber optic bles, etc.). There is limited working space for mechanical excavation uipment and stock piling of excavated material along the pipeline. e Contractor's rates should allow for any measures necessary to deal with e terrain, provision of access to the work sites, mitigation against erruption of existing water supply. The Contractors rates shall be deemed include all the above. ASS A - GENERAL ITEMS sting of the Works beline pressure testing and commissioning, including provision of all the required uipment, materials and works necessary for testing. D 160mm HDPE sinfection of pipeline; flushing with clear water, filling with water containing 0.05g/licium Hypochlorite, left for 24 hours, including all the required equipment, sterials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. D 160mm HDPE ethod Related Charges ow for method related charges the tenderer feels may be required. These should	m			
A260.1 OD Dissic Calcord mate of redisir A260.2 OD A3 Met A35.2 Alloo be in A35.2.1 i) CLA SUP Supp stor exc: side den Rep	beline pressure testing and commissioning, including provision of all the required uipment, materials and works necessary for testing. D 160mm HDPE Sinfection of pipeline; flushing with clear water, filling with water containing 0.05g/licium Hypochlorite, left for 24 hours, including all the required equipment, sterials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. D 160mm HDPE Sthod Related Charges Dow for method related charges the tenderer feels may be required. These should	m			
A260.1 OD Dissic Calcord mate of redisir A260.2 OD A3 Met A35.2 Alloo be in A35.2.1 i) CLA SUP Supp stor exc: side den Rep	beline pressure testing and commissioning, including provision of all the required uipment, materials and works necessary for testing. D 160mm HDPE Sinfection of pipeline; flushing with clear water, filling with water containing 0.05g/licium Hypochlorite, left for 24 hours, including all the required equipment, sterials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. D 160mm HDPE Sthod Related Charges Dow for method related charges the tenderer feels may be required. These should	m			
A260.1 OD Disin Calc mate of redisir A260.2 OD A3 Met A35.2 Alloo be in A35.2.1 i) CLA SUP Sup stor exc: side den	peline pressure testing and commissioning, including provision of all the required uipment, materials and works necessary for testing. D 160mm HDPE Sinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l lcium Hypochlorite, left for 24 hours, including all the required equipment, atterials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. D 160mm HDPE Sthod Related Charges Dow for method related charges the tenderer feels may be required. These should	m			
A260.1 OD Disin Calcomate of red disir A260.2 OD A3 Met A35.2 Alloo be in A35.2.1 i) CLA SUF Sup store exc. side den Rep	D 160mm HDPE sinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l lcium Hypochlorite, left for 24 hours, including all the required equipment, sterials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. D 160mm HDPE Sthod Related Charges ow for method related charges the tenderer feels may be required. These should	m			
A260.2 OD A3 Met A35.2 Alloo be in A35.2.1 i) CLA SUP Sup stor exc. side den	sinfection of pipeline; flushing with clear water, filling with water containing 0.05g/l lcium Hypochlorite, left for 24 hours, including all the required equipment, tetrials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. 0.160mm HDPE ethod Related Charges ow for method related charges the tenderer feels may be required. These should	m			
Calc mate of red disir A260.2 OD A3 Met A35.2 Allow be in a surface of the control of the con	lcium Hypochlorite, left for 24 hours, including all the required equipment, sterials, chemicals and water. Rate includes laboratory testing for measurement residual chlorine, flushing with clean water and the safe disposal of the infecting water to the Engineer's approval. 2.160mm HDPE Sethod Related Charges Down for method related charges the tenderer feels may be required. These should	m	1,345		
A35.2 Alloo be ii A35.2.1 ii CLA SUF Sup stor exc: side den Rep	ethod Related Charges ow for method related charges the tenderer feels may be required. These should		1,345		
A35.2 Allot be in A35.2.1 i) CLA SUF Sup stor exc: side den	ow for method related charges the tenderer feels may be required. These should				
A35.2 Allot be in A35.2.1 i) CLA SUF Sup stor exc: side den	ow for method related charges the tenderer feels may be required. These should				
be ii A35.2.1 i) CLA SUF Sup stor exc: side den Rep					L
CLA SUF Sup stor exc: side den					
SUF Sup stor exc: side den		Item			
SUF Sup stor exc: side den	ASS I: PIPEWORK - PIPES				
stor exca side den Rep	IPPLY AND LAYING OF PIPELINES				
	pply, transport to site and store in secure place. Transport from site ore, lay and joint pipes by 'butt fusion' welding in trench; include for cavation, preparation of surfaces, disposal of excavated material, shoring les of excavation trenches, backfilling and final reinstatement. High nsity polyethylene pipes (HDPE) PE 100 - PN 16				
uiai	place existing water mains by pipe cracking or bursting method to ameters indicated.				
- Su - Re - Ex den surf exc: exc: - Dis Fitti	e rates entered against the items in this section shall include costs for supply, transportation, storage, security, insurance, seplacement of existing pipes, welding pipes using 'butt fusion', xcavation for launch/ retrieval/ access pits in all material including molition of chamber/structures on existing alignment, preparation of rfaces, disposal of excavated material, shoring, support, keeping cavation free from water or other flows, etc. backfilling with approved cavated material in the launch/retrieval pits. Disposal of excavated pipes and fittings to tips approved by the engineer. tings in good condition to be handed over to Client as per engineer's				
1711 OD	sessment.				

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			1				
	DN 65/50mm stepped coupling	nr					
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		1				
J681.6	Ditto but 75mm	nr	9				
0.1001	Ditto Dit (3)IIIII	nr	<u> </u>				

Bill No. 2.5	NAIROBI CENTRAL	BUSINESS DISTRICT

em 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 sorround, e.t.c				
	Manholes				
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.	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				
	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 0.1m ³				
1.744					
L711	Nominal Bore: n.e 200mm	nr	9		
X	Miscellaneous Works Temporary water supply				
V6 1					
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		

tem No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksl
	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 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	0	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.				
1721	OD 250mm	m	980		
1731	OD 315mm	m	650		

Item No	Description		Quantity	Rate (Ksh)	Amount (Ksh)
item NO	Description	Unit	Quantity	Rate (RSII)	Amount (KSII)
	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	<u></u>		
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		
1054.4	Adaptors DN 90mm floors adaptor				
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		

Item No	Description		Quantity	Rate (Ksh)	Amount (Ksh)
		Unit		()	
	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			
J623.1	Ditto but 315 x 75mm		4		
J623.2	Ditto but 315 x 110mm	nr	2		
J623.3	Ditto but 315 x 160mm	nr	3		
		nr			
	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				

tem 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			
	UltraSonic water meter				
J902	DN 300mm flanged water meters		1		
J322.6	DN 300mm flanged water meters DN 300mm flanged Y-type strainers	nr	1		
J322.0		nr			
	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 sorround, 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		

Bill No. 2.6	NAIROBI CENTRAL BUSINESS DISTRICT				
Proposed V	later Lines: 56A-49P along Haille Selassie Avenue and Racecourse Rd		ı	I	T
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				
	Thrust blocks for tees, end caps 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	18		
	Volume:- 0.1 - 0.2m³				
L721	To nominal bore 200mm	nr	3		
	Volume:- 0.2 - 0.5m ³				
L732	To nominal bore 250mm	nr	5		
	Volume:- 0.5 - 1m ³				
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.	ltem	LS		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET			_	

tem 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		
А3	Math ad Dalata d Channa				
A35.2	Method Related Charges Allow for method related charges the tenderer feels may be required. These should				
A35.2.1	be indicated below with pricing for each item				
A35.2.1		Item	PS		
	CLASS I: PIPEWORK - PIPES SUPPLY AND LAYING OF PIPELINES				
	SOFFEI AND EATING OF FIFELINES				
	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.				
	<u></u>				
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.				
	3				

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		
0025.5	Straight Specials				
J681.1	OD 63mm plain ended pipe, 1.2m long		1		
J681.1		nr	1		
	OD 63mm Stub End with flange	nr			
J681.3	Ditto but 75mm	nr	5		
J681.4	OD 75mm plain ended pipe, 1.2m long, cut to suit	nr	6		

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 sorround, 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			
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 500mm	m	93			
K742.2	Ditto - but concrete and concrete block paved footpaths	m	40			
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Bill No. 2.7	NAIROBI CENTRAL BUSINESS DISTRICT						
Proposed Water Lines: 47F-42E along Kenyatta Avenue							
tem 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						
	Thrust blocks for tees, end caps 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 200mm	nr	10				
	Volume:- 0.1 - 0.2m ³						
L721	To nominal bore 200mm	nr	2				
	Volume:- 0.5 - 1.0m ³						
L742	To nominal bore 300mm	nr	1				
	Volume:- 1.0 - 2.0m ³						
L753	To nominal bore 400mm	nr	3				
	Volume:- 2.0 - 4.0m ³						
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						

	NAIROBI CENTRAL BUSINESS DISTRICT				
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	IOD 160mm HDPE	m	1,250		
	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	1,250		
А3	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.				
l711	OD 160mm	m	1,250		
	Page Total Carried Forward to Next Page				

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			
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		
JJL 1.7					

	NAIROBI CENTRAL BUSINESS DISTRICT				
Proposed W	/ater 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		
			1		
J811.4	Ditto but 200mm	nr			
	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 sorround, e.t.c				
V450	Manholes Chamber internal dimensions 1200mm v 1000mm, death p. 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				
K152	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				
	l .			i	1

Bill No. 2.8 Proposed W	NAIROBI CENTRAL BUSINESS DISTRICT Vater Line 42M-49P along River Road				
tem 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	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO				
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	Thrust blocks for tees, end caps 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				
1744					
L711	To nominal bore 200mm	nr	19		
	Volume:- 0.2 - 0.5m ³				
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	
	2.00.00	
	BILL No. 2.8	

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	5,500		
A260.2	OD160mm HDPE	m	3,310		
A260.3	OD200mm HDPE	m	3,540		
A260.4	OD250mm HDPE	m	170		
	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	OD 110mm HDPE	m	5,500		
A260.6	OD 160mm HDPE	m	3,310		
A260.7	OD 200mm HDPE	m	3,540		
A260.8	OD 250mm HDPE	m	170		
А3	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	j)	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				
	Page Total Carried Forward to Next Page				

Bill No. 3.1 Central Industrial Area

Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	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.				
l711.1	OD 110mm HDPE	m	5,500		
l711.2	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				
	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 All Flanged Tee	nr	11		
J321.2	DN 150 x 50mm Saddle Clamp	nr	2		
J321.4	DN 150 x 150mm All Flanged Tee	nr	11		
J321.3	DN 200 x 200mm All Flanged Tee	nr	6		
J322.1	Ditto but 250 x 250mm	nr	11		
	Tapers				
J331.1	DN200 x 150mm All Flanged Reducer	nr	2		
J331.2	DN400 x 250mm All Flanged Reducer	nr	11		
	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

tem 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	11		
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		
3301.3	High density polyethylene pipes (HDPE) PE 100				
	HDPE Bends				
1611.1					
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		
		nr	1		
J612.2	Ditto but 30°		'		
	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	77		
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	11		
J623.1	Ditto but 250 x 75mm	nr	1		
J623.2	Ditto but 400 x 160mm Page Total Carried Forward to Next Page	nr	2		

Bill No. 3.1 Central 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		
	Ditto but 110mm		11		
J681.4		nr			
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	66		
J682.3	OD250mm End Cap	nr	11		
	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 sorround, e.t.c				
K152.1	Manholes 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		

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		
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	250		
K731.2	Ditto' - but Concrete block paved road	m	105		
K731.3	Ditto' - but murram paved road	m	350		
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	247		
K741.2	Ditto - but concrete and concrete block paved footpaths	m	165		
K741.3	Ditto' - but unpaved footpaths	m	176		
L L7	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	Thrust blocks for tees, end caps 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	37		
	Volume:- 0.2 - 0.5m ³				
L732.1	To nominal bore 200 - 300mm	nr	14		
L733.1	To nominal bore 300 - 600mm	nr	11		
х	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				1

Proposed W	/ater Lines:75T-60E along Lusaka Road				
tem 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 CENTRAL ITEMS				
	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		600		
A260.2	OD 250mm HDPE		2,210		
		m	2,210		
A3	Method Related Charges				
	be indicated below with pricing for each item				
A35.2.1	j)	Item	PS		
	CLASS D: DEMOLITION AND SITE CLEARANCE				
D11	General site clearance along the pipeline alignment		0.17		
	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		
	Removal of existing pipeline and carting away of removed existing pipe and fittings				
D61	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				
l712	OD160mm, depth not exceeding 1.5m	m	480		
I713	OD160mm, depth not exceeding 2.0m	m	120		
	OD250mm, depth not exceeding 1.5m	m	1,768		
J714		***	.,,,,		l
1714 1715	OD250mm, depth not exceeding 2.0m	m	442		

Bill No. 3.2 Central Industrial Area						
Proposed V	/ater Lines:75T-60E along Lusaka 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					
J322.1	DN 250 x 65mm Saddle Clamp	nr	1			
J322.2	DN 250 x 100mm All Flanged Tee	nr	1			
J322.3	DN 250 x 200mm All Flanged Tee	nr	1			
J322.4	DN 250 x 250mm All Flanged Tee	nr	1			
J322.5	DN 300 x 200mm All Flanged Cross Tee	nr	1			
	Tapers					
J331.1	DN 200 x 150mm All Flanged Reducer	nr	1			
J332.1	Ditto but 300 x 250mm	nr	1			
	Double Collars (Couplings/Stepped couplings)					
J341.1	DN 100mm Straight Coupling	nr	1			
J341.2	DN 150/150mm Stepped Coupling	<u>nr</u>	1			
J341.3	DN 200mm Straight Coupling	nr	2			
J342.1	DN 250/250mm Stepped Coupling	nr	1			
J342.2	DN 250mm Straight Coupling	<u>nr</u>	22			
J342.3	Ditto but 300mm	nr	1			
	Adaptors					
J351.1	DN 65mm flange adaptor	nr	1			
J351.2	Ditto but 100mm	nr	1			
J351.3	Ditto but 150mm	nr	2			
	Straight Specials					
J381.1	DN 100mm ferrous flanged spigot pipe, 1.2m long	nr	1			
J381.2	Ditto but 150mm	nr	1			
J381.3	Ditto but 200mm	nr	2			
J382.1	Ditto but 250mm	nr	8			
J382.2	Ditto but 300mm	nr	1			
	B. T. I. D. J. I. T. I. W. B.					
	Page Total Carried Forward to Next Page					

Proposed Water Lines:75T-60E along Lusaka Road						
em No	Description	Unit	Quantity	Rate (Ksh)	Amount (K	
	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		2			
		nr				
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 sorround, 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			

m No	Description	Unit	Quantity	Rate (Ksh)	Amount (K
	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	<u>Crossings</u>				
	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.				
VC04 4	Dead execute for OD 250mm size		70		
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 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	12		
	Reinstatements				
<731.1	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	413		
<731.2	Ditto' - but Concrete block paved road	m	177		
(731.3	Ditto' - but murram paved road	m	253		
	Reinstatement of footpaths				
(741.1	Breaking up, temporary and permanent reinstatement of tarmac paved footpaths as per details in standard drawings. , pipe bore n.e 300mm	m	964		
(741.2	Ditto - but concrete and concrete block paved footpaths	m	413		
(741.3	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				
_111.1	Excavation in trench for rock class "A"	m ³	483		
111.2	Excavation in trench for rock class "B"	m ³	483		
_111.3	Excavation in trench for rock class "C"	m ³	644		

Bill No. 3.2 Central Industrial Area Proposed Water Lines:75T-60E along Lusaka Road						
Item No	Description 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					
	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	5			
	Volume:- 0.1 - 0.2m ³					
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		<u> </u>			
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

Proposea w								
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					
	Dana Tatal Comind Forward to New Dana							
	Page Total Carried Forward to Next Page							

Bill No. 3.3	Central Industrial Area
Proposed W	ater 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 W	ater 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		1		
J611.2	OD 200mm, 600 Bend	nr	4		
J611.3	Ditto but 30°	nr	1		
			1		
J611.4	Ditto but 90°	nr			
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 W	ater 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 bipework 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				
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				
	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.				
	Dood consider Februaries Dood Opposes				
K631	Road crossing Enterprise Road OD200mm.	m	50		
K82	Marker Posts 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 murram 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 murram 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

tem 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 L7	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION 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	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				

	Central Industrial Area ater Lines: 75W-83C, 83B-83A, 95D-95K, 75S-96P, 83G-76B, 76A-84F, 83H-85K, 8 96A-96G, 96K-105F, 105A-105C, 66A-76P along Shimo La Tewa Rd, Dunga-Muk				K-96T, 95Q-
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 110mm HDPE	m	1,130		
A260.2	OD 160mm HDPE	m	4,490		
A260.3	OD 200mm HDPE	m	3,545		
	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	OD 110mm HDPE	m	1,130		
A260.5	OD 160mm HDPE	m	4,490		
A260.6	OD 200mm HDPE	m	3,545		
А3	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 I: PIPEWORK - PIPES				
	SUPPLY AND LAYING OF PIPELINES				
	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				
I711.1	OD 110mm HDPE	m	1,130		
l711.2	OD 160mm HDPE	m	4,490		
	Page Total Carried Forward to Next Page				

Sum Brought Forward From Previous Page	I711.3 OD 200mm HDPE	Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
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 et as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, but fusion welding, boltine, 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 1 J321.2 DN 200 x 200mm All Flanged Tee nr 5 5 J331.1 DN 200 x 200mm Cross Tee nr 1 1 J331.2 DN 200 x 200mm Cross Tee nr 1 1 J331.1 DN 200 x 200mm Double Flanged Reducer nr 1 1 J331.2 DN 200 x 100mm Double Flanged Reducer nr 1 1 J331.2 DN 200 x 100mm Double Flanged Reducer nr 2 2 Double Collars (Couplings/Stepped couplings) J341.1 DN 100mm straight coupling nr 2 2 Double Collars (Couplings/Stepped couplings) J341.2 DN 100/100mm stepped coupling nr 7 9 J341.3 DN 100 to to to 100/150mm nr 7 9 J341.4 Ditto but 100/150mm nr 7 9 J341.5 DN 150mm straight coupling nr 7 78 J341.7 DN 100 momentarially coupling nr 7 79 J341.7 DN 100 momentarially coupling nr 7 6 1 J341.7 DN 100 momentarially coupling nr 7 79 J341.7 DN 100 momentarially coupling nr 7 79 J341.7 DN 100 momentarially coupling nr 7 6 1 J351.1 DN 100 momentarially coupling nr 7 6 1	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, boits, muts, rubber ring, gaskets et as applicable all to PN 16. Transport from site store, lay, rix and joint fittings include for all fitting accessories such as gaskets, but 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 200mm 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 200mm Double Flanged Reducer nr 1 J331.2 Ditto but 200 x 150mm nr 2 Double Collars (Couplings/Stepped couplings) J341.1 DN 100 mm straight coupling nr 7 Double Collars (Couplings/Stepped couplings) J341.2 Ditto but 150/150mm nr 7 J341.5 DN 150mm straight coupling nr 7 J341.6 Ditto but 150/150mm nr 7 J341.7 Ditto but 150/150mm nr 7 J341.8 DN 50mm straight coupling nr 7 J341.9 Ditto but 200200mm nr 79 J341.1 DN 50mm straight coupling nr 78 J341.2 DN 50mm straight coupling nr 78 J341.3 Ditto but 200200mm nr 78 J341.7 Ditto but 200700mm nr 79 J341.7 Ditto but 200700mm nr 79 J341.7 Ditto but 200700mm nr 76 J341.7 Ditto but 200700mm nr 76 J341.7 Ditto but 300mm straight coupling nr 6 J351.1 DN 65mm flange adaptor nr 6 J351.1 D		Sum Brought Forward From Previous Page				
SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets et 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, botting, 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 1 J331.1 DN 200 x 200mm Cross Tee nr 1 J331.2 DN 800 x 100mm All Flanged Tee nr 1 J331.2 DN 800 x 100mm Blanged Reducer nr 1 J331.1 DN 200 x 200mm Double Flanged Reducer nr 1 J331.2 DN 200 x 100mm Double Flanged Reducer nr 2 J331.1 DN 200 x 100mm Double Flanged Reducer nr 2 J331.2 DN 100 I 200 x 150mm nr 2 Double Collars (Couplings/Stepped couplings) J341.1 DN 100mm straight coupling nr 2 J341.2 DN 100 100mm straight coupling nr 7 J341.3 DN 100 but 100/150mm nr 7 J341.4 Ditto but 100/150mm nr 7 J341.5 DN 150mm straight coupling nr 7 J341.6 DN 150mm straight coupling nr 7 J341.7 DN 100 but 2000mm nr 78 J341.8 DN 100 mr 3 fraight coupling nr 7 J341.9 DN 100 mr 3 fraight coupling nr 7 J341.1 DN 100 mr 3 fraight coupling nr 7 J341.2 DN 100 but 2000mm nr 78 J341.3 DN 100 but 2000mm nr 78 J341.4 DN 100 mr 3 fraight coupling nr 7 J341.5 DN 150mm straight coupling nr 7 J341.6 DN 100 mr 3 fraight coupling nr 7 J341.7 DN 100 mr 3 fraight coupling nr 7 J341.8 DN 100 mr 3 fraight coupling nr 7 J341.7 DN 100 mr 3 fraight coupling nr 7 J341.8 DN 100 mr 3 fraight coupling nr 7 J341.7 DN 100 mr 3 fraight coupling nr 7 J341.8 DN 100 mr 3 fraight coupling nr 7 J341.7 DN 100 mr 3 fraight coupling nr 7 J341.8 DN 100 mr 3 fraight coupling nr 7 J341.9 DN 100 mr 3 fraight coupling nr 7 J341.1 DN 100 mr 3 fraight	SUPPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bolts, nuts, rubber ring, gaskets et as applicable all to PN 16. Transport from site store, lay, it and joint fittings include for all fitting accessories such as gaskets, but 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 2 J321.3 DN 200 x 200mm All Flanged Tee nr 2 J331.1 DN 200 x 200mm Cross Tee nr 1 J331.2 DN 200 x 200mm Cross Tee nr 1 J331.1 DN 200 x 200mm Double Flanged Reducer nr 1 J331.2 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 2 J341.2 DN 100/100mm stepped coupling nr 2 J341.3 DN 100 to the 150/150mm nr 7 J341.4 Ditto but 150/150mm nr 7 J341.5 DN 150mm straight coupling nr 78 J341.6 Ditto but 200200mm nr 78 J341.7 DN 150mm straight coupling nr 79 J341.7 DN 150mm straight coupling nr 79 J341.7 DN 150mm straight coupling nr 78 J341.7 DN 150mm straight coupling nr 79 J341.7 DN 150mm straight coupli	l711.3	OD 200mm HDPE	m	3,545		
Supply, transport to site and store in secure place, include supply of jointing materials, botts, unts, 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, but fusion welding, botting, 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 In 1 Junctions and Branches In 2 Junctions and Branches In 2 Junctions and Branches In 2 Junctions and Branches In 1	Supply, transport to site and store in secure place, include supply of jointing materials, botts, unts, rubber ring, gaskets et as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, butf 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 Jactions and Branches Jactions and Branches Jactions and Branches Jon 200 x 100mm Ferrous All Flanged Level Invert Tee nr 1 nr 5 Jactions and Branches Jactions an		CLASS J - PIPEWORK - FITTINGS AND VALVES				
Junctions and Branches Jack Jac	Junctions and Branches Ja21.1 DN 200 x 100mm Ferrous All Flanged Level Invert Tee nr 1 1 1 1 1 1 1 1 1		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				
J321.1 DN 200 x 100mm Ferrous All Flanged Level Invert Tee nr 1	J321.1 DN 200 x 100mm Ferrous All Flanged Level Invert Tee nr 1		Epoxy FBE coated and lined steel pipe fittings.				
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	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		Junctions and Branches				
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	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	J321.1	DN 200 x 100mm Ferrous All Flanged Level Invert Tee	nr	1		
J331.1 DN 200 x 200mm Cross Tee nr	J331.1 DN 200 x 200mm Cross Tee nr 1	J321.2	DN 200 x 200mm All Flanged Tee	nr	5		
J331.2 DN 800 x 100mm All Flanged Tee	J331.2 DN 800 x 100mm All Flanged Tee	J321.3	DN 200 x 150mm Cross Tee	nr	2		
Tapers	Tapers	J331.1	DN 200 x 200mm Cross Tee	nr	1		
J331.1 DN 200 x 100mm Double Flanged Reducer nr 1	J331.1 DN 200 x 100mm Double Flanged Reducer nr 1	J331.2	DN 800 x 100mm All Flanged Tee	nr	1		
J331.1 DN 200 x 100mm Double Flanged Reducer nr 1	J331.1 DN 200 x 100mm Double Flanged Reducer nr 1		Tapers				
Double Collars (Couplings/Stepped couplings)	Double Collars (Couplings/Stepped couplings)	J331.1	DN 200 x 100mm Double Flanged Reducer	nr	1		
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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J331.2	Ditto but 200 x 150mm	nr	2		
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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6		Double Collars (Couplings/Stepped couplings)				
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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.1		nr	11		
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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.2	DN 100/100mm stepped coupling	nr	8		
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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	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 nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.3	Ditto but 100/150mm	nr	1		
J341.6 Ditto but 200mm nr 78 J341.7 Ditto but 200/200mm nr 8 J344 DN 800mm straight coupling nr 2 Adaptors nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.6 Ditto but 200mm nr 78 J341.7 Ditto but 200/200mm nr 8 J344 DN 800mm straight coupling nr 2 Adaptors nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.4	Ditto but 150/150mm	nr	7		
J341.7 Ditto but 200/200mm nr 8 J344 DN 800mm straight coupling nr 2 Adaptors nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.7 Ditto but 200/200mm nr 8 J344 DN 800mm straight coupling nr 2 Adaptors nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.5	DN 150mm straight coupling	nr	79		
J344 DN 800mm straight coupling nr 2 Adaptors J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J344 DN 800mm straight coupling nr 2 Adaptors J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.6	Ditto but 200mm	nr	78		
Adaptors nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	Adaptors nr 1 J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J341.7	Ditto but 200/200mm	nr	8		
J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J344	DN 800mm straight coupling	nr	2		
J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6	J351.1 DN 65mm flange adaptor nr 1 J351.3 Ditto but 80mm nr 6						
J351.3 Ditto but 80mm nr 6	J351.3 Ditto but 80mm nr 6	J351.1	DN 65mm flange adaptor	nr	1		
					6		
Page Total Carried Forward to Next Page			1		1		

Central Industrial Area Bill No. 3.4 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-96S, 95C-96S, 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 Quantity Rate (Ksh) Amount (Ksh) Sum Brought Forward From Previous Page Ditto but 150mm J351.5 9 nr Ditto but 200mm J351.6 nr 1 Straight Specials J381.2 DN 100mm flanged spigot pipe, 1.2m long nr 3 J381.3 Ditto but 150mm 9 nr J381.4 Ditto but 200mm 27 nr J384.1 Ditto but 800mm 2 High density polyethylene pipes (HDPE) PE 100 **HDPE Bends** J611.1 OD 75mm, 90° Bend 22 nr J611.2 OD 160mm, 30° Bend nr 1 J611.3 Ditto but 45° nr 1 J611.4 Ditto but 60° nr J611.5 OD 200mm, 30° Bend 1 nr J611.6 3 Ditto but 45° 5 J611.7 Ditto but 90° nr Junctions and Branches J621.1 OD 110 x 75mm Plain Ended Tee 4 nr J621.2 OD 110 x 110mm Plain Ended 45° Tee nr 1 J621.3 OD 110 x 110mm Plain Ended Tee 3 nr J621.4 Ditto but 160 x 75mm 24 nr J621.5 Ditto but 160 x 110mm nr J621.6 Ditto but 160 x 160mm nr 4 J621.7 OD 200 x 75mm Plain Ended Tee 8 nr J621.8 Ditto but 200 x 110mm 8 nr 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 2 nr OD 200 x 200mm Plain Ended 45° Tee J621.12 nr J621.13 OD 250 x 75mm Plain Ended Tee 1 HDPE Tapers J631.1 OD 160 x 110 HDPE Reducer 1 nr Page Total Carried Forward to Next Page

Central Industrial Area Bill No. 3.4 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-96S, 95C-96S, 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 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 16 nr J681.3 OD 110mm End Cap nr 1 J681.4 OD 160mm Stub End with flange 9 nr J681.5 OD 75mm plain ended pipe, 1.2m long, cut to suit 94 nr J681.6 OD 110mm plain ended pipe, 1.2m long, cut to suit nr J681.7 OD 160mm End Cap nr 12 J681.8 OD 200mm Stub End with flange 2 nr J681.9 OD 200mm plain ended pipe, 1.2m long, cut to suit 1 nr J681.10 OD 200mm End Cap 8 nr Valves DN 65mm all flanged sluice valve J811.1 1 nr J811.3 Ditto but 80mm nr 6 J811.4 Ditto but 100mm 19 nr J811.5 Ditto but 150mm 15 nr J811.6 Ditto but 200mm 5 Hydrants J901 DN80mm fire hydrant 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 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 1 nr. K152.5 Chamber internal dimensions 1800mm x 1000mm, depth n.e. 2m 3 nr. Page Total Carried Forward to Next Page

em 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.	ltem	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		1		
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		
		_	1		

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

	dabout), Lanet Rd and Hola Rd				
em 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	4,310		
	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	4,310		
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	j)	Item	PS		
	CLASS D: DEMOLITION AND SITE CLEARANCE				
D11	General site clearance along the pipeline alignment	ha	240		
	Tree Cutting (Provisional) Cut down trees, grub up roots and cart away to tips. Girth shall be measured 1.0m above ground level.				
D21	Girth: 0.5 m - 1.0 m	nr	0		
D22	Girth: 1.0 m - 2 m	nr	0		
	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. DN150mm, depth not exceeding 1.5m	m	4,310		
	Page Total Carried Forward to Next Page				

Proposed Water Lines: 600-67C, 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

em 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: 600-67C, 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

tem 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		
3023.1	Tapers				
J631.1	OD160 x 110mm ferrous all flanged reducer		1		
		nr			
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				

Proposed Water Lines: 600-67C, 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				
	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.	40		
	Marker Posts				
K820.1	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.	ltem	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.	ltem	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		
	Reinstatement of footpaths				
K731	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				
	EXTING 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 mimimum 75mm wide as required in specifications.	m	4,310		
	Page Total Carried Forward to Next Page				

Proposed Water Lines: 600-67C, 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

Sum Brought Forward From Previous Page X Miscellaneous Works Temporary water aupply X8.1 Maharian temporary uniterrupted 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. LS LS TOTAL CARRIED FORWARD TO COLLECTION SHEET	Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
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. LS Item LS		Sum Brought Forward From Previous Page				
The engineer.	<u> </u>	Miscellaneous Works Temporary water supply				
TOTAL CARRIED FORWARD TO COLLECTION SHEET	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		
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	Bill 3 COLLECTION SHEET	
	CENTRAL INDUSTRIAL AREA	
SECTION	DESCRIPTION	TOTAL AMOUNT
		(Kshs.)
	BILL No. 3.1	
	BILL No. 3.2	
	BILL No. 3.3	
	BILL No. 3.4	
	BILL No. 3.5	
OTAL EXC	LUSIVE OF VAT CARRIED TO SUMMARY SHEET	

Bill No. 4.1	Eastleigh (PROVISIONAL)				
Proposed V	/ater 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		
А3	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	Ď.	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				
1712	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				
	5				

Number N	Proposed W	ater Line 19A-27F along Juja Rd				
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, boils, nuts, rubber ring, gasletis et as applicable all to PN 16. Accessories such as gaslesis, but flusion welding, boiling, etc., plus exexuation, preparation of surfaces, disposal of excavated material, shoring sides of excavation trenches, backfilling and final reinstatement. Epoxy FBE coased and lined steel pipe fittings Junctions and Branches Junctions and Branches JUN 200 x 80mm Saddie Clamps JUN 200 x 80mm Ferrous All Flanged Tee ON 200 x 80mm Ferrous All Flanged Tee or 1 JUN 200 x 80mm Ferrous All Flanged Tee or 2 JUN 200 x 80mm Ferrous All Flanged Tee or 1 JUN 200 x 80mm Ferrous All Flanged Tee or 1 JUN 200 x 80mm Ferrous All Flanged Tee or 1 JUN 200 x 80mm Ferrous All Flanged Tee or 1 JUN 200 x 80mm Ferrous All Flanged Tee or 1 JUN 200 x 80mm Ferrous All Flanged Tee or 1 JUN 200 x 80mm Ferrous Straight coupling or 1 JUN 200 x 80mm Ferrous Straight coupling or 1 JUN 200 x 80mm Ferrous Straight coupling or 1 JUN 200 x 80mm Ferrous Straight coupling or 2 JUN 200 x 80mm Ferrous Straight coupling or 2 JUN 200 x 80mm Ferrous Straight coupling or 2 JUN 200 x 80mm Ferrous Straight coupling or 2 JUN 200 x 80mm Ferrous Straight coupling or 2 JUN 200 x 80mm Ferrous Fraight scoupling or 2 JUN 200 x 80mm Ferrous Fraight scoupling or 2 JUN 200 x 80mm Ferrous Fraight scoupling or 2 JUN 200 x 80mm Ferrous Fraight scoupling or 3 JUN 200 x 80mm Ferrous Fraight special place 1.2m long or 3 JUN 200 x 80mm Ferrous Fraight special place 1.2m long or 3 JUN 200 x 80mm Ferrous Fraight special place 1.2m long or 6 High density polyethylene place (HDPE) PE 100 HOPE Bends JUN 200 x 75mm Plain Ended Tee or 6 JUN 200 x 75mm Plain Ended Tee or 7 JUN 200 x 80mm Ferrous Fraight Special Tee or 7 JUN 200 x 80mm Ferrous Fraight Special Tee or 8 JUN 200 x 80mm Ferrous Fraight Special Tee or 8 JUN 200 x 80mm	Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
SupPLY AND INSTALLATION OF FITTINGS Supply, transport to site and store in secure place, include supply of jointing materials, bots, nuts, rubber ring, asskets et as applicable all to PN 16. Transport from site store, lay, fix and joint fittings include for all fitting accessories such as gaskets, but fusion wilding, botting, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation frenches, backfilling and final reinstatement. Epoxy FBE coated and lined steel pipe fittings Junctions and Branches Junctions and Branches DN 200 x 50mm Ferrous All Flanged Tee nr 1 J321.1 DN 200 x 50mm Ferrous All Flanged Tee nr 1 J321.3 DN 200 x 200mm Ferrous All Flanged Tee nr 2 Double Collars Double Collars J341.1 DN 100mm ferrous straight coupling rr 1 J341.2 DN 150m ferrous steeped coupling rr 1 J341.3 DN 200mm ferrous steeped coupling rr 1 J341.4 DN 200mm ferrous straight coupling rr 1 J341.5 DN 200mm ferrous straight coupling rr 2 J341.6 DN 200mm ferrous straight coupling rr 2 J341.7 DN 200mm ferrous straight coupling rr 2 J341.9 DN 500 x 200mm ferrous straight coupling rr 2 J341.1 DN 100 but 500mm ferrous straight coupling rr 2 J341.2 DN 500 x 50mm ferrous straight coupling rr 2 J341.3 Ditto but 500mm rerous straight coupling rr 2 J341.4 DN 200mm ferrous straight coupling rr 2 J341.5 DN 80mm ferrous straight coupling rr 2 J351.1 DN 80mm ferrous straight coupling rr 2 J351.2 DN 500 but 500mm rerous flanged spiped pipe, 1.2m long rr 3 J351.3 DN 200mm ferrous flanged spiped pipe, 1.2m long rr 3 J351.4 DN 200mm ferrous flanged spiped pipe, 1.2m long rr 3 J351.1 DN 200mm ferrous flanged spiped pipe, 1.2m long rr 5 J351.2 DN 200mm ferrous flanged spiped pipe, 1.2m long rr 5 J351.3 DN 200mm ferrous flanged spiped pipe, 1.2m long rr 5 J351.4 DN 200mm ferrous flanged spiped pipe, 1.2m long rr 6 High density pobyethylene pipes (HDPE) PE 100 HDPE Bends J451.2 OD 200mm, 30° Bend rr 7 J451.2 OD 200mm, 30° Bend rr 7 J451.2 OD 200mm, 30° Bend rr 7 J451.2		Sum Brought Forward From Previous Page				
Supply, transport to site and bere in secure place, include supply of jointing materials, bolls, nuts. bother ring, gaskets et as applicable all to N 16. Transport from site store, by, fix and joint fittings include for all fitting accessories such as speaked, but utilison wedding, bothing, etc, plus excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation methos, backfilling and final reinstatement. Epoxy FBE coated and lined steel pipe fittings Junctions and Branches Junctions and Branches Jack DN 200 x 200 x 80mm Ferrous All Flanged Tee nr 1 2 Jack DN 200 x 200mm Ferrous All Flanged Tee nr 2 J321.2 DN 200 x 200mm Ferrous All Flanged Tee nr 3 Double Collars J341.1 DN 100 flooring ferrous straight coupling nr 1 J341.2 DN 150/150mm ferrous straight coupling nr 1 J341.3 DN 150/150mm ferrous straight coupling nr 1 J341.4 DN 200mm ferrous straight coupling nr 2 J341.4 DN 200mm ferrous straight coupling nr 42 J343.3 Ditto but 200200mm nr 7 J341.4 DN 200mm ferrous straight coupling nr 42 J343.0 Ditto but 350mm nr 2 J351.1 DN 80mm ferrous straight coupling nr 4 J351.2 Ditto but 500mm nr 6 Adaptors J351.1 DN 80mm ferrous straight coupling nr 2 J351.2 Ditto but 100mm nr 4 J351.3 Ditto but 100mm nr 6 Straight Specials J381.1 DN 80mm ferrous plain ended pipe, 1.2m long nr 3 J381.2 DN 200mm ferrous plain ended pipe, 1.2m long nr 5 DN 200mm ferrous plain ended pipe, 1.2m long nr 6 High density polyethylene pipes (HDPE) PE 100 HDPE Bends J461.1 DO 200 x 75mm Plain Ended Tee nr 5 J462.1 OD 200 x 75mm Plain Ended Tee nr 5		CLASS J - PIPEWORK - FITTINGS AND VALVES				
Junctions and Branches		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				
Jazz		Epoxy FBE coated and lined steel pipe fittings				
J321.2 DN 200 x 50mm Ferrous All Flanged Tee nr 1		Junctions and Branches				
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 J324 DN 100mm ferrous Straight coupling nr 1 J324 DN 150/150mm ferrous straight coupling nr 1 J324 DN 150/150mm ferrous straight coupling nr 1 J324 DN 150/150mm ferrous straight coupling nr 7 J324 DN 200mm ferrous straight coupling nr 42 J324 DN 200mm ferrous straight coupling nr 42 J324 DN 200mm ferrous straight coupling nr 6 Adaptors Adaptors	J321.1	DN 200 x 80mm Saddle Clamps	nr	2		
Ja21.3 DN 200 x 200mm Ferrous All Flanged Tee nr 2						
J324 DN 600 x 200mm Ferrous All Flanged Tee nr 3	J321.3	DN 200 x 200mm Ferrous All Flanged Tee	nr	2		
Double Collars January J324	DN 600 x 200mm Ferrous All Flanged Tee		3			
J341.1 DN 100mm ferrous straight coupling						
J341.2 DN 150/150mm ferrous stepped coupling nr 1	.1341 1		nr	1		
J341.3 Ditto but 200/200mm nr 7 7 J341.4 DN 200mm ferrous straight coupling nr 42 J343 Ditto but 350mm nr 2 J344 Ditto but 600mm nr 6 Adaptors						
J341.4 DN 200mm ferrous straight coupling nr 42 J343 Ditto but 350mm nr 2 J344 Ditto but 600mm nr 6 Adaptors						
J343 Ditto but 350mm nr 2						
J344 Ditto but 600mm						
Adaptors DN 80mm flange adaptor nr 2 J351.2 Ditto but 100mm nr 4 J351.3 Ditto but 150mm nr 4 J351.4 Ditto but 200mm nr 8 J351.4 Ditto but 200mm nr 6 Straight Specials nr 2 J381.1 DN 80mm ferrous flanged spigot pipe, 1.2m long nr 3 J381.2 DN 200mm ferrous plain ended pipe, 1.2m long nr 3 J381.3 DN 200mm ferrous flanged spigot 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 nr 6 HDPE Bends nr 2 J611.1 OD 75mm, 90° Bend nr 1 Junctions and Branches nr 8 J621.1 OD 200 x 75mm Plain Ended Tee nr 8 J621.2 OD 200 x 110mm Plain Ended Tee nr 5						
J351.1 DN 80mm flange adaptor nr 2	J344			0		
J351.2 Ditto but 100mm nr 4 J351.3 Ditto but 150mm nr 8 J351.4 Ditto but 200mm nr 6 Straight Specials nr 6 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 nr 6 HDPE Bends nr 2 J611.1 OD 75mm, 90° Bend nr 1 Junctions and Branches nr 1 J621.1 OD 200 x 75mm Plain Ended Tee nr 8 J621.2 OD 200 x 110mm Plain Ended Tee nr 5						
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 J384.0 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 J621.1 OD 200 x 75mm Plain Ended Tee nr 8 J621.2 OD 200 x 110mm Plain Ended Tee nr 5						
Ditto but 200mm			nr			
Straight Specials J381.1 DN 80mm ferrous flanged spigot pipe, 1.2m long nr 2 2 3381.2 DN 200mm ferrous all flanged pipe, 1.2m long nr 3 3 3 3 3 3 3 3 3	J351.3	Ditto but 150mm	nr	8		
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 nr 2 HDPE Bends nr 2 J611.1 OD 75mm, 90° Bend nr 1 J01.2 OD 200mm, 30° Bend nr 1 J621.1 OD 200 x 75mm Plain Ended Tee nr 8 J621.2 OD 200 x 110mm Plain Ended Tee nr 5	J351.4	Ditto but 200mm	nr	6		
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 nr 2 J611.1 OD 75mm, 90° Bend nr 2 J611.2 OD 200mm, 30° Bend nr 1 J621.1 OD 200 x 75mm Plain Ended Tee nr 8 J621.2 OD 200 x 110mm Plain Ended Tee nr 5		Straight Specials				
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 nr 2 J611.1 OD 75mm, 90° Bend nr 1 J611.2 OD 200mm, 30° Bend nr 1 Junctions and Branches nr 8 J621.1 OD 200 x 75mm Plain Ended Tee nr 5 J621.2 OD 200 x 110mm Plain Ended Tee nr 5	J381.1	DN 80mm ferrous flanged spigot pipe, 1.2m long	nr	2		
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 nr 2 J611.1 OD 75mm, 90° Bend nr 2 J611.2 OD 200mm, 30° Bend nr 1 Junctions and Branches nr 8 J621.1 OD 200 x 75mm Plain Ended Tee nr 8 J621.2 OD 200 x 110mm Plain Ended Tee nr 5	J381.2	DN 200mm ferrous all flanged pipe, 1.2m long	nr	3		
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	J381.3	DN 200mm ferrous plain ended pipe, 1.2m long	nr	3		
High density polyethylene pipes (HDPE) PE 100 HDPE Bends	J381.4	DN 200mm ferrous flanged spigot pipe, 1.2m long	nr	5		
HDPE Bends	J384	DN 600mm ferrous flanged spigot pipe, 1.2m long	nr	6		
J611.2 OD 200mm, 30° Bend nr 1 Junctions and Branches Image: Control of the						
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	J611.1	OD 75mm, 90° Bend	nr	2		
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			nr	1		
J621.1 OD 200 x 75mm Plain Ended Tee nr 8 J621.2 OD 200 x 110mm Plain Ended Tee nr 5						
J621.2 OD 200 x 110mm Plain Ended Tee nr 5	J621.1		nr	8		
332.10 35 200 X 100/mm Figure 1:000 1:00						
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	Eastleigh (PROVISIONAL) ater 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			
J811.3	Ditto but 100mm	nr	4		
J811.4	Ditto but 150mm		8		
		nr			
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 sorround, 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	<u>nr</u>	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				

	T				
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		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		
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	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				
	Provide, place and compact selected imported granular fill material in bed and				
L531	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		
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Bill No. 4.1	Eastleigh (PROVISIONAL)				
Proposed Water Line 19A-27F along Juja Rd					
em No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	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		
	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 150mm	Kg	16,450		
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

	Street	
Quantity	Rate (Ksh)	Amount (Ks
5,130		
5,130		
PS		
5,130		

	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		3		
	Ditto but 65mm	nr			
J351.2		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 ^o	nr	1		
	Junctions and Branches				
J621.1	OD 200 x 75mm Plain Ended Tee	nr	23		

	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page			(1)	,
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 sorround, 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				

	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Reinstatements				
<731.1	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		
<731.2	Ditto' - but Concrete block paved road	m	75		
	Reinstatement of footpaths				
<731.1	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	286		
<731.2	Ditto' - but Concrete block paved road	m	123		
	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO				
L7	LAYING AND EXCAVATION 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	75		
	Volume:- 0.1 - 0.2m ³				
L721	To nominal bore 200mm	nr	81		
	Volume:- 0.5 - 1m ³				
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		

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)
	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	3,850		
	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 160mm HDPE	m	3,850		
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.				
I711	OD 160mm		2 050		
	OD TOURISH	m	3,850		

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		<u> </u>		
J341.1	DN 65mm straight coupling	nr	2		
	Ditto but 65/65mm		2		
J341.2		nr			
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		
		nr			
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 - 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				

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

Sum Brought Forward From Previous Page	unt (Ksh)
J881.1 Dits but 150mm	
J881.2 Ditto but 160mm nr 2 J881.3 Ditto but 200mm nr 16 J881.4 OD 75mm Stub end with flange nr 16 J881.5 OD 95mm Stub end with flange nr 1 J881.6 OD 110mm Stub end with flange nr 1 J881.7 Ditto but 160mm nr 6 J881.8 OD 160mm End Cap Valves J881.1 DN 85mm End Cap yalves J881.1 DN 85mm all flanged sluice valve J881.2 Ditto but 100mm nr 1 J881.3 Ditto but 100mm nr 1 J881.4 Ditto but 100mm nr 1 J881.5 Ditto but 100mm nr 1 J881.6 Ditto but 100mm nr 3 J881.7 Ditto but 100mm nr 3 J881.8 Ditto but 100mm nr 4 J881.8 Ditto but 100mm nr 5 Krabers Provide all materials and construct concrete chamber bases and precast concrete chambers for valve, tees and but meter chambers as detailed in Standard Dinwings. Rate includes all coes such as exercation, concepts, re-steel but, precast concrete concers slobs, formwork, bediable covers, step livons, companied granular ill Borroura, Act all coes such as exercation, concepts, re-steel but, precast concrete chambers for valve, tees and but meter chambers as detailed in Standard Dinwings. Rate includes all coes such as exercation, concepts, re-steel but, precast concrete concers slobs, formwork, bediable covers, step livons, companied granular ill Borroura, Act all cost such as exercation, concepts, re-steel but, precast concerse chamber with surface box / lockable covers OD200mm, Depth n.e. 2 mas per Drawing No. 6000023-HH-SD-DR-W-003 Marker Poats Real statements 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 deversion signage, controls and safety precaution in his rated, nominal bor end exceeding 300mm.	
J881.3 Deto but 200mm J881.4 OD 75mm Stub end with flange nr 1 J881.5 OD 95mm Stub end with flange nr 1 J881.6 OD 110mm Stub end with flange nr 1 J881.7 Ditto but 160mm J881.8 OD 150mm End Cap Valves J811.1 DN 80mm all flanged sluice valve nr 11 J811.2 Ditto but 100mm nr 6 J811.3 Ditto but 100mm nr 11 J811.3 Ditto but 150mm nr 6 J811.4 Ditto but 100mm nr 11 J811.3 Ditto but 150mm nr 6 J811.4 Ditto but 100mm nr 11 J811.5 Ditto but 100mm nr 12 J811.5 Ditto but 100mm nr 13 J811.6 Ditto but 100mm nr 13 J811.6 Ditto but 150mm nr 6 Hydrants DN80mm fire hydrant CLASS K: 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 loost such as exercation, concrete, re steel bar, precast concrete cover slabs, formwork, lockable covers, step trons, compacted garnular fill sorround, et Manholes Chamber infermal dimensions 900mm x 900mm, depth n.e. 2m Nama per Drawing No. 6000023-HH-SD-DR-W-003 Marker Posts K200 Namaker posts with required labelling as shown on standard drawings Marker Posts K731.1 Resistatements 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 deversion signage, controls and safety precaution in his rated, nominal board permanent reinstatement of Tarmac paved road and reinstate as sper standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisite deversion signage, controls and safety precaution in his rated, nominal board permanent reinstatement of Tarmac paved road and reinstate as per standard drawings, to the satisfaction of the Engineer. Contractor to allow for provision of requisi	
J681.4 OD 75mm Stub end with flange nr 16 J681.5 OD 90mm Stub end with flange nr 1 J681.6 OD 110mm Stub end with flange nr 1 J681.7 Ditto but 160mm nr 6 J681.7 Ditto but 160mm nr 6 J681.8 OD 160mm End Cap nr 1 J881.8 OD 160mm End Cap nr 1 J881.1 DN 80mm all flanged sluice valve nr 11 J881.1 DN 80mm all flanged sluice valve nr 11 J881.2 Ditto but 150mm nr 6 Hydrants J881.2 Ditto but 150mm nr 6 Hydrants J881.3 DN80mm fire hydrant nr 13 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 cuch as excavation, concrete, re-steel bar, precast concrete covers slabs, formwork, lockable covers, step irons, compacted granular fill sorround, e.t.c Manholes K152 Chamber internal dimensions 900mm x 900mm, depth n.e. 2m nr. 3 Narrow concrete chamber with surface box / lockable covers, step irons, compacted granular fill sorround, e.t.c Manholes K2200 Zhamber internal dimensions 900mm x 900mm, depth n.e. 2m nr. 3 Reinstatements Breaking up, temporary and permanent reinstatement of Tarmac paved road and pressure to the provision of neguiste deversion signage, controls and safety precaution in Seriad, normal born of everaged ground and reinstatement of footpaths R731.1 Ditto: but Concrete block paved road R731.2 Ditto: but Concrete block paved road	
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Valves J811.1 DN 80mm all flanged sluice valve	
J811.1 DN 80mm all flanged sluice valve nr 111 J811.2 Ditto but 100mm nr 11 J811.3 Ditto but 150mm nr 6 Hydrants J901 DN80mm fire hydrant nr 13 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-teel bar, precast concrete cover slabs, formwork, lockable covers, step irons, compacted granular fill sorround, e.t.c Manholes K152 Chamber internal dimensions 900mm x 900mm, depth n.e. 2m nr. 3 Narrow concrete chamber with surface box / lockable cover OD200mm, Depth n.e 2m sper Drawing No. 6000023-HH-SD-DR-W-003 Marker Posts K82 Supply and fix marker posts with required labelling as shown on standard drawings nr 34 Reinstatements Reaking up, temporary and permanent reinstatement of Tarmac paved road and Parker posts with required sheeling as shown on standard drawings in the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety procaution in his rated, nominal bore not exceeding 300mm. K731.1 Ditto - but Concrete block paved road Reinstatement of footpaths Breaking up, temporary and permanent reinstatement of Tarmac paved road and Reinstatement of footpaths Breaking up, temporary and permanent reinstatement of Tarmac paved road and Reinstatement of Footpaths Breaking up, temporary and permanent reinstatement of Tarmac paved road and Reinstatement of Footpaths Breaking up, temporary and permanent reinstatement of Tarmac paved road and restrict 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. 146 147 148	
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K731.2 Ditto' - but Concrete block paved road m 63	
Page Total Carried Forward to Next Page	

X6.1

Eastleigh (PROVISIONAL)				
Nater Line 18AC-18AF, 18AN-18AQ, 18AQ-18AF, 18AG-34T, 18AK-34P, 29AB-34U eet, Kirongothi, Kipande Athumani Street Street and Timoroa Street	J, 29AE-29N	along Major	Jackson Muriit	hi Street, Captain
Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
Sum Brought Forward From Previous Page				
CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
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			[
To nominal bore 150mm	nr	25		
Miscellaneous Works			[1
٨	Nater Line 18AC-18AF, 18AN-18AQ, 18AQ-18AF, 18AG-34T, 18AK-34P, 29AB-34L Let, Kirongothi, Kipande Athumani Street Street and Timoroa Street Description Sum Brought Forward From Previous Page CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION 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 To nominal bore 150mm	Nater Line 18AC-18AF, 18AN-18AQ, 18AQ-18AF, 18AG-34T, 18AK-34P, 29AB-34U, 29AE-29N left, Kirongothi, Kipande Athumani Street Street and Timoroa Street Description Unit Sum Brought Forward From Previous Page CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION 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 To nominal bore 150mm nr	Nater Line 18AC-18AF, 18AN-18AQ, 18AQ-18AF, 18AG-34T, 18AK-34P, 29AB-34U, 29AE-29N along Major ret, Kirongothi, Kipande Athumani Street Street and Timoroa Street Description	Nater Line 18AC-18AF, 18AN-18AQ, 18AQ-18AF, 18AG-34T, 18AK-34P, 29AB-34U, 29AE-29N along Major Jackson Muriittet, Kirongothi, Kipande Athumani Street Street and Timoroa Street Description

Item

LS

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.

TOTAL CARRIED FORWARD TO COLLECTION SHEET

Bill No. 4.4	Eastleigh (PROVISIONAL)
Proposed W	/ater Line 17N-45AS, 45BF-46B, 45AS-45G along Muratina Street, Waudo Street and Marimbi 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	IOD 200mm HDPE		3,880		
A200.1		m	3,000		
	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	3,880		
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		
A33.2.1		ilciii			
	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.				
	00.000				
<u>1711</u>	OD 200mm	m	3,880		
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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		

Item No	Description		Quantity	Rate (Ksh)	Amount (Ksh)
item No		Unit	Quantity	Rate (KSII)	Amount (KSn)
	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 sorround, e.t.c				
	Manholes		<u> </u>		

Bill No. 4.4	Eastleigh (PROVISIONAL)	

Proposed Water Line 17N-45AS, 45BF-46B, 45AS-45G along Muratina Street, Waudo Street and Marimbi Street

. Toposed W	ater Line 17N-45AS, 45BF-46B, 45AS-45G along Muratina Street, Waudo Stree	t and Maill	IIDI GILEEL		<u> </u>
Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
K152.2	Chamber internal dimensions 1200mm x 1200mm, 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.	49		
	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	130		
K731.2	Ditto' - but Concrete block paved road	m	55		
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	216		
K731.2	Ditto' - but Concrete block paved road	m	93		
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				
	Volume n.e. o. mi-				
L711	To nominal bore 150mm	nr	19		
	Volume:- 0.1 - 0.2m ³				
L721	To nominal bore 200mm	nr	23		
	Volume:- 0.5 - 1m ³				
L743	To nominal bore 350mm	nr	1		
	W-l 0. 42				
	Volume:- 2 - 4m³				
L763	To nominal bore 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.	ltem	LS		
	TOTAL CARRIED FORWARD TO COLLECTION OUTST				
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

	Eastleigh (PROVISIONAL) /ater 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		
А3	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	1)	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				
1731	assessment. OD 315mm	m	1,510		
	Page Total Carried Forward to Next Page				

tem 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		
3020.0	Straight Specials				

	Eastleigh (PROVISIONAL)						
Proposed Water Line 51A-46H along Digo Rd							
tem 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		3				
		nr					
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 sorround, 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						
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 500mm.	m	50				
K731.2	Ditto' - but Concrete block paved road	m	25				
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	88				
K731.2	Ditto' - but Concrete block paved road	m	38				
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION						
	Concrete Support, Thrust Blocks, Stools and Anchor Blocks Thrust blocks for tool, block and and anchor blocks for topors, gate values and						
	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	7				
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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						
	Volume:- 0.5 - 1m ³						
L742	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	-					

em 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	1,260		
	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		
А3	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	m	1,260		
	to approved tips. OD160mm, depth not exceeding 1.5m				
	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				
1712	density polyethylene pipes (HDPE) PE 100 - PN 16 OD160mm, depth not exceeding 1.5m		1,008		
		m			
I713	OD160mm, depth not exceeding 2.0m	m	252		

em 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 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		

Item No Description Unit Quantity Rate (Ksh) A							
em 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 sorround, e.t.c						
	Manholes						
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.	23				
	Marker Posts						
K82	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				
10751.2			200				
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"		147				
		m³					
L111.3	Excavation in trench for rock class "C"	m³	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				

em No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Concrete supports, thrust blocks, stools and anchor blocks				
	Thrust blocks for tees, blank ends and anchor blocks for tapers, gate valves and				
	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		
Х	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		

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			
TAL EVO	LUSIVE 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	j)	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.				
l711	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			
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	11		
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		
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	53		
K742.2	Ditto - but concrete and concrete block paved footpaths		23		
	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO				
L L7	LAYING AND EXCAVATION 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				
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)

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	1)	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		1		

Bill No. 5.2 | Ngara (PROVISIONAL)

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				<u></u>
J321.1	DN150x50mm Saddle Clamp	nr	1		
J321.2	DN150x65mm Saddle Clamp	nr	1		
J321.3	Ditto but 150x80mm	nr			
J321.4	DN150 x 50mm Ferrous All Flanged Tee	nr	1		
J321.5	DN200 x 150mm Ferrous All Flanged Tee		2		
	Double Collars				
J341.1	Ditto but 100/100mm	nr	4		
J341.1	Ditto but 150/150mm	<u>'''</u>	28		·
J341.3			11		·
J341.3	DN100mm Straight Coupling	nr			
	Ditto but 150mm	nr	10		
J341.5	Ditto but 200mm	nr	4		
J351.1	Adaptors DN50mm Flange Adaptor	nr	1		
J351.2	Ditto but 65mm	nr	2		
J351.3	Ditto but 80mm	<u>'''</u> nr	2		<u> </u>
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		l
	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		

Bill No. 5.2 | Ngara (PROVISIONAL)

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			
J621.3	OD160 x 75mm Plain Ended Tee	nr	10		
J621.4	OD160 x 110mm Plain Ended Tee		5		
3021.4		nr	3		
J631.1	HDPE Tapers OD160x110mm Plain Ended HDPE Reducer		1		
J031.1		nr			
	Straight Specials				
J681.1	OD63mm plain ended pipe, 1.2m long	nr	11		
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			
	Valves				
J811.1	DN50mm all flanged sluice valve	nr nr	2		
J811.2	Ditto but 65mm	nr nr	2		
J811.3	Ditto but 80mm	nr 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 sorround, 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		

Bill No. 5.2 Ngara (PROVISIONAL)

Item No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
	Markey Deate				
	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		
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	111		
K742.2	Ditto - but concrete and concrete block paved footpaths	m	48		
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	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 COLL FOTION CULFT				
	TOTAL CARRIED FORWARD TO COLLECTION SHEET				

	Bill 5 - COLLECTION SHEET	
	NGARA (PROVISIONAL)	
SECTION	DESCRIPTION	TOTAL AMOUNT
		(Kshs.)
	BILL No. 5.1	
	BILL No. 5.2	
TOTAL EYO	LUSIVE OF VAT CARRIED TO SUMMARY SHEET	
IOIAL EXC	LUSIVE OF VAT CARRIED TO SUMMART SHEET	

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	and Nyasa Rd Jogoo Rd and in Bahati Estate. Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	NOTE:	Oiiit		(11011)	, can (1.011)
	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 OF FARANCE				
	CLASS D: DEMOLITION AND SITE CLEARANCE				
D11	General site clearance along the pipeline alignment	ha	0.43		
	Buildings and Other Structures				
	Allow for demolition and removal of buildings and all other structures including all				
D46	chambers, marker posts, brickwork, concrete, masonry, metal, timber and other	Item	PS		
	materials from the wayleave. The rate includes for removal of all waste material.				
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		
	To approved upo. Ob roomin, departion exceeding 1.3111				
D61.2	Removal of existing pipeline and carting away of removed existing pipe and fittings	m	1,800		
	to approved tips. OD200mm, depth not exceeding 1.5m		1,000		
	CLASS I: PIPEWORK - PIPES		<u> </u>		
	SUPPLY AND LAYING OF PIPELINES				
	SUFFEI AND LATING OF FIFELINES				
	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 Barr		1		
	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,

	and Nyasa Rd Jogoo Rd and in Bahati Estate. Sum Brought Forward From Previous Page			
l712	OD160mm, depth not exceeding 1.5m	m_	4,280	
I713	OD160mm, depth not exceeding 2.0m	m	1,070	
1714	OD200mm, depth not exceeding 1.5m	m	1,440	
I715	OD200mm, depth not exceeding 2.0m	m	360	
	CLASS J - PIPEWORK - FITTINGS AND VALVES			
	52.65 5 11.27 6.10 1.11.11.00 2.11.0 1.12.10			
	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		1	
J321.3	DN 200 x 100mm Ferrous All Flanged Tee	nr		
J3Z1.4		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	<u>nr</u>	1	
J341.7	DN 200mm Straight Coupling	<u>nr</u>	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,

	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	
J621.1	Junctions and Branches 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,

	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 sorround, e.t.c				
K151.1	Manholes Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	1		
	S. S. S. S. S. S. S. S. S. S. S. S. S. S		L '		
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 murram paved road		751		
1731.3	Ditto - but muram paved load	m	751		
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	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		
			I	I	1

	Sum Brought Forward From Previous Page			
L7	Concrete Support, Thrust Blocks, Stools and Anchor Blocks			
	Thrust blocks for tees, end caps 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			
711.1	To nominal bore 200mm	nr	10	
	Volume:- 0.1 - 0.2m ³			
721.1	To nominal bore 200mm	nr	12	
	Volume:- 0.2 - 0.5m³			
731.1	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.	ltem	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	

em No	Description	Unit	Quantity	Rate (Ksh)	Amount (K
	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	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		
А3	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	D	Item			
	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.				
I711.2	OD 160mm	m	2,150		

roposed wa	ter Lines: 70A-71G, 70N-70Q along Njiwa Rd- Ngiri Rd and in Mbotela Estate		I		
tem 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				
	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		

Proposed Water Lines: 70A-71G, 70N-70Q along Njiwa Rd- Ngiri Rd and in Mbotela Estate							
em No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksl		
	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				
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	128				
K742.2	Ditto - but concrete and concrete block paved footpaths	m	55				

ill No. 6.2	Jogoo Road (PROVISIONAL)				
roposed Wa	ater Lines: 70A-71G, 70N-70Q along Njiwa Rd- Ngiri Rd and in Mbotela Estate				
em No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh
	Sum Brought Forward From Previous Page				
L L7	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION Concrete Support, Thrust Blocks, Stools and Anchor Blocks				
	Thrust blocks for tees, end caps 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	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				

	Bill 6 Collection Sheet	
	Jogoo Road (PROVISIONAL)	
SECTION	DESCRIPTION	TOTAL AMOUNT
		(Kshs.)
	BILL No. 6.1	
	BILL No. 6.2	
TOTAL EYO	LUSIVE OF VAT CARRIED TO SUMMARY SHEET	
IOIAL EXC	LOSIVE OF VAT CARRIED TO SOMMART SHEET	

em No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ks
	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.				
	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.				
	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 this approved by the Engineer.				
	CLASS I: PIPEWORK - PIPES				
	Supply and Installation of Pipes and Fittings to be used for Reinstatement of Existing Consumer Connections				
	Typical arrangement of pipes and fittings for a consumer connection are shown in standard drawings.				
	The Pipes and Fittings to be supplied under this Item are for 4895 Nr. Consumer Connections.				
	Supply, Transport to Site and install all Pipes for the Consumer Connections. All pipes and fittings to be pressure Class PN 10 Rating.				
l612.1	DN15mm, PPR pipe	m	3,533		
I612.2	Ditto but 20mm	m	1,598		
I612.3	Ditto but 25mm	m	715		
l612.4	Ditto but 32mm	m	379		
l612.5	Ditto but 40mm	m	189		
I612.6	Ditto but 50mm	m	400		
1612.7	Ditto but 63mm	m	126		
1612.8	Ditto but 90mm HDPE Pipe	m	189		
1612.9	Ditto but 110mm	m	42		
	CLASS J: PIPEWORK - FITTINGS AND VALVES				
	Supply, Transport to Site and install all Fittings (Refer to Standard drawing excluding consumer meter) for REINSTATED CONSUMER CONNECTIONS				
	Rates to Include all necessary Jointing Material/ Fittings. All pipes and fittings to be pressure Class PN 10 Rating.				
J691.1	Connected to 110mm dia. HDPE distribution line 15mm dia	nr	122		

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em 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.				
	intings to be pressure olds in to realing.				
	Connected to 110mm dia. HDPE distribution line				
J691.1	15mm dia	nr	13		
J691.2 J691.3	20mm dia 25mm dia	nr nr	1 4		
J691.3	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 4		
J691.3 J691.4	25mm dia 32mm dia	nr 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 4		
J691.2 J691.3	20mm dia 25mm dia	nr 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	<u>nr</u>	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				
	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.				
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		
104* 0	Ditta but of any dis				
J91*.3	Ditto but 25mm dia	nr	21	L	

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					
J91*.4	Ditto but 32mm dia	nr	11			
J91*.5	Ditto but 40mm dia	nr	44			
J91*.6	Ditto but 50mm dia	nr	44			
J91*.7	Ditto but 63mm dia	nr	44			
J91*.8	Ditto but 90mm dia	nr	44			
J91*.9	Ditto but 110mm dia	nr	2			
	CLASS K: PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES					
	Meter Boxes					
K24*	Standard Plastic Meter Boxes with cover and opening key, minimum dimensions; length-265mm, width-150mm & height-180mm.	nr	181			
	In Situ - Meter Chambers					
	Provide all materials and construct masonry chambers. Include for supply and fixing of removable composite covers, compacted granular fill, etc. All as detailed in standard drawings.					
	Provide all materials and construct meter boxes as detailed in Standard Drawings. Rate includes all costs such as excavation, masonry, re-steel bar, chamber cover, e.t.c					
K111.*	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	13			
	TOTAL CARRIED FORWARD TO SUMMARY SHEET					

Bill No. 7.2	CONSUMER CONNECTIONS (PROVISIONAL)				
	ara, Jogoo Road	I			
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 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.				
	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.				
	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 the approved by the Engineer.				
	CLASS I: PIPEWORK - PIPES				
	Supply and Installation of Pipes and Fittings to be used for Reinstatement of Existing Consumer Connections				
	Typical arrangement of pipes and fittings for a consumer connection are shown in standard drawings.				
	The Pipes and Fittings to be supplied under this Item are for 4895 <u>Nr</u> . Consumer Connections.				
	Supply, Transport to Site and install all Pipes for the Consumer Connections. All pipes and fittings to be pressure Class PN 10 Rating.				
I612.1	DN15mm, PPR pipe	m	3,145		
1612.2	Ditto but 20mm	m	1,423		
I612.3	Ditto but 25mm	m	636		
I612.4	Ditto but 32mm	m	337		
l612.5	Ditto but 40mm	m	168		
I612.6	Ditto but 50mm	m	356		
l612.7	Ditto but 63mm	m	112		
I612.8	Ditto but 90mm HDPE Pipe	m	168		
l612.9	Ditto but 110mm	m	37		
	CLASS J: PIPEWORK - FITTINGS AND VALVES				
	Supply, Transport to Site and install all Fittings (Refer to Standard drawing excluding consumer meter) for REINSTATED CONSUMER CONNECTIONS				
	Rates to Include all necessary Jointing Material/ Fittings. All pipes and fittings to be pressure Class PN 10 Rating.				
J691.1	Connected to 110mm dia. HDPE distribution line 15mm dia	nr	109		
	Page Total Carried Forward to Next Page				

J691.8

J691.9

J691.1 J691.2

J691.3 J691.4 J691.5

90mm dia

15mm dia 25mm dia

50mm dia 63mm dia 90mm dia

110mm dia

Connected to 400mm dia. HDPE distribution line

Page Total Carried Forward to Next Page

Bill No. 7.2	CONSUMER CONNECTIONS (PROVISIONAL)					
Eastleigh, Ngara, Jogoo Road						
tem No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh	
	Sum Brought Forward From Previous Page					
J691.2	20mm dia	nr	120			
J691.3	25mm dia	nr	19			
J691.4	40mm dia	nr	7			
J691.5	50mm dia		7			
J691.6	63mm dia		4			
	90mm dia	nr	3			
J691.7	90mm dia		-			
	Connected to 160mm dia. HDPE distribution line					
1691.1	15mm dia	nr	225			
1691.2	20mm dia	nr	90			
1691.3	25mm dia	nr	41			
1691.4	32mm dia	nr	22			
1691.5	40mm dia	nr	11			
1691.6	50mm dia	nr	30			
1691.7	63mm dia	nr	7			
1691.8	90mm dia	nr nr	11			
1691.9	110mm dia	nr	4			
	Connected to 200mm dia. HDPE distribution line					
J691.1	15mm dia	nr	101			
J691.2	20mm dia	nr	26			
J691.3	25mm dia	nr	26			
J691.4	32mm dia	nr	19			
J691.5	40mm dia	nr	77			
J691.6	50mm dia	nr	19			
J691.7	63mm dia	nr	44			
J691.8	90mm dia	nr	7			
J691.9	110mm dia	nr	22			
	Connected to 250mm dia. HDPE distribution line					
J691.1	15mm dia	nr	15			
J691.2	20mm dia	nr	7			
J691.3	25mm dia	nr	6			
J691.4	32mm dia	nr	6			
J691.5	40mm dia	nr	66			
J691.6	50mm dia	nr	7			
J691.7	63mm dia	nr	44			
J691.8	90mm dia	nr	22			
	Connected to 315mm dia. HDPE distribution line					
J691.1	15mm dia	nr	11			
J691.2	20mm dia	nr	4			
J691.3	25mm dia	nr	7			
J691.4	32mm dia		4			
J691.5	40mm dia	nr	4			
J691.6	50mm dia	nr	4			
J691.7	63mm dia	nr	1			
1691.8	90mm dia	nr	4			

nr

nr

nr nr nr

4

2

Sum Brought Forward From Previous Page	m No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh
clamps, brass Ferrules etc. as shown in standard drawing but excluding consumer metar for New CONSUMER CONNECTIONS		Sum Brought Forward From Previous Page				
clamps, brass Ferrules etc. as shown in standard drawing but excluding consumer metar for New CONSUMER CONNECTIONS						
fittinas to be pressure Class PN 10 Ratina.		clamps, brass ferrules etc. as shown in standard drawing but excluding				
15mm dia 15mm dia 17mm dia 17mm dia 18mm dia 19mm dia						
J891.2 20mm dia nr 1		Connected to 110mm dia. HDPE distribution line				
Je91-3 25mm dia nr			nr			
Je91-5 32mm dia mr 1						
Je91.5 40mm dia						
Connected to 160mm dia. HDPE distribution line J891.1 15mm dia J891.3 25mm dia J891.3 25mm dia J891.4 32mm dia J891.5 40mm dia J891.5 40mm dia J891.5 40mm dia J891.7 63mm dia J891.7 63mm dia J891.8 90mm dia J891.8 90mm dia J891.8 90mm dia J891.8 15mm dia J891.8 15mm dia J891.8 15mm dia J891.9 1 15mm dia J891.1 15mm dia J891.3 25mm dia J891.3 25mm dia J891.7 63mm dia J891.7 63mm dia J891.8 91mm dia J891.9 1 10mm dia J891.1 15mm						
Je91-12 15mm dia	0051.5	Tomini dia				
Jest 2 20mm dia		Connected to 160mm dia. HDPE distribution line				
Jags 1, 32 25mm dia	J691.1	15mm dia	nr	45		
J891.1 32mm dia						
Jags 1,591.5 40mm dia nr 2						
J891.6 Somm dia						
Jack Jack						
J691.8 90mm dia						
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	J91*.2	Ditto but 20mm dia	nr	22		
J91*.3 Ditto but 25mm dia nr 19						
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Eastleigh, Ngara, Jogoo Road					
tem No	Description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Sum Brought Forward From Previous Page				
J91*.4	Ditto but 32mm dia	nr	9		
J91*.5	Ditto but 40mm dia	nr	4		
J91*.6	Ditto but 50mm dia	nr	4		
J91*.7	Ditto but 63mm dia	nr	4		
J91*.8	Ditto but 90mm dia	nr	4		
J91*.9	Ditto but 110mm dia	nr	2		
	CLASS K: PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES				
	Meter Boxes				
K24*	Standard Plastic Meter Boxes with cover and opening key, minimum dimensions; length-265mm, width-150mm & height-180mm.	nr	161		
	In Situ - Meter Chambers				
	Provide all materials and construct masonry chambers. Include for supply and fixing of removable composite covers, compacted granular fill, etc. All as detailed in standard drawings.				
	Provide all materials and construct meter boxes as detailed in Standard Drawings. Rate includes all costs such as excavation, masonry, re-steel bar, chamber cover, e.t.c				
K111.*	Chamber internal dimensions 900mm x 900mm, depth n.e. 2m	nr.	11		
	TOTAL CARRIED FORWARD TO SUMMARY SHEET				

	Bill 7 Collection Sheet				
	CONSUMER CONNECTIONS				
SECTION	DESCRIPTION	TOTAL AMOUNT			
		(Kshs.)			
	BILL No. 7.1				
	BILL No. 7.2 (Provisional)				
TOTAL EXC	LUSIVE OF VAT CARRIED TO SUMMARY SHEET				

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 m³/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				

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	m³	10		
3.1	Concrete Class 20/20	m ³	10		
3.11	Concrete Class 25/20	m ³	10		
3.12	600mm dia. Concrete Oqee 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		30		
		m			
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 wavleave 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)]	