



**PROCUREMENT DOCUMENTS**

**Volume I :**

**BILLS OF QUANTITIES**

**Procurement of**

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**Eastern Nairobi Water &  
Sewerage Network  
Intensification Project**

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**ICB No: AWWDA.....**

**Athi Water Works Development Agency**

**KENYA**

**BILL NO. 1: PRELIMINARIES AND GENERAL ITEMS**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>1</b>	<b>CONTRACTUAL REQUIREMENTS</b>				
1.1	Allow for provision of Performance Security In accordance with the Conditions of Contract	Item	L.S		
1.2	Allow for provision of Insurance for Works and Contractor's Equipment in accordance with the Conditions of Contract	Item	L.S		
1.3	Allow for provision of Third Party Insurance (including Employer's property) in accordance with the Conditions of Contract	Item	L.S		
<b>2</b>	<b>SPECIAL REQUIREMENTS</b>				
2.1	Contractor's Camp and Storage Yard: Allow for erection of the Contractor's Camp(s), Offices, Storage Yard and other facilities including mobilization, demobilization and movement of the works site on Completion. Include for mobilization of all equipment, temporary measures, machines, tools, materials, facilities for workers, water and electricity supply etc. all as specified for execution of the Works, for the entire Contract Period. <b>The Employer has no available land to offer for Contractor's Camp, storage of materials etc.</b> Identification and procurement of suitable area of land for Contractor's Camp whether rented or purchased is the responsibility of the Contractor. <b>Details of proposed camp / stores, location of land</b> where the Contractor will establish his camp(s) to be submitted with the Bid.	Item	L.S		
2.2	Test running of the works: Contractor to test-run the newly constructed facilities for a period of 4 weeks upon completion of the Works. Test running to be carried out in close liaison with the Water Services Provider's staff. The contractor to allow for 'on-job' training of Operation and Maintenance Staff, tools etc. and ensure the operations are carried out full time on 24 hour basis, all in accordance with the General and Particular Conditions of the Bidding Document	Item	L.S		
2.3	Allow for provision of As-Built Drawings in accordance with the General and Particular Specifications of the Bidding Document	Item	L.S		
<b>3</b>	<b>Specified Requirements</b>				
	<b>Sign Boards and Plaque</b>				
3.1	Provision, fixing, maintaining and removal of site signboards as per drawings in Bidding Document	nr	12		
	<b>Offices for the Resident Engineer and Staff</b>				
3.2	Provide for rented Site offices for the supervision team in accordance with the Specifications in the Bidding Document, all to the Engineer's Approval	month	18		
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**BILL NO. 1: PRELIMINARIES AND GENERAL ITEMS**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
3.3	Provisional Sum for provision of furniture and equipment for the Resident Engineer's Offices as specified under Clause 1.17 of the Employer's Requirements. To include furniture, laptop computers, mobile phones, digital cameras, printers e.t.c. Final List of Furniture & Equipment to be procured will be provided by the Resident Engineer prior to commencement of Works. The furniture and equipment to revert to the Employer at the end of the Contract. All furniture and equipment to be made in good working order before returning to the Employer.	Item	P.S		5,000,000
3.4	Add _____% for profit, administration, attendance upon, overheads, etc. for Item 3.4 above	%	5,000,000		
3.5	Provide maintenance of site office including provision of water, electricity, bevarages, toiletries, security etc. in accordance with the Specifications in the Bidding Document	month	18		
3.6	Provide for maintanance of communication facilities including, airtime, internet subscription etc. for the Project Site Office and the Supervision Staff, in accordance with the Specifications in the Bidding Document	month	18		
3.7	Provide for rented Site offices for the Community Outreach Consultant as specified under the Employers Requirements	month	18		
	<b>Services for Engineer's Staff</b>				
3.8	Provisional Sum of KShs 17,640,000 for Supply of three (3No) Double Cabin Vehicles (2800cc) for use by Engineer and staff, including registration, inspection etc as described in the Specifications. Vehicles to revert to the Employer after completion of the Contract.	Item	P.S		17,640,000
3.9	Add _____% for profit, administration, attendance upon, overheads, etc. for Item 3.9 above	%	17,640,000		
3.10	Provide for maintenance, running, servicing and insurance costs of the vehicles on items 3.9 and 3.11 as directed by the Engineer.	km	250,000		
3.11	Provisional Sum for Supply of one (1No) Double Cabin Vehicles (2800cc) for use by the Resident Sociologist in undertaking field Community Outreach activities, as described in the Specifications. Vehicles to revert to the Employer.	Item	P.S		5,880,000
3.12	Add _____% for profit, administration, attendance upon, overheads, etc. for Item 3.13 above	%	5,880,000		
3.15	Provide for maintenance, running, servicing and comprehensive insurance costs of the vehicles on item 3.13 as directed by the Engineer.	km	30,000		
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**BILL NO. 1: PRELIMINARIES AND GENERAL ITEMS**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
3.16	Provisional Sum for monthly maintenance of office equipment (printers, cameras etc) for use by the Engineer's Staff	month	18		
	<b>Equipment for Engineer's Staff</b>				
	<b>Attendance Upon Engineer's Staff</b>				
3.17	Provide for attendance upon Engineer's Staff by drivers (5No.)	month	18		
3.21	Provide for attendance upon Engineer's staff by office Administrators (2 No.)	month	18		
3.22	Provide for attendance upon Engineer's staff by office assistants and chainmen (4No.)	month	18		
	<b>Testing of Materials and Works</b>				
3.23	Provisional sum for testing of materials as may be directed by the Engineer	Item	PS		600,000
	<b>Other Provisional sums</b>				
3.24	Allow a provisional Sum for fees requested by various authorities and agencies including TELKOM, CABLE companies, NCWSC, road authorities etc). This sum in to cover the identification and relocation of the said services.	Item	P.S		4,000,000
3.25.1	Allow a provisional sum of Kshs. 7,000,000 to cover cost for capacity building , youth empowerment, training and internship to be expended by the project manager.	Item	P.S		7,000,000
3.26	Allow a Provisional sum for implementing safeguards/ESMP due diligence while undertaking the work to be expended as directed by the Engineer.	Item	P.S		5,000,000
3.27	Allow a Provisional sum of KES 4,000,000/- , to be spent in whole or part, for Community sensitization and RAP implementation activities, to be spent as directed by the Engineer	Item	P.S		4,000,000
3.28	Include Percentage addition to item (3.25.1 to 3.27) for overheads and profits	%	20,600,000		
3.29	Allow for a sum for implementation ESHS including for ESIA, PSEA, GBV, HIV as described in the technical specifications. Contractors will be evaluated on the responsiveness to provisions in the specifications on a pass or fail basis.	Item	L.S		
	<b>Bidders are advised to refer to ITB 35.2 a) to e), and evaluation criteria 1.1 on ESHS methodology evaluation while quoting for this item. Cost to be carried forward from the ESHS Cost schedule.</b>				
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BILL NO. 1: PRELIMINARIES AND GENERAL ITEMS

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BILL NO. 1: PRELIMINARIES AND GENERAL ITEMS

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**BILL No. 2 - PRIMARY MAIN**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>CLASS A - TESTING AND SETTING OUT OF WORKS</b>				
	Testing and Commissioning of the Pipeline including flushing and sterilising in accordance with the Specification Clause 5.19 & 5.20				
A260.1	OD813	m	3300		
A260.2	OD630	m	1000		
A260.3	OD500	m	3250		
A260.4	OD400	m	5200		
A260.5	OD315	m	4700		
	Method Related Charges				
	The Pipeline will be laid along narrow urban roads with existing active services both on the surface (electricity, etc) and buried (existing community water pipelines, fiber optic cables, etc.) and with limited working space for mechanical excavation equipment.				
	The Contractor's rates shall be deemed to include for any measures necessary to deal with these conditions, provision of access road to work site, liaison with relevant authorities and local residents, payment of any required statutory charges, etc. The Contractor will be required to submit Method Statement for execution of works under these specific conditions for approval prior to execution of the works. These include but are not limited to the following: i. <b>No blasting</b> will be permitted in these areas ii. The Contactor to maintain uninterrupted continuity of water supply in existing pipelines iii. Pedestrian and vehicular Access to individual shops / plots to be maintained at all times iv. Safety hoarding, lighting, bands, warning signs, tapes etc. to be maintained at all times. v. Keeping trenches free of excessive groundwater, seepage or water from any source vi. <b>Trench collapse protection</b> will be required for trenches deeper than 1.5m that are not entirely of stable rock including; shielding (devices designed to protect workers in the event of a collapse, such as trench boxes); shoring (bracing designed to prevent collapse, such as hydraulic shoring or slide-rail systems); and sloping or benching trench walls away from the trench bottom at				
A35.1	Cost relating to the above mentioned specific conditions	Item	L.S		
A35.2	Liaison, facilitation with local residents and relevant authorities and payment for access, accidental damage, temporary access to working spaces during execution of the Works, etc.	Item	L.S		
A35.3	Allow for any other method related charges the tenderer feels may be required. These should be indicated below with pricing for each item (Tenderer may attach additional sheets if necessary)				
	i)	Item	L.S		
	ii)	Item	L.S		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 2 - PRIMARY MAIN**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	17450		
	<b>CLASS I - PIPEWORK - PIPES</b>				
<b>I4</b>	<b>STEEL PIPES (External Epoxy Coated and Internal cement mortar lined) - Pressure Rating of PN16</b>				
	<u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Include supply jointing material, bolts, nuts, gaskets etc as applicable.</u>				
I441.1	Outer Diameter 813mm - not in trenches	m	3300		
I441.2	Outer Diameter 630mm - not in trenches	m	1000		
I431.1	Outer Diameter 500mm - not in trenches	m	3250		
I431.2	Outer Diameter 400mm - not in trenches	m	5200		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I442.1	Outer Diameter 813mm in trenches, depth not exceeding 1.5m	m	825		
I443.1	-Ditto- but depth 1.5m - 2.0m	m	1155		
I444.1	-Ditto- but depth > 2.0m	m	1320		
I442.2	Outer Diameter 630mm in trenches, depth not exceeding 1.5m	m	250		
I443.2	-Ditto- but depth 1.5m - 2.0m	m	350		
I444.2	-Ditto- but depth > 2.0m	m	400		
I432.1	Outer Diameter 500mm in trenches, depth not exceeding 1.5m	m	813		
I433.1	-Ditto- but depth 1.5m - 2.0m	m	1138		
I434.1	-Ditto- but depth > 2.0m	m	1300		
I432.2	Outer Diameter 400mm in trenches, depth not exceeding 1.5m	m	1300		
I433.2	-Ditto- but depth 1.5m - 2.0m	m	1820		
I434.2	-Ditto- but depth > 2.0m	m	2080		
	<u>For <b>River aerial crossings</b> - Supply, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.</u>				
I421.1	Outer Diameter 500mm	m	100		
I421.2	Outer Diameter 400mm	m	50		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					



**BILL No. 2 - PRIMARY MAIN**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
I421.3	Outer Diameter 315mm	m	100		
<b>I7</b>	<b>HDPE PIPES - PN16</b>				
	Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.				
I731.1	Outer Diameter 315mm - not in trenches	m	4700		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I722.1	Outer Diameter 315mm in trenches, depth not exceeding 1.5m	m	1175		
I722.2	-Ditto- but depth 1.5m - 2.0m	m	1645		
I722.3	-Ditto- but depth > 2.0m	m	1880		
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J3</b>	<b><u>STEEL FITTINGS (External Epoxy Coated and Internal cement mortar lined) - Pressure Rating of PN16</u></b>				
	Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J31</b>	<b><u>Bends</u></b>				
	<b>Plain Ended Bends</b>				
J334.1	Outer Diameter 813mm 90° bend	nr	2		
J334.2	-Ditto- but 45° bend	nr	1		
J334.3	-Ditto- but 22.5° bend	nr	3		
J334.4	-Ditto- but 11.25° bend	nr	5		
J334.5	Outer Diameter 630mm 22.5° bend	nr	1		
J334.6	-Ditto- but 11.25° bend	nr	3		
J333.1	Outer Diameter 500mm 45° bend	nr	1		
J333.2	-Ditto- but 22.5° bend	nr	1		
J333.3	-Ditto- but 11.25° bend	nr	7		
J333.4	Outer Diameter 400mm 45° bend	nr	6		
J333.5	-Ditto- but 22.5° bend	nr	4		
J333.6	-Ditto- but 11.25° bend	nr	7		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

BILL No. 2 - PRIMARY MAIN					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J32</b>	<b><u>Junctions and Branches</u></b>				
	<b>All flanged Tee</b>				
J323.1	Outer Diameter 813mm x 350mm	nr	1		
J323.2	Outer Diameter 813mm x 250mm	nr	1		
J323.3	Outer Diameter 630mm x 315mm	nr	1		
J323.4	Outer Diameter 630mm x 250mm	nr	1		
J323.5	Outer Diameter 500mm x 200mm	nr	1		
J323.6	Outer Diameter 500mm x 110mm	nr	2		
J323.7	Outer Diameter 400mm x 315mm	nr	1		
J323.8	Outer Diameter 400mm x 200mm	nr	1		
J323.9	Outer Diameter 400mm x 160mm	nr	1		
J323.10	Outer Diameter 400mm x 110mm	nr	1		
	<b>Flange Tee for Air Valve</b>				
J323.11	Outer Diameter 813mm x 100mm	nr	2		
J323.12	Outer Diameter 500mm x 100mm	nr	2		
J323.13	Outer Diameter 400mm x 80mm	nr	3		
J323.14	Outer Diameter 315mm x 80mm	nr	2		
	<b>All Flanged Inverted Tee for Washout)</b>				
J323.16	Outer Diameter 830mm x 150mm	nr	1		
J323.17	Outer Diameter 630mm x 100mm	nr	1		
J323.18	Outer Diameter 500mm x 100mm	nr	2		
J323.19	Outer Diameter 400mm x 80mm	nr	2		
<b>J33</b>	<b><u>Tapers</u></b>				
	<b>All Flanged Concentric Taper</b>				
J332.1	813 x 630mm	nr	1		
J332.2	630 x 500mm	nr	1		
J332.3	500 x 400mm	nr	1		
J332.4	400 x 315mm	nr	1		
<b>J34</b>	<b><u>Double Collars</u></b>				
	<b>Stepped Couplings</b>				
J341.1	Outer Diameter 315mm flange steel/HDPE stepped coupling	nr	6		
J341.4	Outer Diameter 150mm flange steel/HDPE stepped coupling (For Washout)	nr	1		
PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET					

<b>BILL No. 2 - PRIMARY MAIN</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
J341.5	Outer Diameter 100mm flange steel/HDPE stepped coupling (For Washout)	nr	3		
J341.6	Outer Diameter 80mm flange steel/HDPE stepped coupling (For Washout)	nr	2		
	<b>Couplings</b>				
J341.1	OD 813	nr	4		
J341.2	OD 630	nr	2		
J341.3	OD 500	nr	5		
J341.4	OD 400	nr	5		
<b>J35</b>	<b>Adaptors</b>				
	<b>Flanged Adaptor</b>				
J351.1	Outer Diameter 813mm flanged adaptor	nr	2		
J351.2	Outer Diameter 630mm flanged adaptor	nr	2		
J351.3	Outer Diameter 500mm flanged adaptor	nr	3		
J351.4	Outer Diameter 400mm flanged adaptor	nr	4		
J351.5	Outer Diameter 315mm flanged adaptor	nr	2		
J351.6	Outer Diameter 250mm flanged adaptor	nr	3		
J351.7	Outer Diameter 200mm flanged adaptor	nr	1		
J351.8	Outer Diameter 150mm flanged adaptor (for Washout)	nr	1		
J351.9	Outer Diameter 100mm flanged adaptor (for Washout)	nr	3		
J351.10	Outer Diameter 80mm flanged adaptor (for Washout)	nr	2		
J351.11	Diameter 100mm flanged adaptor (for Air Valve)	nr	4		
J351.12	Diameter 80mm flanged adaptor (for Air valve)	nr	5		
<b>J38</b>	<b>Straight Specials as specified</b>				
	<b>Plain Ended Pipes</b>				
J381.1	315mm diameter Plain Ended Pipe piece (1.2m)	nr	6		
J381.4	150mm diameter plain ended steel, 2000mm long (for Washout)	nr	1		
J381.5	-Ditto- but DN100	nr	3		
J381.6	-Ditto- but DN80	nr	2		
J383.1	813mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	4		
J383.2	-Ditto- but DN500	nr	4		
J383.3	-Ditto- but DN400	nr	6		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

BILL No. 2 - PRIMARY MAIN					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J383.4	-Ditto- but DN315	nr	4		
J383.6	813mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	2		
J383.7	-Ditto- but DN500	nr	4		
J383.8	-Ditto- but DN400	nr	4		
	<b>Flanged Spigot Pipes</b>				
J383.9	813mm diameter flanged spigot pipe	nr	4		
J383.10	-Ditto- but DN630	nr	2		
J383.11	-Ditto- but DN500	nr	5		
J383.12	-Ditto- but DN400	nr	3		
J383.13	-Ditto- but DN315	nr	4		
J383.14	-Ditto- but DN250	nr	2		
J383.15	-Ditto- but DN200	nr	1		
	<b>All Flanged Pipes</b>				
J383.16	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	5		
J383.17	100mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	4		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	10		
<b>J6</b>	<b><u>HDPE FITTINGS - Pressure Rating of PN16</u></b>				
<b>J61</b>	<b><u>Bends</u></b>				
J611.1	Outer Diameter 315mm 45° bend	nr	4		
<b>J62</b>	<b><u>Junctions and Branches</u></b>				
J623.1	Outer Diameter 315mm x 315mm - Tee	nr	1		
J623.2	Outer Diameter 315mm x 200mm - Tee	nr	1		
J623.2	Outer Diameter 315mm x 110mm - Tee	nr	3		
J623.3	Outer Diameter 315mm x 90mm - Tee	nr	1		
<b>J63</b>	<b><u>Tapers</u></b>				
	<b><u>Concentric Taper</u></b>				
J632.4	Supply and Install Concentric Taper of 315 x 90mm	nr	1		
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BILL No. 2 - PRIMARY MAIN					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J8	VALVES AND PENSTOCKS				
J81	<u>Gate Valves as specified</u>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Outer Diameter 150mm flanged sluice valve for Washout	nr	1		
J811.2	Nominal Diameter 100mm flanged sluice valve for Washout	nr	3		
J811.3	Nominal Diameter 80mm flanged sluice valve for Washout	nr	2		
J811.4	Nominal Diameter 150mm flap valve for Washout	nr	1		
J811.5	Nominal Diameter 100mm flap valve for Washout	nr	3		
J811.6	Nominal Diameter 80mm flap valve for Washout	nr	2		
J811.7	Nominal Diameter 100mm flanged sluice valve for Air Valve	nr	4		
J811.8	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	5		
J811.8	Outer Diameter 813mm flanged sluice valve	nr	1		
J811.9	Outer Diameter 630mm flanged sluice valve	nr	1		
J811.10	Outer Diameter 500mm flanged sluice valve	nr	2		
J811.11	Outer Diameter 400mm flanged sluice valve	nr	4		
J811.12	Outer Diameter 315mm flanged sluice valve	nr	3		
J86	<u>Air Valves as specified</u>				
J861.1	Nominal Diameter 100mm Combination air valve	nr	4		
J861.2	Nominal Diameter 80mm Combination air valve	nr	8		
J87	<u>Pressure Reducing Valves as specified</u>				
J871.1	Outer Diameter 400mm	nr	2		
J91	<u>Flanged Water Meters</u>				
J911.1	OD 813	nr	1		
J911.2	OD 630	nr	1		
J911.3	OD 500	nr	1		
J911.4	OD 400	nr	1		
J911.5	OD 315	nr	1		
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**BILL No. 2 - PRIMARY MAIN**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries				
	<b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. - Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133.1	In situ concrete chamber, internal size 2500mm x 2500mm, depth not exceeding 2.0m	nr	11		
	<b>Meter Chambers</b>				
K133.2	In situ concrete chamber, internal size 2500mm x 2500mm, depth not exceeding 2.0m	nr	5		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 200-630mm	nr	5		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	1500		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	600		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murrum road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 110-250mm	m	550		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 110-250mm	m	1500		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 2 - PRIMARY MAIN**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>K8</b>	<b>Other Pipework Ancillaries</b>				
<b>K82</b>	<b>Marker Posts</b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	12		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	18		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	6		
<b>K87</b>	<b>Washout Outfall structures</b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	6		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b>Rate to include carting away and disposal.</b>				
<b>L11</b>	<b>In Pipe Trenches and Chambers</b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	8000		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	3500		
	<b>Note:</b> - Blasting is NOT permitted for all Items under L1				
<b>L5</b>	<b>Surrounds</b>				
<b>L52</b>	<b>Selected Excavated Granular Fill</b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 813-200mm	m	13960		
<b>L53</b>	<b>Imported Selected Fill</b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 813-200mm	m	3490		
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	1400		
<b>L6</b>	<b>Pipe Wrapping</b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m	750		
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**BILL No. 4 - MIHANG'O DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	22922		
	<b>CLASS I - PIPEWORK - PIPES</b>				
<b>I7</b>	<b>HDPE PIPES - PN16</b>				
	<u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.</u>				
I441.1	Outer Diameter 315mm - not in trenches	m	4000		
I441.2	Outer Diameter 250mm - not in trenches	m	1250		
I431.1	Outer Diameter 200mm - not in trenches	m	7550		
I431.2	Outer Diameter 110mm - not in trenches	m	5872		
I431.3	Outer Diameter 90mm - not in trenches	m	4250		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I442.1	Outer Diameter 315mm in trenches, depth not exceeding 1.5m	m	1000		
I443.1	-Ditto- but depth 1.5m - 2.0m	m	1400		
I444.1	-Ditto- but depth > 2.0m	m	1600		
I442.2	Outer Diameter 250mm in trenches, depth not exceeding 1.5m	m	313		
I443.2	-Ditto- but depth 1.5m - 2.0m	m	438		
I444.2	-Ditto- but depth > 2.0m	m	500		
I432.1	Outer Diameter 200mm in trenches, depth not exceeding 1.5m	m	1888		
I433.1	-Ditto- but depth 1.5m - 2.0m	m	2643		
I434.1	-Ditto- but depth > 2.0m	m	3020		
I432.2	Outer Diameter 110mm in trenches, depth not exceeding 1.5m	m	1468		
I433.2	-Ditto- but depth 1.5m - 2.0m	m	2055		
I434.2	-Ditto- but depth > 2.0m	m	2349		
I432.3	Outer Diameter 90mm in trenches, depth not exceeding 1.5m	m	1063		
I433.3	-Ditto- but depth 1.5m - 2.0m	m	1488		
I434.3	-Ditto- but depth > 2.0m	m	1700		
	<u>For River aerial crossings - Supply Steel Pipe sections, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.</u>				
I421.1	Outer Diameter 315mm	m	30		
I421.2	Outer Diameter 200mm	m	220		
I421.3	Outer Diameter 110mm	m	160		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 4 - MIHANG'O DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b>				
	Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
J611.1	Outer Diameter 315mm 90° bend	nr	4		
J611.2	-Ditto- but 45° bend	nr	10		
J611.3	-Ditto- but 22.5° bend	nr	10		
J613.1	Outer Diameter 250mm 45° bend	nr	6		
J613.2	Outer Diameter 200mm 90° bend	nr	9		
J613.3	-Ditto- but 45° bend	nr	15		
J613.7	-Ditto- but 22.5° bend	nr	11		
J613.4	Outer Diameter 110mm 90° bend	nr	26		
J613.5	-Ditto- but 45° bend	nr	52		
J613.6	-Ditto- but 22.5° bend	nr	12		
J613.7	Outer Diameter 90mm 45° bend	nr	13		
J613.8	-Ditto- but 22.5° bend	nr	14		
J613.9	-Ditto- but 11.25° bend	nr	8		
<b>J62</b>	<b>Junctions and Branches</b>				
	<b>Tees</b>				
J623.1	Outer Diameter 315mm x 315mm	nr	2		
J623.2	Outer Diameter 315mm x 250mm	nr	1		
J623.3	Outer Diameter 315mm x 200mm	nr	1		
J623.4	Outer Diameter 315mm x 110mm	nr	6		
J623.5	Outer Diameter 250mm x 110mm	nr	1		
J623.6	Outer Diameter 200mm x 200mm	nr	2		
J623.7	Outer Diameter 200mm x 160mm	nr	1		
J623.8	Outer Diameter 200mm x 110mm	nr	9		
J623.9	Outer Diameter 110mm x 110mm	nr	9		
J623.10	Outer Diameter 110mm x 90mm	nr	1		
J623.11	Outer Diameter 90mm x 90mm	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 4 - MIHANG'O DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>Tees for Air Valve</b>				
J623.12	Outer Diameter 315mm x 80mm	nr	14		
J623.13	Outer Diameter 250mm x 80mm	nr	5		
J623.14	Outer Diameter 200mm x 80mm	nr	29		
J623.15	Outer Diameter 110mm x 80mm	nr	50		
J623.16	Outer Diameter 90mm x 80mm	nr	15		
	<b>Inverted Tee for Washout)</b>				
J623.17	Outer Diameter 315mm x 80mm	nr	6		
J623.18	Outer Diameter 250mm x 80mm	nr	2		
J623.19	Outer Diameter 200mm x 80mm	nr	13		
J623.20	Outer Diameter 110mm x 80mm	nr	30		
J623.21	Outer Diameter 90mm x 80mm	nr	6		
<b>J63</b>	<b><u>Tapers</u></b>				
	<b><u>Concentric Taper</u></b>				
J632.1	315 x 200mm	nr	1		
J632.2	315 x 110mm	nr	2		
J632.3	250 x 200mm	nr	1		
J632.4	250 x 110mm	nr	1		
J632.5	200 x 110mm	nr	5		
<b>J64</b>	<b><u>Double Collars</u></b>				
	<b><u>Stepped Couplings</u></b>				
J641.1	Outer Diameter 315mm flange steel/HDPE stepped coupling	nr	2		
J641.2	Outer Diameter 250mm flange steel/HDPE stepped coupling	nr	4		
J641.3	Outer Diameter 200mm flange steel/HDPE stepped coupling	nr	14		
J641.4	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	40		
J641.5	Outer Diameter 90mm flange steel/HDPE stepped coupling	nr	6		
J641.6	Outer Diameter 80mm flange steel/HDPE stepped coupling (For Washout)	nr	57		
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b><u>Flanged Adaptor</u></b>				
J651.1	Outer Diameter 315mm flanged adaptor	nr	8		
J651.2	Outer Diameter 250mm flanged adaptor	nr	5		
J651.3	Outer Diameter 200mm flanged adaptor	nr	15		
J651.4	Outer Diameter 110mm flanged adaptor	nr	20		
J651.5	Outer Diameter 90mm flanged adaptor	nr	6		
J651.6	Outer Diameter 80mm flanged adaptor (for Washout)	nr	57		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 4 - MIHANG'O DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J651.7	Diameter 80mm flanged adaptor (for Air valve)	nr	113		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b>Plain Ended Pipes</b>				
J682.1	315mm diameter Plain Ended Pipe piece (1.2m)	nr	6		
J682.2	-Ditto- but 250mm	nr	14		
J682.3	-Ditto- but 200mm	nr	4		
J682.4	-Ditto- but 110mm	nr	20		
J682.5	-Ditto- but 90mm	nr	6		
J681.6	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	57		
J681.7	315mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	28		
J681.8	-Ditto- but DN250	nr	10		
J681.9	-Ditto- but DN200	nr	58		
J681.10	-Ditto- but DN110	nr	100		
J681.10	-Ditto- but DN90	nr	30		
J681.11	315mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	12		
J681.12	-Ditto- but DN250	nr	4		
J681.13	-Ditto- but DN200	nr	26		
J681.14	-Ditto- but DN110	nr	60		
J681.15	-Ditto- but DN90	nr	12		
	<b>Flanged Spigot Pipes</b>				
J682.1	315mm diameter flanged spigot pipe	nr	28		
J682.2	-Ditto- but DN250	nr	10		
J682.3	-Ditto- but DN200	nr	58		
J682.4	-Ditto- but DN110	nr	100		
J682.5	-Ditto- but DN90	nr	30		
J682.6	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	57		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	29		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	113		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	29		
J693.2	110mm diameter End Cap	nr	13		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 4 - MIHANG'O DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	57		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	57		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	113		
J811.4	Outer Diameter 315mm flanged sluice valve	nr	3		
J811.5	Outer Diameter 250mm flanged sluice valve	nr	7		
J811.6	Outer Diameter 200mm flanged sluice valve	nr	2		
J811.7	Outer Diameter 110mm flanged sluice valve	nr	10		
J811.8	Outer Diameter 90mm flanged sluice valve	nr	3		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	75		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 315	nr	1		
J911.2	OD 250	nr	1		
J911.3	OD 200	nr	1		
J911.4	OD 110	nr	1		
J911.5	OD 90	nr	1		
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.6	DN 80	nr	10		
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries				
	<b><u>Note:-</u></b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. -Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b><u>Valve Chambers</u></b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	195		
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<b>BILL No. 4 - MIHANG'O DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	5		
<b>K6</b>	<b>Crossings</b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 90-315mm	nr	7		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	2200		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	850		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b>Reinstatement</b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 90-315mm	m	450		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 90-315mm	m	650		
<b>K8</b>	<b>Other Pipework Ancillaries</b>				
<b>K82</b>	<b>Marker Posts</b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	75		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	45		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	57		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					



**BILL No. 4 - MIHANG'O DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>K87</b>	<b>Washout Outfall structures</b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	57		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b>Rate to include carting away and disposal.</b>				
<b>L11</b>	<b>In Pipe Trenches and Chambers</b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	8250		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	2750		
	<b>Note:</b> - Blasting is NOT permitted for all Items under L1				
<b>L5</b>	<b>Surrounds</b>				
<b>L52</b>	<b>Selected Excavated Granular Fill</b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 90-315mm	m	18500		
<b>L53</b>	<b>Imported Selected Fill</b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 90-315mm	m	5500		
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	1200		
<b>L6</b>	<b>Pipe Wrapping</b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m <sup>2</sup>	650		
<b>L7</b>	<b><u>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</u></b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note:</b> The rate should include pipe and fitting fixing				
<b>L71</b>	<b>Volume n.e 0.5m<sup>3</sup></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	253		
<b>L74</b>	<b>Volume:- 0.5 - 1m<sup>3</sup></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	46		
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**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>CLASS A - TESTING AND SETTING OUT OF WORKS</b>				
	<u>Testing and Commissioning of the Pipeline including flushing and sterilising in accordance with the Specification Clause 5.19 &amp; 5.20</u>				
A260.1	OD400	m	2450		
A260.2	OD315	m	450		
A260.3	OD250	m	3200		
A260.4	OD160	m	5300		
A260.4	OD110	m	5900		
A260.5	OD90	m	5450		
	<u>Method Related Charges</u>				
	The Pipeline will be laid along narrow urban roads with existing active services both on the surface (electricity, etc) and buried (existing community water pipelines, fiber optic cables, etc.) and with limited working space for mechanical excavation equipment.				
	The Contractor's rates shall be deemed to include for any measures necessary to deal with these conditions, provision of access road to work site, liaison with relevant authorities and local residents, payment of any required statutory charges, etc. The Contractor will be required to submit Method Statement for execution of works under these specific conditions for approval prior to execution of the works. These include but are not limited to the following: i. <b>No blasting</b> will be permitted in these areas ii. The Contractor to maintain uninterrupted continuity of water supply in existing pipelines iii. Pedestrian and vehicular Access to individual shops / plots to be maintained at all times iv. Safety hoarding, lighting, bands, warning signs, tapes etc. to be maintained at all times. v. Keeping trenches free of excessive groundwater, seepage or water from any source vi. <b>Trench collapse protection</b> will be required for trenches deeper than 1.5m that are not entirely of stable rock including; shielding (devices designed to protect workers in the event of a collapse, such as trench boxes); shoring (bracing designed to prevent collapse, such as hydraulic shoring or slide-rail systems); and sloping or benching trench walls away from the trench bottom at a safe angle.				
A35.1	Cost relating to the above mentioned specific conditions	Item	L.S		
A35.2	Liaison, facilitation with local residents and relevant authorities and payment for access, accidental damage, temporary access to working spaces during execution of the Works, etc.	Item	L.S		
A35.3	Allow for any other method related charges the tenderer feels may be required. These should be indicated below with pricing for each item (Tenderer may attach additional sheets if necessary)				
	i)	Item	L.S		
	ii)	Item	L.S		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

<b>BILL No. 5 - UTAWALA DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	22750		
	<b>CLASS I - PIPEWORK - PIPES</b>				
<b>I4</b>	<b>STEEL PIPES (External Epoxy Coated and Internal cement mortar lined) - Pressure Rating of PN16</b>				
	<u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Include supply jointing material, bolts, nuts, gaskets etc as applicable.</u>				
2I441.1	Outer Diameter 400mm - not in trenches	m	2450		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
2I442.1	Outer Diameter 400mm in trenches, depth not exceeding 1.5m	m	613		
2I443.1	-Ditto- but depth 1.5m - 2.0m	m	858		
2I444.1	-Ditto- but depth > 2.0m	m	980		
<b>I7</b>	<b>HDPE PIPES - PN16</b>				
	<u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.</u>				
I441.2	Outer Diameter 315mm - not in trenches	m	450		
I431.1	Outer Diameter 250mm - not in trenches	m	3200		
I431.2	Outer Diameter 160mm - not in trenches	m	5300		
I431.2	Outer Diameter 110mm - not in trenches	m	5900		
I431.3	Outer Diameter 90mm - not in trenches	m	5450		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I442.2	Outer Diameter 315mm in trenches, depth not exceeding 1.5m	m	113		
I443.2	-Ditto- but depth 1.5m - 2.0m	m	158		
I444.2	-Ditto- but depth > 2.0m	m	180		
I432.1	Outer Diameter 250mm in trenches, depth not exceeding 1.5m	m	800		
I433.1	-Ditto- but depth 1.5m - 2.0m	m	1120		
I434.1	-Ditto- but depth > 2.0m	m	1280		
I432.2	Outer Diameter 160mm in trenches, depth not exceeding 1.5m	m	1325		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
I433.2	-Ditto- but depth 1.5m - 2.0m	m	1855		
I434.2	-Ditto- but depth > 2.0m	m	2120		
I432.2	Outer Diameter 110mm in trenches, depth not exceeding 1.5m	m	1475		
I433.2	-Ditto- but depth 1.5m - 2.0m	m	2065		
I434.2	-Ditto- but depth > 2.0m	m	2360		
I432.3	Outer Diameter 90mm in trenches, depth not exceeding 1.5m	m	1363		
I433.3	-Ditto- but depth 1.5m - 2.0m	m	1908		
I434.3	-Ditto- but depth > 2.0m	m	2180		
	For <b>River aerial crossings</b> - Supply Steel Pipe sections, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.				
I421.1	Outer Diameter 315mm	m	30		
I421.2	Outer Diameter 250mm	m	30		
I421.3	Outer Diameter 110mm	m	100		
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J3</b>	<b>STEEL FITTINGS (External Epoxy Coated and Internal cement mortar lined) - Pressure Rating of PN16</b> Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J31</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
2J334.1	Outer Diameter 400mm 90° bend	nr	1		
2J334.3	-Ditto- but 22.5° bend	nr	1		
<b>J32</b>	<b>Junctions and Branches</b>				
	<b>All flanged Tee</b>				
2J323.1	Outer Diameter 400mm x 400mm	nr	1		
	<b>Flange Tee for Air Valve</b>				
2J323.11	Outer Diameter 400mm x 80mm	nr	6		
	<b>All Flanged Inverted Tee for Washout)</b>				
2J323.16	Outer Diameter 400mm x 80mm	nr	2		
<b>J33</b>	<b>Tapers</b>				
	<b>All Flanged Concentric Taper</b>				
2J332.1	400 x 315mm	nr	1		
2J323.1	400mm x 110mm	nr	1		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J34</b>	<b><u>Double Collars</u></b>				
	<b><u>Stepped Couplings</u></b>				
2J341.1	Outer Diameter 400mm flange steel/HDPE stepped coupling	nr	1		
2J341.6	Outer Diameter 80mm flange steel/HDPE stepped coupling (For Washout)	nr	1		
	<b><u>Couplings</u></b>				
2J341.1	OD 400	nr	2		
<b>J35</b>	<b><u>Adaptors</u></b>				
	<b><u>Flanged Adaptor</u></b>				
2J351.1	Outer Diameter 400mm flanged adaptor	nr	5		
2J351.10	Outer Diameter 80mm flanged adaptor (for Washout)	nr	2		
2J351.11	Diameter 80mm flanged adaptor (for Air Valve)	nr	6		
<b>J38</b>	<b><u>Straight Specials as specified</u></b>				
	<b><u>Plain Ended Pipes</u></b>				
2J381.1	400mm diameter Plain Ended Pipe piece (1.2m)	nr	2		
2J381.4	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	4		
2J383.1	400mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	12		
2J383.6	400mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	4		
	<b><u>Flanged Spigot Pipes</u></b>				
2J383.9	400mm diameter flanged spigot pipe	nr	2		
	<b><u>All Flanged Pipes</u></b>				
2J383.16	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	6		
<b>J6</b>	<b><u>HDPE FITTINGS - Pressure Rating of PN16</u></b>				
	<u>Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.</u>				
	<u>Note - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
<b>J61</b>	<b><u>Bends</u></b>				
	<b><u>Plain Ended Bends</u></b>				
J611.1	Outer Diameter 315mm 90° bend	nr	1		
J611.3	-Ditto- but 22.5° bend	nr	1		
J613.1	Outer Diameter 250mm 90° bend	nr	6		
J613.3	-Ditto- but 45° bend	nr	2		
J613.7	-Ditto- but 22.5° bend	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J613.4	Outer Diameter 160mm 90° bend	nr	2		
J613.5	-Ditto- but 45° bend	nr	1		
J613.4	Outer Diameter 110mm 45° bend	nr	1		
J613.7	Outer Diameter 90mm 90° bend	nr	4		
J613.8	-Ditto- but 45° bend	nr	3		
J613.9	-Ditto- but 22.5° bend	nr	2		
<b>J62</b>	<b>Junctions and Branches</b>				
	<b>Tees</b>				
J623.1	Outer Diameter 315mm x 250mm	nr	1		
J623.2	Outer Diameter 250mm x 250mm	nr	4		
J623.5	Outer Diameter 250mm x 90mm	nr	6		
J623.8	Outer Diameter 160mm x 160mm	nr	4		
J623.9	Outer Diameter 110mm x 110mm	nr	1		
J623.11	Outer Diameter 90mm x 90mm	nr	3		
	<b>Tees for Air Valve</b>				
J623.12	Outer Diameter 315mm x 80mm	nr	2		
J623.13	Outer Diameter 250mm x 80mm	nr	13		
J623.14	Outer Diameter 160mm x 80mm	nr	4		
J623.15	Outer Diameter 110mm x 80mm	nr	10		
J623.16	Outer Diameter 90mm x 80mm	nr	3		
	<b>Inverted Tee for Washout)</b>				
J623.17	Outer Diameter 315mm x 80mm	nr	1		
J623.18	Outer Diameter 250mm x 80mm	nr	5		
J623.19	Outer Diameter 160mm x 80mm	nr	2		
J623.20	Outer Diameter 110mm x 80mm	nr	6		
J623.21	Outer Diameter 90mm x 80mm	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					



**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J63</b>	<b><u>Tapers</u></b>				
	<b><u>Concentric Taper</u></b>				
J623.1	315mm x 250mm	nr	1		
J623.2	250mm x 160mm	nr	1		
J623.5	250mm x 110mm	nr	1		
J623.8	160mm x 110mm	nr	2		
J623.9	160mm x 90mm	nr	2		
<b>J64</b>	<b><u>Double Collars</u></b>				
	<b><u>Stepped Couplings</u></b>				
J641.1	Outer Diameter 315mm flange steel/HDPE stepped coupling	nr	2		
J641.2	Outer Diameter 250mm flange steel/HDPE stepped coupling	nr	10		
J641.3	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	4		
J641.4	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	10		
J641.5	Outer Diameter 90mm flange steel/HDPE stepped coupling	nr	18		
J641.6	Outer Diameter 80mm flange steel/HDPE stepped coupling (For Washout)	nr	32		
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b><u>Flanged Adaptor</u></b>				
J651.1	Outer Diameter 315mm flanged adaptor	nr	2		
J651.2	Outer Diameter 250mm flanged adaptor	nr	6		
J651.3	Outer Diameter 160mm flanged adaptor	nr	3		
J651.4	Outer Diameter 110mm flanged adaptor	nr	6		
J651.5	Outer Diameter 90mm flanged adaptor	nr	10		
J651.6	Outer Diameter 80mm flanged adaptor (for Washout)	nr	16		
J651.7	Diameter 80mm flanged adaptor (for Air valve)	nr	32		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b><u>Plain Ended Pipes</u></b>				
J682.1	315mm diameter Plain Ended Pipe piece (1.2m)	nr	2		
J682.2	-Ditto- but 250mm	nr	10		
J682.3	-Ditto- but 160mm	nr	4		
J682.4	-Ditto- but 110mm	nr	10		
J682.5	-Ditto- but 90mm	nr	18		
J681.6	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	16		
J681.7	315mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	4		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J681.8	-Ditto- but DN250	nr	26		
J681.9	-Ditto- but DN160	nr	8		
J681.10	-Ditto- but DN110	nr	20		
J681.10	-Ditto- but DN90	nr	6		
J681.11	315mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	2		
J681.12	-Ditto- but DN250	nr	10		
J681.13	-Ditto- but DN160	nr	4		
J681.14	-Ditto- but DN110	nr	12		
J681.15	-Ditto- but DN90	nr	4		
	<b>Flanged Spigot Pipes</b>				
J682.1	315mm diameter flanged spigot pipe	nr	4		
J682.2	-Ditto- but DN250	nr	26		
J682.3	-Ditto- but DN160	nr	8		
J682.4	-Ditto- but DN110	nr	20		
J682.5	-Ditto- but DN90	nr	6		
J682.6	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	16		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	8		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	32		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	8		
J693.2	110mm diameter End Cap	nr	3		
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b>Gate Valves as specified</b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	16		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	16		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	32		
J811.4	Outer Diameter 315mm flanged sluice valve	nr	1		
J811.5	Outer Diameter 250mm flanged sluice valve	nr	5		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J811.6	Outer Diameter 160mm flanged sluice valve	nr	2		
J811.7	Outer Diameter 110mm flanged sluice valve	nr	5		
J811.8	Outer Diameter 90mm flanged sluice valve	nr	9		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	32		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 315	nr	1		
J911.2	OD 250	nr	1		
J911.3	OD 160	nr	1		
J911.4	OD 110	nr	1		
J911.5	OD 90	nr	1		
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.6	DN 80	nr	6		
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries				
	<b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. - Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	70		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	5		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 90-400mm	nr	4		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	455		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	2275		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 90-400mm	m	680		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 90-400mm	m	1250		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b><u>Marker Posts</u></b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	32		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	20		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	16		
<b>K87</b>	<b><u>Washout Outfall structures</u></b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	16		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b>Rate to include carting away and disposal.</b>				
<b>L11</b>	<b><u>In Pipe Trenches and Chambers</u></b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	8200		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	2730		
	<b>Note: - Blasting is NOT permitted for all Items under L1</b>				
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 5 - UTAWALA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>L5</b>	<b><u>Surrounds</u></b>				
<b>L52</b>	<b><u>Selected Excavated Granular Fill</u></b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 90-400mm	m	18200		
<b>L53</b>	<b><u>Imported Selected Fill</u></b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 90-400mm	m	5460		
<b>L54</b>	<b><u>Mass Concrete Surround</u></b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	1150		
<b>L6</b>	<b><u>Pipe Wrapping</u></b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m <sup>2</sup>	380		
<b>L7</b>	<b><u>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</u></b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note;</b> The rate should include pipe and fitting fixing				
<b>L71</b>	<b><u>Volume n.e 0.5m<sup>3</sup></u></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	37		
<b>L74</b>	<b><u>Volume:- 0.5 - 1m<sup>3</sup></u></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	60		
	<b><u>CLASS X - MISCELLANEOUS WORK</u></b>				
	<b><u>Trenchless Road Crossings</u></b>				
X61	Provide all equipment, excavate below road surface in common materials (soil/murram) using trenchless technique (e.g pipe jacking, horizontal drilling etc). The rate to include all preparatory works, any requisite shoring, strutting, installation of pipe casing and necessary grouting and reinstatement. Pipe Outer Diameter 90-400mm.	m	150		
	<b>Note:-</b> All works to be executed in liason with relevant road authorities and rates to include facilitation. <b>The bidder to submit method statement with Bid execution of these works.</b>				
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**BILL No. 6 - RUAI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>CLASS A - TESTING AND SETTING OUT OF WORKS</b>				
	<u>Testing and Commissioning of the Pipeline including flushing and sterilising in accordance with the Specification Clause 5.19 &amp; 5.20</u>				
A260.1	OD250	m	5100		
A260.2	OD200	m	2300		
A260.3	OD160	m	3000		
A260.4	OD110	m	22100		
A260.5	OD90	m	24000		
	<u>Method Related Charges</u>				
	The Pipeline will be laid along narrow urban roads with existing active services both on the surface (electricity, etc) and buried (existing community water pipelines, fiber optic cables, etc.) and with limited working space for mechanical excavation equipment.				
	The Contractor's rates shall be deemed to include for any measures necessary to deal with these conditions, provision of access road to work site, liaison with relevant authorities and local residents, payment of any required statutory charges, etc. The Contractor will be required to submit Method Statement for execution of works under these specific conditions for approval prior to execution of the works. These include but are not limited to the following: i. <b>No blasting</b> will be permitted in these areas ii. The Contractor to maintain uninterrupted continuity of water supply in existing pipelines iii. Pedestrian and vehicular Access to individual shops / plots to be maintained at all times iv. Safety hoarding, lighting, bands, warning signs, tapes etc. to be maintained at all times. v. Keeping trenches free of excessive groundwater, seepage or water from any source vi. <b>Trench collapse protection</b> will be required for trenches deeper than 1.5m that are not entirely of stable rock including; shielding (devices designed to protect workers in the event of a collapse, such as trench boxes); shoring (bracing designed to prevent collapse, such as hydraulic shoring or slide-rail systems); and sloping or benching trench walls away from the trench bottom at a safe angle.				
A35.1	Cost relating to the above mentioned specific conditions	Item	L.S		
A35.2	Liaison, facilitation with local residents and relevant authorities and payment for access, accidental damage, temporary access to working spaces during execution of the Works, etc.	Item	L.S		
A35.3	Allow for any other method related charges the tenderer feels may be required. These should be indicated below with pricing for each item (Tenderer may attach additional sheets if necessary)				
	i)	Item	L.S		
	ii)	Item	L.S		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					



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**BILL No. 6 - RUAI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	For <b>River aerial crossings</b> - Supply Steel Pipe sections, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.				
I421.1	Outer Diameter 250mm	m	50		
I421.2	Outer Diameter 110mm	m	300		
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b>				
	Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
J611.1	Outer Diameter 250mm 90° bend	nr	7		
J611.2	-Ditto- but 45° bend	nr	2		
J611.3	-Ditto- but 22.5° bend	nr	2		
J613.1	Outer Diameter 200mm 90° bend	nr	3		
J613.2	-Ditto- but 22.5° bend	nr	4		
J613.3	Outer Diameter 160mm 90° bend	nr	2		
J613.4	-Ditto- but 45° bend	nr	2		
J613.5	Outer Diameter 110mm 90° bend	nr	14		
J613.6	-Ditto- but 45° bend	nr	45		
J613.7	-Ditto- but 22.5° bend	nr	14		
J613.8	Outer Diameter 90mm 90° bend	nr	13		
J613.9	-Ditto- but 45° bend	nr	20		
J613.10	-Ditto- but 22.5° bend	nr	14		
<b>J62</b>	<b>Junctions and Branches</b>				
	<b>Tees</b>				
J623.1	Outer Diameter 250mm x 200mm	nr	2		
J623.2	Outer Diameter 250mm x 110mm	nr	1		
J623.3	Outer Diameter 250mm x 90mm	nr	2		
J623.4	Outer Diameter 200mm x 200mm	nr	2		
J623.5	Outer Diameter 160mm x 160mm	nr	3		
J623.6	Outer Diameter 160mm x 110mm	nr	2		
J623.7	Outer Diameter 160mm x 90mm	nr	1		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 6 - RUAI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J623.8	Outer Diameter 110mm x 110mm	nr	14		
J623.9	Outer Diameter 110mm x 90mm	nr	16		
	<b>Tees for Air Valve</b>				
J623.10	Outer Diameter 250mm x 80mm	nr	17		
J623.11	Outer Diameter 200mm x 80mm	nr	10		
J623.12	Outer Diameter 160mm x 80mm	nr	7		
J623.13	Outer Diameter 110mm x 80mm	nr	55		
J623.14	Outer Diameter 90mm x 80mm	nr	8		
	<b>Inverted Tee for Washout)</b>				
J623.15	Outer Diameter 250mm x 80mm	nr	10		
J623.16	Outer Diameter 200mm x 80mm	nr	5		
J623.17	Outer Diameter 160mm x 80mm	nr	4		
J623.18	Outer Diameter 110mm x 80mm	nr	44		
J623.19	Outer Diameter 90mm x 80mm	nr	8		
<b>J63</b>	<b><u>Tapers</u></b>				
	<b><u>Concentric Taper</u></b>				
J632.1	250 x 200mm	nr	1		
J632.2	200 x 160mm	nr	1		
J632.3	200 x 110mm	nr	1		
J632.4	160 x 110mm	nr	3		
J632.5	160 x 90mm	nr	1		
J632.6	110 x 90mm	nr	8		
J632.7	110 x 63mm	nr	1		
<b>J64</b>	<b><u>Double Collars</u></b>				
	<b><u>Stepped Couplings</u></b>				
J641.1	Outer Diameter 250mm flange steel/HDPE stepped coupling	nr	6		
J641.2	Outer Diameter 200mm flange steel/HDPE stepped coupling	nr	8		
J641.3	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	10		
J641.4	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	62		
J641.5	Outer Diameter 90mm flange steel/HDPE stepped coupling	nr	4		
J641.6	Outer Diameter 80mm flange steel/HDPE stepped coupling (For Washout)	nr	142		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 6 - RUAI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b>Flanged Adaptor</b>				
J651.1	Outer Diameter 250mm flanged adaptor	nr	4		
J651.2	Outer Diameter 200mm flanged adaptor	nr	5		
J651.3	Outer Diameter 160mm flanged adaptor	nr	6		
J651.4	Outer Diameter 110mm flanged adaptor	nr	40		
J651.5	Outer Diameter 90mm flanged adaptor	nr	3		
J651.6	Outer Diameter 80mm flanged adaptor (for Washout)	nr	61		
J651.7	Diameter 80mm flanged adaptor (for Air valve)	nr	97		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b>Plain Ended Pipes</b>				
J682.1	250mm diameter Plain Ended Pipe piece (1.2m)	nr	6		
J682.2	-Ditto- but 200mm	nr	8		
J682.3	-Ditto- but 160mm	nr	10		
J682.4	-Ditto- but 110mm	nr	78		
J682.5	-Ditto- but 90mm	nr	4		
J681.6	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	61		
J681.7	250mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	34		
J681.8	-Ditto- but DN200	nr	20		
J681.9	-Ditto- but DN160	nr	14		
J681.10	-Ditto- but DN110	nr	110		
J681.11	-Ditto- but DN90	nr	16		
J681.12	250mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	20		
J681.13	-Ditto- but DN200	nr	10		
J681.14	-Ditto- but DN160	nr	8		
J681.15	-Ditto- but DN110	nr	88		
J681.16	-Ditto- but DN90	nr	16		
	<b>Flanged Spigot Pipes</b>				
J682.1	250mm diameter flanged spigot pipe	nr	34		
J682.2	-Ditto- but DN200	nr	20		
J682.3	-Ditto- but DN160	nr	14		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 6 - RUAI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J682.4	-Ditto- but DN110	nr	110		
J682.5	-Ditto- but DN90	nr	16		
J682.6	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	61		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	31		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	97		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	31		
J693.2	110mm diameter End Cap	nr	2		
J693.3	90mm diameter End Cap	nr	1		
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	71		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	71		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	97		
J811.4	Outer Diameter 250mm flanged sluice valve	nr	3		
J811.5	Outer Diameter 200mm flanged sluice valve	nr	4		
J811.6	Outer Diameter 160mm flanged sluice valve	nr	5		
J811.7	Outer Diameter 110mm flanged sluice valve	nr	39		
J811.8	Outer Diameter 90mm flanged sluice valve	nr	2		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	77		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 250	nr	1		
J911.2	OD 200	nr	1		
J911.3	OD 160	nr	1		
J911.4	OD 110	nr	1		
J911.5	OD 90	nr	1		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 6 - RUAI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.6	DN 80	nr	18		
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries  <b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. - Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	190		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	5		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 90-250mm	nr	3		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	2100		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	5000		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 90-250mm	m	2100		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 90-250mm	m	1500		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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**BILL No. 6 - RUAI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	3000		
<b>L6</b>	<b>Pipe Wrapping</b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m <sup>2</sup>	600		
<b>L7</b>	<b>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note</b> ; The rate should include pipe and fitting fixing				
<b>L71</b>	<b>Volume n.e 0.5m<sup>3</sup></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	295		
<b>L74</b>	<b>Volume:- 0.5 - 1m<sup>3</sup></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	74		
	<b>CLASS X - MISCELLANEOUS WORK</b>				
	<u>Trenchless Road Crossings</u>				
X61	Provide all equipment, excavate below road surface in common materials (soil/murram) using trenchless technique (e.g pipe jacking, horizontal drilling etc). The rate to include all preparatory works, any requisite shoring, strutting, installation of pipe casing and necessary grouting and reinstatement. Pipe Outer Diameter 90-250mm.	m	200		
	<b>Note</b> :- All works to be executed in liason with relevant road authorities and rates to include facilitation. <b>The bidder to submit method statement with Bid execution of these works.</b>				
X62	Extra over road crossing item X61 above for excavation/drilling in rock	m <sup>3</sup>	30		
X63	Allow for any method related charges the bidder feels may be required in carrying out works for trechless pipe crosssing under roads for items X61 & X62 above. These must be indicated below and pricing of each item provided (Separate additional sheet may be attached if necessary)	Item			
	i)				
	ii)				
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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>CLASS A - TESTING AND SETTING OUT OF WORKS</b>				
	<u>Testing and Commissioning of the Pipeline including flushing and sterlising in accordance with the Specification Clause 5.19 &amp; 5.20</u>				
A260.1	OD315	m	3400		
A260.2	OD250	m	1400		
A260.3	OD160	m	3200		
A260.3	OD110	m	4100		
A260.4	OD90	m	2000		
A260.5	OD63	m	20700		
	<u>Method Related Charges</u>				
	The Pipeline will be laid along narrow urban roads with existing active services both on the surface (electricity, etc) and buried (existing community water pipelines, fiber optic cables, etc.) and with limited working space for mechanical excavation equipment.				
	The Contractor's rates shall be deemed to include for any measures necessary to deal with these conditions, provision of access road to work site, liaison with relevant authorities and local residents, payment of any required statutory charges, etc. The Contractor will be required to submit Method Statement for execution of works under these specific conditions for approval prior to execution of the works. These include but are not limited to the following: i. <b>No blasting</b> will be permitted in these areas ii. The Contactor to maintain uninterrupted continuity of water supply in existing pipelines iii. Pedestrian and vehicular Access to individual shops / plots to be maintained at all times iv. Safety hoarding, lighting, bands, warning signs, tapes etc. to be maintained at all times. v. Keeping trenches free of excessive groundwater, seepage or water from any source vi. <b>Trench collapse protection</b> will be required for trenches deeper than 1.5m that are not entirely of stable rock including; shielding (devices designed to protect workers in the event of a collapse, such as trench boxes); shoring (bracing designed to prevent collapse, such as hydraulic shoring or slide-rail systems); and sloping or benching trench walls away from the trench bottom at a safe angle.				
A35.1	Cost relating to the above mentioned specific conditions	Item	L.S		
A35.2	Liaison, facilitation with local residents and relevant authorities and payment for access, accidental damage, temporary access to working spaces during execution of the Works, etc.	Item	L.S		
A35.3	Allow for any other method related charges the tenderer feels may be required. These should be indicated below with pricing for each item (Tenderer may attach additional sheets if necessary)				
	i)	Item	L.S		
	ii)	Item	L.S		
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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	34800		
	<b>CLASS I - PIPEWORK - PIPES</b>				
<b>I7</b>	<b>HDPE PIPES - PN16</b>				
	<u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.</u>				
I441.1	Outer Diameter 315mm - not in trenches	m	3400		
I441.2	Outer Diameter 250mm - not in trenches	m	1400		
I431.1	Outer Diameter 160mm - not in trenches	m	3200		
I431.2	Outer Diameter 110mm - not in trenches	m	4100		
I431.3	Outer Diameter 90mm - not in trenches	m	2000		
I431.4	Outer Diameter 63mm - not in trenches	m	20700		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I442.1	Outer Diameter 315mm in trenches, depth not exceeding 1.5m	m	850		
I443.1	-Ditto- but depth 1.5m - 2.0m	m	1190		
I444.1	-Ditto- but depth > 2.0m	m	1360		
I442.2	Outer Diameter 250mm in trenches, depth not exceeding 1.5m	m	350		
I443.2	-Ditto- but depth 1.5m - 2.0m	m	490		
I444.2	-Ditto- but depth > 2.0m	m	560		
I432.1	Outer Diameter 160mm in trenches, depth not exceeding 1.5m	m	800		
I433.1	-Ditto- but depth 1.5m - 2.0m	m	1120		
I434.1	-Ditto- but depth > 2.0m	m	1280		
I432.2	Outer Diameter 110mm in trenches, depth not exceeding 1.5m	m	1025		
I433.2	-Ditto- but depth 1.5m - 2.0m	m	1435		
I434.2	-Ditto- but depth > 2.0m	m	1640		
I432.3	Outer Diameter 90mm in trenches, depth not exceeding 1.5m	m	500		
I433.3	-Ditto- but depth 1.5m - 2.0m	m	700		
I434.3	-Ditto- but depth > 2.0m	m	800		
I432.3	Outer Diameter 63mm in trenches, depth not exceeding 1.5m	m	5175		
I433.3	-Ditto- but depth 1.5m - 2.0m	m	7245		
I434.3	-Ditto- but depth > 2.0m	m	8280		
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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	For <b>River aerial crossings</b> - Supply Steel Pipe sections, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.				
I421.1	Outer Diameter 315mm	m	700		
I421.2	Outer Diameter 250mm	m	100		
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b>				
	Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
J613.1	Outer Diameter 250mm 22.5° bend	nr	4		
J613.2	Outer Diameter 160mm 22.5° bend	nr	3		
J613.3	Outer Diameter 110mm 90° bend	nr	3		
J613.4	-Ditto- but 45° bend	nr	4		
J613.5	-Ditto- but 22.5° bend	nr	4		
J613.6	Outer Diameter 90mm 90° bend	nr	2		
J613.7	-Ditto- but 45° bend	nr	3		
J613.8	-Ditto- but 22.5° bend	nr	2		
J613.9	Outer Diameter 63mm 90° bend	nr	12		
J613.10	-Ditto- but 45° bend	nr	8		
<b>J62</b>	<b>Junctions and Branches</b>				
	<b>Tees</b>				
J623.1	Outer Diameter 315mm x 160mm	nr	1		
J623.2	Outer Diameter 250mm x 160mm	nr	1		
J623.3	Outer Diameter 250mm x 110mm	nr	2		
J623.4	Outer Diameter 160mm x 90mm	nr	1		
J623.5	Outer Diameter 160mm x 63mm	nr	16		
J623.6	Outer Diameter 110mm x 110mm	nr	2		
J623.7	Outer Diameter 110mm x 90mm	nr	2		
J623.8	Outer Diameter 110mm x 63mm	nr	2		
J623.9	Outer Diameter 90mm x 90mm	nr	3		
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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J623.10	Outer Diameter 63mm x 63mm	nr	37		
	<b>Tees for Air Valve</b>				
J623.11	Outer Diameter 315mm x 80mm	nr	1		
J623.12	Outer Diameter 250mm x 80mm	nr	3		
J623.13	Outer Diameter 160mm x 80mm	nr	12		
J623.14	Outer Diameter 110mm x 80mm	nr	14		
J623.15	Outer Diameter 90mm x 80mm	nr	6		
	<b>Inverted Tee for Washout)</b>				
J623.16	Outer Diameter 315mm x 80mm	nr	2		
J623.17	Outer Diameter 250mm x 80mm	nr	2		
J623.18	Outer Diameter 160mm x 80mm	nr	7		
J623.19	Outer Diameter 110mm x 80mm	nr	9		
J623.20	Outer Diameter 90mm x 80mm	nr	5		
<b>J63</b>	<b><u>Tapers</u></b>				
	<b><u>Concentric Taper</u></b>				
J632.1	315 x 250mm	nr	1		
J632.2	250 x 110mm	nr	1		
J632.3	160 x 110mm	nr	1		
J632.4	160 x 63mm	nr	1		
J632.5	110 x 90mm	nr	2		
J632.6	110 x 63mm	nr	4		
J632.7	90 x 63mm	nr	2		
<b>J64</b>	<b><u>Double Collars</u></b>				
	<b><u>Stepped Couplings</u></b>				
J641.1	Outer Diameter 315mm flange steel/HDPE stepped coupling	nr	2		
J641.2	Outer Diameter 250mm flange steel/HDPE stepped coupling	nr	4		
J641.3	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	12		
J641.4	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	16		
J641.5	Outer Diameter 90mm flange steel/HDPE stepped coupling	nr	16		
J641.6	Outer Diameter 80mm flange steel/HDPE stepped coupling (For Washout)	nr	50		
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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b>Flanged Adaptor</b>				
J651.1	Outer Diameter 315mm flanged adaptor	nr	2		
J651.2	Outer Diameter 250mm flanged adaptor	nr	3		
J651.3	Outer Diameter 160mm flanged adaptor	nr	7		
J651.4	Outer Diameter 110mm flanged adaptor	nr	9		
J651.5	Outer Diameter 90mm flanged adaptor	nr	9		
J651.6	Outer Diameter 80mm flanged adaptor (for Washout)	nr	23		
J651.7	Diameter 80mm flanged adaptor (for Air valve)	nr	36		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b>Plain Ended Pipes</b>				
J682.1	315mm diameter Plain Ended Pipe piece (1.2m)	nr	2		
J682.2	-Ditto- but 250mm	nr	4		
J682.3	-Ditto- but 160mm	nr	12		
J682.4	-Ditto- but 110mm	nr	16		
J682.5	-Ditto- but 90mm	nr	16		
J681.6	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	23		
J681.7	250mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	2		
J681.8	-Ditto- but DN200	nr	6		
J681.9	-Ditto- but DN160	nr	24		
J681.10	-Ditto- but DN110	nr	28		
J681.10	-Ditto- but DN90	nr	12		
J681.11	250mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	4		
J681.12	-Ditto- but DN200	nr	4		
J681.13	-Ditto- but DN160	nr	14		
J681.14	-Ditto- but DN110	nr	18		
J681.15	-Ditto- but DN90	nr	10		
	<b>Flanged Spigot Pipes</b>				
J682.1	250mm diameter flanged spigot pipe	nr	2		
J682.2	-Ditto- but DN200	nr	6		
J682.3	-Ditto- but DN160	nr	24		
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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J682.4	-Ditto- but DN110	nr	28		
J682.5	-Ditto- but DN90	nr	12		
J682.6	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	23		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	12		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	36		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	12		
J693.2	110mm diameter End Cap	nr	1		
J693.3	63mm diameter End Cap	nr	2		
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	25		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	25		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	36		
J811.4	Outer Diameter 315mm flanged sluice valve	nr	1		
J811.5	Outer Diameter 250mm flanged sluice valve	nr	2		
J811.6	Outer Diameter 160mm flanged sluice valve	nr	6		
J811.7	Outer Diameter 110mm flanged sluice valve	nr	8		
J811.8	Outer Diameter 90mm flanged sluice valve	nr	2		
J811.9	Outer Diameter 63mm flanged sluice valve	nr	8		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	36		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 315	nr	1		
J911.2	OD 250	nr	1		
J911.3	OD 160	nr	1		
J911.4	OD 110	nr	1		
J911.5	OD 90	nr	1		
J911.6	OD 63	nr	3		
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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.7	DN 80	nr	12		
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries  <b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. - Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	113		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	8		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 63-315mm	nr	3		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	1100		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	2000		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murrum road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 63-315mm	m	1650		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 63-315mm	m	1000		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					



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**BILL No. 7 - KAMULU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	1700		
<b>L6</b>	<b>Pipe Wrapping</b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m <sup>2</sup>	1000		
<b>L7</b>	<b>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note</b> ; The rate should include pipe and fitting fixing				
<b>L71</b>	<b>Volume n.e 0.5m<sup>3</sup></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	158		
<b>L74</b>	<b>Volume:- 0.5 - 1m<sup>3</sup></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	27		
	<b>CLASS X - MISCELLANEOUS WORK</b>				
	<b>Trenchless Road Crossings</b>				
X61	Provide all equipment, excavate below road surface in common materials (soil/murram) using trenchless technique (e.g pipe jacking, horizontal drilling etc). The rate to include all preparatory works, any requisite shoring, strutting, installation of pipe casing and necessary grouting and reinstatement. Pipe Outer Diameter 63-315mm <b>Note</b> :- All works to be executed in liason with relevant road authorities and rates to include facilitation. <b>The bidder to submit method statement with Bid execution of these works.</b>	m	100		
X62	Extra over road crossing item X61 above for excavation/drilling in rock	m <sup>3</sup>	15		
X63	Allow for any method related charges the bidder feels may be required in carrying out works for trechless pipe crosssing under roads for items X61 & X62 above. These must be indicated below and pricing of each item provided (Separate additional sheet may be attached if necessary)	Item			
	i)				
	ii)				
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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BILL No. 8 - NG'UNDU DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>CLASS A - TESTING AND SETTING OUT OF WORKS</b>				
	Testing and Commissioning of the Pipeline including flushing and sterilising in accordance with the Specification Clause 5.19 & 5.20				
A260.1	OD200	m	1600		
A260.2	OD160	m	1200		
A260.3	OD110	m	4150		
A260.4	OD90	m	6600		
A260.5	OD63	m	10000		
	Method Related Charges				
	The Pipeline will be laid along narrow urban roads with existing active services both on the surface (electricity, etc) and buried (existing community water pipelines, fiber optic cables, etc.) and with limited working space for mechanical excavation equipment.				
	The Contractor's rates shall be deemed to include for any measures necessary to deal with these conditions, provision of access road to work site, liaison with relevant authorities and local residents, payment of any required statutory charges, etc. The Contractor will be required to submit Method Statement for execution of works under these specific conditions for approval prior to execution of the works. These include but are not limited to the following: i. <b>No blasting</b> will be permitted in these areas ii. The Contractor to maintain uninterrupted continuity of water supply in existing pipelines iii. Pedestrian and vehicular Access to individual shops / plots to be maintained at all times iv. Safety hoarding, lighting, bands, warning signs, tapes etc. to be maintained at all times. v. Keeping trenches free of excessive groundwater, seepage or water from any source vi. <b>Trench collapse protection</b> will be required for trenches deeper than 1.5m that are not entirely of stable rock including; shielding (devices designed to protect workers in the event of a collapse, such as trench boxes); shoring (bracing designed to prevent collapse, such as hydraulic shoring or slide-rail systems); and sloping or benching trench walls away from the trench bottom at a safe angle.				
A35.1	Cost relating to the above mentioned specific conditions	Item	L.S		
A35.2	Liaison, facilitation with local residents and relevant authorities and payment for access, accidental damage, temporary access to working spaces during execution of the Works, etc.	Item	L.S		
A35.3	Allow for any other method related charges the tenderer feels may be required. These should be indicated below with pricing for each item (Tenderer may attach additional sheets if necessary)				
	i)	Item	L.S		
	ii)	Item	L.S		
PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET					

BILL No. 8 - NG'UNDU DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
A36	Setting Out and As Built Drawings				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	23550		
	<b>CLASS I - PIPEWORK - PIPES</b>				
I7	<b>HDPE PIPES - PN16</b>				
	<u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.</u>				
I441.1	Outer Diameter 200mm - not in trenches	m	1600		
I441.2	Outer Diameter 160mm - not in trenches	m	1200		
I431.2	Outer Diameter 110mm - not in trenches	m	4150		
I431.3	Outer Diameter 90mm - not in trenches	m	6600		
I431.3	Outer Diameter 63mm - not in trenches	m	10000		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I442.1	Outer Diameter 200mm in trenches, depth not exceeding 1.5m	m	400		
I443.1	-Ditto- but depth 1.5m - 2.0m	m	560		
I444.1	-Ditto- but depth > 2.0m	m	640		
I442.2	Outer Diameter 160mm in trenches, depth not exceeding 1.5m	m	300		
I443.2	-Ditto- but depth 1.5m - 2.0m	m	420		
I444.2	-Ditto- but depth > 2.0m	m	480		
I432.2	Outer Diameter 110mm in trenches, depth not exceeding 1.5m	m	1038		
I433.2	-Ditto- but depth 1.5m - 2.0m	m	1453		
I434.2	-Ditto- but depth > 2.0m	m	1660		
I432.3	Outer Diameter 90mm in trenches, depth not exceeding 1.5m	m	1650		
I433.3	-Ditto- but depth 1.5m - 2.0m	m	2310		
I434.3	-Ditto- but depth > 2.0m	m	2640		
I432.3	Outer Diameter 63mm in trenches, depth not exceeding 1.5m	m	2500		
I433.3	-Ditto- but depth 1.5m - 2.0m	m	3500		
I434.3	-Ditto- but depth > 2.0m	m	4000		
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BILL No. 8 - NG'UNDU DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	For <b>River aerial crossings</b> - Supply Steel Pipe sections, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.				
I421.1	Outer Diameter 110mm	m	30		
I421.2	Outer Diameter 90mm	m	90		
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b>				
	Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
J613.2	Outer Diameter 200mm 45° bend	nr	1		
J613.2	Outer Diameter 160mm 45° bend	nr	2		
J613.4	Outer Diameter 110mm 90° bend	nr	3		
J613.5	-Ditto- but 45° bend	nr	8		
J613.6	-Ditto- but 22.5° bend	nr	4		
J613.7	Outer Diameter 90mm 90° bend	nr	4		
J613.8	-Ditto- but 45° bend	nr	2		
J613.7	Outer Diameter 63mm 90° bend	nr	6		
J613.8	-Ditto- but 45° bend	nr	10		
<b>J62</b>	<b>Junctions and Branches</b>				
	<b>Tees</b>				
J623.1	Outer Diameter 200mm x 200mm	nr	1		
J623.2	Outer Diameter 200mm x 90mm	nr	1		
J623.3	Outer Diameter 200mm x 63mm	nr	4		
J623.4	Outer Diameter 160mm x 63mm	nr	1		
J623.5	Outer Diameter 110mm x 110mm	nr	9		
J623.6	Outer Diameter 110mm x 63mm	nr	9		
J623.6	Outer Diameter 90mm x 63mm	nr	4		
J623.6	Outer Diameter 63mm x 63mm	nr	6		
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BILL No. 8 - NG'UNDU DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>Tees for Air Valve</b>				
J623.12	Outer Diameter 200mm x 80mm	nr	6		
J623.13	Outer Diameter 160mm x 80mm	nr	5		
J623.14	Outer Diameter 110mm x 80mm	nr	15		
	<b>Inverted Tee for Washout)</b>				
J623.18	Outer Diameter 200mm x 80mm	nr	3		
J623.19	Outer Diameter 160mm x 80mm	nr	3		
J623.20	Outer Diameter 110mm x 80mm	nr	22		
<b>J63</b>	<b>Tapers</b>				
	<b>Concentric Taper</b>				
J632.1	200 x 160mm	nr	1		
J632.2	200 x 110mm	nr	1		
J632.3	160 x 110mm	nr	1		
J632.5	110 x 90mm	nr	3		
J632.3	110 x 63mm	nr	5		
<b>J64</b>	<b>Double Collars</b>				
	<b>Stepped Couplings</b>				
J641.2	Outer Diameter 200mm flange steel/HDPE stepped coupling	nr	6		
J641.3	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	2		
J641.4	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	20		
J641.5	Outer Diameter 90mm flange steel/HDPE stepped coupling	nr	8		
J641.6	Outer Diameter 80mm flange steel/HDPE stepped coupling (For Washout)	nr	56		
<b>J65</b>	<b>Adaptors</b>				
	<b>Flanged Adaptor</b>				
J651.2	Outer Diameter 200mm flanged adaptor	nr	4		
J651.3	Outer Diameter 160mm flanged adaptor	nr	2		
J651.4	Outer Diameter 110mm flanged adaptor	nr	11		
J651.5	Outer Diameter 90mm flanged adaptor	nr	5		
J651.6	Outer Diameter 80mm flanged adaptor (for Washout)	nr	28		
PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET					

BILL No. 8 - NG'UNDU DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J651.7	Diameter 80mm flanged adaptor (for Air valve)	nr	26		
<b>J68</b>	<b>Straight Specials as specified</b>				
	<b>Plain Ended Pipes</b>				
J682.2	200mm diameter Plain Ended Pipe piece (1.2m)	nr	6		
J682.3	-Ditto- but 160mm	nr	2		
J682.4	-Ditto- but 110mm	nr	20		
J682.5	-Ditto- but 90mm	nr	8		
J681.6	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	28		
J681.7	200mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	12		
J681.8	-Ditto- but DN160	nr	10		
J681.9	-Ditto- but DN110	nr	30		
J681.12	200mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	6		
J681.13	-Ditto- but DN160	nr	6		
J681.14	-Ditto- but DN110	nr	44		
	<b>Flanged Spigot Pipes</b>				
J682.1	200mm diameter flanged spigot pipe	nr	12		
J682.2	-Ditto- but DN160	nr	10		
J682.3	-Ditto- but DN110	nr	30		
J682.6	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	28		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	14		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	26		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	14		
J693.2	63mm diameter End Cap	nr	10		
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BILL No. 8 - NG'UNDU DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J8	VALVES AND PENSTOCKS				
J81	<u>Gate Valves as specified</u>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	28		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	28		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	26		
J811.5	Outer Diameter 200mm flanged sluice valve	nr	3		
J811.6	Outer Diameter 160mm flanged sluice valve	nr	1		
J811.7	Outer Diameter 110mm flanged sluice valve	nr	10		
J811.8	Outer Diameter 90mm flanged sluice valve	nr	2		
J811.8	Outer Diameter 63mm flanged sluice valve	nr	4		
J86	<u>Air Valves as specified</u>				
J861	Nominal Diameter 80mm Combination air valve	nr	26		
J91	<u>Flanged Water Meters</u>				
J911.2	OD 200	nr	1		
J911.3	OD 160	nr	1		
J911.4	OD 110	nr	1		
J911.5	OD 90	nr	1		
J911.5	OD 63	nr	1		
J93	<u>Fire Hydrant</u>				
J911.6	DN 80	nr	8		
	<u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries				
	<b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. - Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
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<b>BILL No. 8 - NG'UNDU DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	102		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	5		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 63-200mm	nr	4		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	850		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	1000		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 63-200mm	m	1250		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 63-200mm	m	1000		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b>Marker Posts</b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	26		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

<b>BILL No. 8 - NG'UNDU DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	32		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	28		
<b>K87</b>	<b>Washout Outfall structures</b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	28		
	<b>CLASS L - PIPEWORK SUPPORTS AND PROTECTION.</b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b><u>Rate to include carting away and disposal.</u></b>				
<b>L11</b>	<b>In Pipe Trenches and Chambers</b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	8500		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	3000		
	<b>Note: - Blasting is NOT permitted for all Items under L1</b>				
<b>L5</b>	<b>Surrounds</b>				
<b>L52</b>	<b>Selected Excavated Granular Fill</b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 63-200mm	m	19000		
<b>L53</b>	<b>Imported Selected Fill</b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 63-200mm	m	3600		
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	1200		
<b>L6</b>	<b>Pipe Wrapping</b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m <sup>2</sup>	320		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

<b>BILL No. 8 - NG'UNDU DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
L7	<b><u>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</u></b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note;</b> The rate should include pipe and fitting fixing				
L71	<b>Volume n.e 0.5m<sup>3</sup></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	112		
L74	<b>Volume:- 0.5 - 1m<sup>3</sup></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	28		
	<b><u>CLASS X - MISCELLANEOUS WORK</u></b>				
	<b><u>Trenchless Road Crossings</u></b>				
X61	Provide all equipment, excavate below road surface in common materials (soil/murram) using trenchless technique (e.g pipe jacking, horizontal drilling etc). The rate to include all preparatory works, any requisite shoring, strutting, installation of pipe casing and necessary grouting and reinstatement. Pipe Outer Diameter 63-200mm.	m	150		
	<b>Note:-</b> All works to be executed in liason with relevant road authorities and rates to include facilitation. <b>The bidder to submit method statement with Bid execution of these works.</b>				
X62	Extra over road crossing item X61 above for excavation/drilling in rock	m <sup>3</sup>	23		
X63	Allow for any method related charges the bidder feels may be required in carrying out works for trechless pipe crosssing under roads for items X61 & X62 above. These must be indicated below and pricing of each item provided (Separate additional sheet may be attached if necessary)	Item			
	i)				
	ii)				
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BILL No. 9 - NJIRU DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	For <b>River aerial crossings</b> - Supply Steel Pipe sections, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.				
I421.1	Outer Diameter 200mm	m	30		
I421.2	Outer Diameter 110mm	m	60		
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b>				
	Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.				
	<b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
J613.1	Outer Diameter 250mm 45° bend	nr	1		
J613.2	Outer Diameter 200mm 45° bend	nr	2		
J613.3	Outer Diameter 160mm 90° bend	nr	3		
J613.4	-Ditto- but 45° bend	nr	8		
J613.5	-Ditto- but 22.5° bend	nr	4		
J613.6	Outer Diameter 110mm 90° bend	nr	4		
J613.7	-Ditto- but 45° bend	nr	2		
J613.8	Outer Diameter 90mm 90° bend	nr	6		
J613.9	-Ditto- but 45° bend	nr	10		
<b>J62</b>	<b>Junctions and Branches</b>				
	<b>Tees</b>				
J623.1	Outer Diameter 250mm x 250mm	nr	1		
J623.2	Outer Diameter 200mm x 110mm	nr	1		
J623.3	Outer Diameter 200mm x 90mm	nr	2		
J623.4	Outer Diameter 160mm x 110mm	nr	2		
J623.5	Outer Diameter 110mm x 110mm	nr	3		
J623.6	Outer Diameter 110mm x 90mm	nr	3		
J623.7	Outer Diameter 90mm x 90mm	nr	4		
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**BILL No. 9 - NJIRU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>Tees for Air Valve</b>				
J623.8	Outer Diameter 200mm x 80mm	nr	4		
J623.9	Outer Diameter 160mm x 80mm	nr	6		
J623.10	Outer Diameter 110mm x 80mm	nr	8		
	<b>Inverted Tee for Washout)</b>				
J623.11	Outer Diameter 200mm x 80mm	nr	3		
J623.12	Outer Diameter 160mm x 80mm	nr	5		
J623.13	Outer Diameter 110mm x 80mm	nr	4		
<b>J63</b>	<b><u>Tapers</u></b>				
	<b><u>Concentric Taper</u></b>				
J632.1	250 x 200mm	nr	1		
J632.2	160 x 110mm	nr	1		
J632.3	110 x 90mm	nr	1		
<b>J64</b>	<b><u>Double Collars</u></b>				
	<b><u>Stepped Couplings</u></b>				
J641.1	Outer Diameter 250mm flange steel/HDPE stepped coupling	nr	2		
J641.2	Outer Diameter 200mm flange steel/HDPE stepped coupling	nr	4		
J641.3	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	2		
J641.4	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	8		
J641.5	Outer Diameter 90mm flange steel/HDPE stepped coupling	nr	24		
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b><u>Flanged Adaptor</u></b>				
J651.1	Outer Diameter 250mm flanged adaptor	nr	2		
J651.2	Outer Diameter 200mm flanged adaptor	nr	3		
J651.3	Outer Diameter 160mm flanged adaptor	nr	2		
J651.4	Outer Diameter 110mm flanged adaptor	nr	4		
	Outer Diameter 90mm flanged adaptor	nr	5		
J651.5	Outer Diameter 80mm flanged adaptor (for Washout)	nr	12		
J651.6	Diameter 80mm flanged adaptor (for Air valve)	nr	18		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b><u>Plain Ended Pipes</u></b>				
J682.1	250mm diameter Plain Ended Pipe piece (1.2m)	nr	2		
J682.2	-Ditto- but 200mm	nr	4		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 9 - NJIRU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J682.3	-Ditto- but 160mm	nr	2		
J682.4	-Ditto- but 110mm	nr	6		
J682.5	-Ditto- but 90mm	nr	8		
J681.6	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	12		
J681.7	200mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	8		
J681.8	-Ditto- but DN160	nr	12		
J681.9	-Ditto- but DN110	nr	16		
J681.10	200mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	6		
J681.11	-Ditto- but DN160	nr	10		
J681.12	-Ditto- but DN110	nr	8		
	<b>Flanged Spigot Pipes</b>				
J682.1	200mm diameter flanged spigot pipe	nr	8		
J682.2	-Ditto- but DN160	nr	12		
J682.3	-Ditto- but DN110	nr	16		
J682.4	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	12		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	6		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	18		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	6		
J693.2	110mm diameter End Cap	nr	2		
J693.3	90mm diameter End Cap	nr	2		
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	12		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	12		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	18		
J811.4	Outer Diameter 250mm flanged sluice valve	nr	1		
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**BILL No. 9 - NJIRU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J811.5	Outer Diameter 200mm flanged sluice valve	nr	2		
J811.6	Outer Diameter 160mm flanged sluice valve	nr	1		
J811.7	Outer Diameter 110mm flanged sluice valve	nr	3		
J811.8	Outer Diameter 90mm flanged sluice valve	nr	4		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	18		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 250	nr	1		
J911.2	OD 200	nr	1		
J911.3	OD 160	nr	1		
J911.4	OD 110	nr	1		
J911.5	OD 90	nr	1		
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.6	DN 80	nr	4		
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries  <b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. -Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	53		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	5		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 90-250mm	nr	2		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	300		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 9 - NJIRU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	1300		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 90-250mm	m	400		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 90-250mm	m	800		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b><u>Marker Posts</u></b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	18		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	13		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	12		
<b>K86</b>	<b><u>Connection to Existing Network</u></b>				
K863	Allow for exposing and tapping of existing water pipelines to connect to the new network as shown on the drawings and as directed by the engineer.	Item	L.S		
<b>K87</b>	<b><u>Washout Outfall structures</u></b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	12		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION,</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b><u>Rate to include carting away and disposal.</u></b>				
<b>L11</b>	<b><u>In Pipe Trenches and Chambers</u></b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	4600		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	1550		
	<b>Note: - Blasting is NOT permitted for all Items under L1</b>				
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**BILL No. 9 - NJIRU DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>L5</b>	<b><u>Surrounds</u></b>				
<b>L52</b>	<b><u>Selected Excavated Granular Fill</u></b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 90-250mm	m	10200		
<b>L53</b>	<b><u>Imported Selected Fill</u></b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 90-250mm	m	2000		
<b>L54</b>	<b><u>Mass Concrete Surround</u></b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	650		
<b>L6</b>	<b><u>Pipe Wrapping</u></b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m <sup>2</sup>	350		
<b>L7</b>	<b><u>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</u></b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note;</b> The rate should include pipe and fitting fixing				
<b>L71</b>	<b><u>Volume n.e 0.5m<sup>3</sup></u></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	62		
<b>L74</b>	<b><u>Volume:- 0.5 - 1m<sup>3</sup></u></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	27		
	<b><u>CLASS X - MISCELLANEOUS WORK</u></b>				
	<b><u>Trenchless Road Crossings</u></b>				
X61	Provide all equipment, excavate below road surface in common materials (soil/murram) using trenchless technique (e.g pipe jacking, horizontal drilling etc). The rate to include all preparatory works, any requisite shoring, strutting, installation of pipe casing and necessary grouting and reinstatement. Pipe Outer Diameter 90-250mm.	m	120		
	<b>Note:-</b> All works to be executed in liason with relevant road authorities and rates to include facilitation. <b>The bidder to submit method statement with Bid execution of these works.</b>				
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**BILL No. 10 - SAIKA-MWENGENYE-OBAMA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	10900		
	<b>CLASS I - PIPEWORK - PIPES</b>				
<b>I7</b>	<b>HDPE PIPES - PN16</b>				
	Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.				
I441.1					
I441.2	Outer Diameter 160mm - not in trenches	m	1300		
I431.3	Outer Diameter 110mm - not in trenches	m	7450		
I431.4	Outer Diameter 90mm - not in trenches	m	1850		
I431.5	Outer Diameter 63mm - not in trenches	m	300		
	Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
I442	Outer Diameter 160mm in trenches, depth not exceeding 1.5m	m	325		
I443	-Ditto- but depth 1.5m - 2.0m	m	455		
I444	-Ditto- but depth > 2.0m	m	520		
I432.1	Outer Diameter 110mm in trenches, depth not exceeding 1.5m	m	1863		
I433.1	-Ditto- but depth 1.5m - 2.0m	m	2608		
I434.1	-Ditto- but depth > 2.0m	m	2980		
I432.2	Outer Diameter 90mm in trenches, depth not exceeding 1.5m	m	463		
I433.2	-Ditto- but depth 1.5m - 2.0m	m	648		
I434.2	-Ditto- but depth > 2.0m	m	740		
I432.3	Outer Diameter 63mm in trenches, depth not exceeding 1.5m	m	0		
I433.3	-Ditto- but depth 1.5m - 2.0m	m	0		
I434.3	-Ditto- but depth > 2.0m	m	0		
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<b>BILL No. 10 - SAIKA-MWENGENYE-OBAMA DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
	For <b>River aerial crossings</b> - Supply Steel Pipe sections, Transport to site and store in secure place. Include supply of jointing material, bolts, nuts, gaskets etc as applicable for Steel sections and Install as per Drawing Detail AFE0006-C0-253 or as directed by the Resident Engineer.				
I421.1	Outer Diameter 110mm	m	30		
I421.2	Outer Diameter 90mm	m	30		
	<b><u>CLASS J - PIPEWORK - FITTINGS AND VALVES</u></b>				
<b>J6</b>	<b><u>HDPE FITTINGS - Pressure Rating of PN16</u></b>				
	Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b><u>Bends</u></b>				
	<b><u>Plain Ended Bends</u></b>				
J613.1	Outer Diameter 160mm 90° bend	nr	5		
J613.2	-Ditto- but 45° bend	nr	6		
J613.3	-Ditto- but 22.5° bend	nr	5		
J613.4	Outer Diameter 110mm 90° bend	nr	8		
J613.5	-Ditto- but 45° bend	nr	10		
J613.6	Outer Diameter 90mm 45° bend	nr	4		
J613.7	-Ditto- but 22.5° bend	nr	2		
	<b><u>Junctions and Branches</u></b>				
	<b><u>Tees</u></b>				
J623.1	Outer Diameter 200mm x 90mm	nr	2		
J623.2	Outer Diameter 160mm x 110mm	nr	3		
J623.3	Outer Diameter 160mm x 90mm	nr	2		
J623.4	Outer Diameter 160mm x 63mm	nr	1		
J623.5	Outer Diameter 110mm x 110mm	nr	9		
J623.6	Outer Diameter 110mm x 90mm	nr	3		
J623.7	Outer Diameter 90mm x 90mm	nr	1		
	<b><u>Tees for Air Valve</u></b>				
J623.8					
J623.9	Outer Diameter 160mm x 80mm	nr	6		
J623.10	Outer Diameter 110mm x 80mm	nr	10		
	<b><u>Inverted Tee for Washout)</u></b>				
J623.11					
J623.12	Outer Diameter 160mm x 80mm	nr	2		
J623.13	Outer Diameter 110mm x 80mm	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

<b>BILL No. 10 - SAIKA-MWENGENYE-OBAMA DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>J63</b>	<b>Tapers</b>				
	<b>Concentric Taper</b>				
J632.1	200 x 110mm	nr	1		
J632.2	160 x 110mm	nr	1		
J632.3	110 x 63mm	nr	1		
<b>J64</b>	<b>Double Collars</b>				
	<b>Stepped Couplings</b>				
J641.1	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	4		
J641.2	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	18		
J641.3	Outer Diameter 90mm flange steel/HDPE stepped coupling	nr	6		
<b>J65</b>	<b>Adaptors</b>				
	<b>Flanged Adaptor</b>				
J651.1	Outer Diameter 200mm flanged adaptor	nr	1		
J651.2	Outer Diameter 160mm flanged adaptor	nr	3		
J651.3	Outer Diameter 110mm flanged adaptor	nr	10		
J651.4	Outer Diameter 90mm flanged adaptor	nr	4		
J651.5	Outer Diameter 80mm flanged adaptor (for Washout)	nr	4		
J651.6	Diameter 80mm flanged adaptor (for Air valve)	nr	16		
<b>J68</b>	<b>Straight Specials as specified</b>				
	<b>Plain Ended Pipes</b>				
J682.2	-Ditto- but 160mm	nr	4		
J682.3	-Ditto- but 110mm	nr	18		
J682.3	-Ditto- but 90mm	nr	6		
J682.4	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	4		
J681.5	-Ditto- but DN160	nr	12		
J681.6	-Ditto- but DN110	nr	20		
J681.9	-Ditto- but DN160	nr	4		
J681.10	-Ditto- but DN110	nr	4		
	<b>Flanged Spigot Pipes</b>				
J682.2	-Ditto- but DN160	nr	12		
J682.3	-Ditto- but DN110	nr	20		
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**BILL No. 10 - SAIKA-MWENGENYE-OBAMA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J682.4	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	4		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	2		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	16		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	2		
J693.2	110mm diameter End Cap	nr	1		
J693.2	90mm diameter End Cap	nr	1		
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	4		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	4		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	16		
J811.5					
J811.6	Outer Diameter 160mm flanged sluice valve	nr	2		
J811.7	Outer Diameter 110mm flanged sluice valve	nr	9		
J811.8	Outer Diameter 90mm flanged sluice valve	nr	3		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	16		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 160	nr	1		
J911.2	OD 110	nr	1		
J911.3	OD 90	nr	1		
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.4	DN 80	nr	6		
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<b>BILL No. 10 - SAIKA-MWENGENYE-OBAMA DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries  <b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. - Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	38		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	3		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 63-200mm	nr	3		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	300		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	1500		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liaison with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murrum road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 63-200mm	m	450		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 63-200mm	m	900		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 10 - SAIKA-MWENGENYE-OBAMA DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b>Marker Posts</b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	16		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	14		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	4		
<b>K86</b>	<b>Connection to Existing Network</b>				
K863	Allow for exposing and tapping of existing water pipelines to connect to the new network as shown on the drawings and as directed by the engineer.	Item	L.S		
<b>K87</b>	<b>Washout Outfall structures</b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	4		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION.</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b><u>Rate to include carting away and disposal.</u></b>				
<b>L11</b>	<b>In Pipe Trenches and Chambers</b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	4000		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	1350		
	<b>Note:</b> - Blasting is NOT permitted for all Items under L1				
<b>L5</b>	<b><u>Surrounds</u></b>				
<b>L52</b>	<b>Selected Excavated Granular Fill</b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 63-200mm	m	9000		
<b>L53</b>	<b>Imported Selected Fill</b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 63-200mm	m	1700		
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	600		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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**BILL No. 11 - DONHOLM DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	6113		
	<b><u>CLASS I - PIPEWORK - PIPES</u></b>				
<b>I7</b>	<b>HDPE PIPES - PN16</b>				
	<u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.</u>				
I441.1	Outer Diameter 250mm - not in trenches	m	1725		
I441.2	Outer Diameter 200mm - not in trenches	m	3188		
I431.3	Outer Diameter 110mm - not in trenches	m	1200		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I442.1	Outer Diameter 250mm in trenches, depth not exceeding 1.5m	m	431		
I443.1	-Ditto- but depth 1.5m - 2.0m	m	604		
I444.1	-Ditto- but depth > 2.0m	m	690		
I442.2	Outer Diameter 200mm in trenches, depth not exceeding 1.5m	m	797		
I443.2	-Ditto- but depth 1.5m - 2.0m	m	1116		
I444.2	-Ditto- but depth > 2.0m	m	1275		
I432	Outer Diameter 110mm in trenches, depth not exceeding 1.5m	m	300		
I433	-Ditto- but depth 1.5m - 2.0m	m	420		
I434	-Ditto- but depth > 2.0m	m	480		
	<b><u>CLASS J - PIPEWORK - FITTINGS AND VALVES</u></b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b>				
	<u>Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.</u>				
	<u><b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
<b>J61</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
J613.1	Outer Diameter 250mm 90° bend	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 11 - DONHOLM DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
J613.2	-Ditto- but 45° bend	nr	2		
J613.3	-Ditto- but 22.5° bend	nr	4		
J613.4	Outer Diameter 200mm 90° bend	nr	3		
J613.5	-Ditto- but 45° bend	nr	14		
J613.6	Outer Diameter 110mm 90° bend	nr	2		
J613.7	-Ditto- but 45° bend	nr	6		
<b>J62</b>	<b>Junctions and Branches</b>				
	<b>Tees</b>				
J623.1	Outer Diameter 250mm x 250mm	nr	1		
J623.2	Outer Diameter 250mm x 200mm	nr	2		
J623.3	Outer Diameter 250mm x 110mm	nr	1		
J623.4	Outer Diameter 200mm x 200mm	nr	4		
J623.5	Outer Diameter 200mm x 110mm	nr	2		
J623.6	Outer Diameter 110mm x 110mm	nr	2		
	<b>Tees for Air Valve</b>				
J623.7	Outer Diameter 250mm x 80mm	nr	3		
J623.8	Outer Diameter 200mm x 80mm	nr	4		
J623.9	Outer Diameter 110mm x 80mm	nr	4		
	<b>Inverted Tee for Washout)</b>				
J623.10	Outer Diameter 250mm x 80mm	nr	2		
J623.11	Outer Diameter 200mm x 80mm	nr	3		
J623.12	Outer Diameter 110mm x 80mm	nr	2		
<b>J63</b>	<b>Tapers</b>				
	<b>Concentric Taper</b>				
J632	250 x 200mm	nr	2		
<b>J64</b>	<b>Double Collars</b>				
	<b>Stepped Couplings</b>				
J641.1	Outer Diameter 250mm flange steel/HDPE stepped coupling	nr	4		
J641.2	Outer Diameter 200mm flange steel/HDPE stepped coupling	nr	4		
J641.3	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	4		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 11 - DONHOLM DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b>Flanged Adaptor</b>				
J651.1	Outer Diameter 250mm flanged adaptor	nr	3		
J651.2	Outer Diameter 200mm flanged adaptor	nr	3		
J651.3	Outer Diameter 110mm flanged adaptor	nr	3		
J651.4	Outer Diameter 80mm flanged adaptor (for Washout)	nr	7		
J651.5	Diameter 80mm flanged adaptor (for Air valve)	nr	11		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b>Plain Ended Pipes</b>				
J682.1	250mm diameter Plain Ended Pipe piece (1.2m)	nr	4		
J682.2	-Ditto- but 200mm	nr	4		
J682.3	-Ditto- but 110mm	nr	4		
J681.4	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	7		
J681.5	250mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	6		
J681.6	-Ditto- but DN200	nr	8		
J681.7	-Ditto- but DN110	nr	8		
J681.8	250mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	4		
J681.9	-Ditto- but DN200	nr	6		
J681.10	-Ditto- but DN110	nr	4		
	<b>Flanged Spigot Pipes</b>				
J682.1	250mm diameter flanged spigot pipe	nr	6		
J682.2	-Ditto- but DN200	nr	8		
J682.3	-Ditto- but DN110	nr	8		
J682.4	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	7		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	4		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	11		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	4		
J693.2	200mm diameter End Cap	nr	3		
J693.3	110mm diameter End Cap	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

<b>BILL No. 11 - DONHOLM DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	7		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	7		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	11		
J811.4	Outer Diameter 250mm flanged sluice valve	nr	2		
J811.5	Outer Diameter 200mm flanged sluice valve	nr	2		
J811.6	Outer Diameter 110mm flanged sluice valve	nr	2		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	11		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 250	nr	1		
J911.2	OD 200	nr	1		
J911.3	OD 110	nr	1		
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.4	DN 80	nr	5		
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	<u>Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries</u>  <b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. - Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	31		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	3		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 11 - DONHOLM DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 110-250mm	nr	2		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	180		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	800		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 110-250mm	m	200		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 110-250mm	m	400		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b><u>Marker Posts</u></b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	11		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	8		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	7		
<b>K86</b>	<b><u>Connection to Existing Network</u></b>				
K863	Allow for exposing and tapping of existing water pipelines to connect to the new network as shown on the drawings and as directed by the engineer.	Item	L.S		
<b>K87</b>	<b><u>Washout Outfall structures</u></b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	7		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

BILL No. 11 - DONHOLM DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION.</u></b>				
L1	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b><u>Rate to include carting away and disposal.</u></b>				
L11	<b>In Pipe Trenches and Chambers</b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	2500		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	800		
	<b>Note:</b> - Blasting is NOT permitted for all Items under L1				
L5	<b><u>Surrounds</u></b>				
L52	<b>Selected Excavated Granular Fill</b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 110-250mm	m	5000		
L53	<b>Imported Selected Fill</b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 110-250mm	m	1250		
L54	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	450		
L7	<b><u>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</u></b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note:</b> The rate should include pipe and fitting fixing				
L71	<b>Volume n.e 0.5m<sup>3</sup></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	43		
L74	<b>Volume:- 0.5 - 1m<sup>3</sup></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	22		
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<b>BILL No. 12 - MWIKI ROAD DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	1600		
	<b>CLASS I - PIPEWORK - PIPES</b>				
<b>I7</b>	<b>HDPE PIPES - PN16</b> <u>Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.</u>				
I441	Outer Diameter 160mm - not in trenches	m	1600		
	<u>Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications</u>				
I442	Outer Diameter 160mm in trenches, depth not exceeding 1.5m	m	400		
I443	-Ditto- but depth 1.5m - 2.0m	m	560		
I444	-Ditto- but depth > 2.0m	m	640		
	<b>CLASS J - PIPEWORK - FITTINGS AND VALVES</b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b> <u>Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.</u>  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b>Bends</b>				
	<b>Plain Ended Bends</b>				
J613.1	Outer Diameter 160mm 90° bend	nr	2		
J613.2	-Ditto- but 45° bend	nr	4		
J613.3	-Ditto- but 22.5° bend	nr	3		
	<b>Tees for Air Valve</b>				
J623.1	Outer Diameter 160mm x 80mm	nr	2		
	<b>Inverted Tee for Washout)</b>				
J623.2	Outer Diameter 160mm x 80mm	nr	2		
<b>J64</b>	<b>Double Collars</b>				
	<b>Stepped Couplings</b>				
J641	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	6		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 12 - MWIKI ROAD DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J65</b>	<b>Adaptors</b>				
	<b>Flanged Adaptor</b>				
J651.1	Outer Diameter 160mm flanged adaptor	nr	4		
J651.2	Outer Diameter 80mm flanged adaptor (for Washout)	nr	2		
J651.3	Diameter 80mm flanged adaptor (for Air valve)	nr	2		
<b>J68</b>	<b>Straight Specials as specified</b>				
	<b>Plain Ended Pipes</b>				
J682.1	160mm diameter Plain Ended Pipe piece (1.2m)	nr	6		
J681.2	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	2		
J681.3	160mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	4		
J681.4	160mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	4		
	<b>Flanged Spigot Pipes</b>				
J682.1	160mm diameter flanged spigot pipe	nr	4		
J682.2	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	2		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	1		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	2		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	1		
J693.2	160mm diameter End Cap	nr	4		
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b>Gate Valves as specified</b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	2		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	2		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	2		
J811.4	Outer Diameter 160mm flanged sluice valve	nr	3		
<b>J86</b>	<b>Air Valves as specified</b>				
J861	Nominal Diameter 80mm Combination air valve	nr	2		
<b>J91</b>	<b>Flanged Water Meters</b>				
J911.1	OD 160	nr	1		
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**BILL No. 12 - MWIKI ROAD DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murrum road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 160mm	m	120		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 160mm	m	150		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b><u>Marker Posts</u></b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	2		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	2		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	2		
<b>K86</b>	<b><u>Connection to Existing Network</u></b>				
K863	Allow for exposing and tapping of existing water pipelines to connect to the new network as shown on the drawings and as directed by the engineer.	Item	L.S		
<b>K87</b>	<b><u>Washout Outfall structures</u></b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	2		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION,</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b><u>Rate to include carting away and disposal.</u></b>				
<b>L11</b>	<b><u>In Pipe Trenches and Chambers</u></b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	600		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	200		
	<b>Note: - Blasting is NOT permitted for all Items under L1</b>				
<b>L5</b>	<b><u>Surrounds</u></b>				
<b>L52</b>	<b><u>Selected Excavated Granular Fill</u></b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 160mm	m	1500		
<b>L53</b>	<b><u>Imported Selected Fill</u></b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 160mm	m	300		
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**BILL No. 13 - LUCKY SUMMER DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	1		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	1		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	1		
J811.4	Outer Diameter 160mm flanged sluice valve	nr	2		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	1		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 160	nr	1		
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.2	DN 80	nr	1		
	<b><u>CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></b>				
	Construction of chambers, chamber ducts, culverts, crossings, thrust, anchor blocks, reinstatement and other pipework ancillaries  <b>Note:-</b> Items for Work in this class shall include: - Excavation, preparation of surfaces, disposals of surplus excavated material, shoring sides of excavation, backfilling and removal of redundant services. - Concrete, Reinforcement, Formwork, joints and Finishes. -Tips for disposals of excavated material of debris to be identified by the Contractor in liaison with the Local Authorities.				
<b>K23</b>	<b><u>In Situ Concrete Chambers</u></b>				
	<b>Valve Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	5		
	<b>Meter Chambers</b>				
K133	In situ concrete chamber, internal size 1200mm x 1200mm, depth not exceeding 2.0m	nr	1		
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 160mm	nr	2		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	100		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 13 - LUCKY SUMMER DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	150		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 160mm	m	60		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 160mm	m	120		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b><u>Marker Posts</u></b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	1		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	2		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	1		
<b>K86</b>	<b><u>Connection to Existing Network</u></b>				
K863	Allow for exposing and tapping of existing water pipelines to connect to the new network as shown on the drawings and as directed by the engineer.	Item	L.S		
<b>K87</b>	<b><u>Washout Outfall structures</u></b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	1		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION,</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock</u></b>				
<b>L11</b>	<b><u>In Pipe Trenches and Chambers</u></b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	300		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	150		
	<b>Note: - Blasting is NOT permitted for all Items under L1</b>				
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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## BILL No. 13 - LUCKY SUMMER DISTRIBUTION

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<b>BILL No. 14 - UMOJA III DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>A36</b>	<b>Setting Out and As Built Drawings</b>				
	Setting out entire pipeline route, taking and recording invert levels upon excavation and preparation of As Built Drawings to be submitted for approval to the Resident Engineer.	m	4000		
	<b><u>CLASS I - PIPEWORK - PIPES</u></b>				
<b>I7</b>	<b>HDPE PIPES - PN16</b> Supply, Transport to site and store in secure place, protected from direct sunlight and physical damage. Rate to include Welding machines for Jointing HDPE pipes.				
I441	Outer Diameter 160mm - not in trenches	m	4000		
	Transport from site store, Demolition and General clearance for pipeline covering the full width of easement including grubbing out all shrubs etc and removal of all trees, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
I442	Outer Diameter 160mm in trenches, depth not exceeding 1.5m	m	1000		
I443	-Ditto- but depth 1.5m - 2.0m	m	1400		
I444	-Ditto- but depth > 2.0m	m	1600		
	<b><u>CLASS J - PIPEWORK - FITTINGS AND VALVES</u></b>				
<b>J6</b>	<b>HDPE FITTINGS - Pressure Rating of PN16</b> Supply, Transport to site and store in secure place. Include supply of jointing materials, bolts, nuts, gaskets etc as Applicable.  <b>Note</b> - Rate to include Transport from site store, Excavation of Trench including Trench Bed preparation, Shoring of Trench walls, Pipe Laying and Jointing, Backfilling, Final reinstatement and Disposal of excess Excavated material all as per the specifications				
<b>J61</b>	<b><u>Bends</u></b>				
	<b>Plain Ended Bends</b>				
J613.1	Outer Diameter 110mm 90° bend	nr	3		
J613.2	-Ditto- but 45° bend	nr	9		
J613.3	-Ditto- but 22.5° bend	nr	2		
<b>J62</b>	<b><u>Junctions and Branches</u></b>				
	<b>Tees</b>				
J623.1	Outer Diameter 110mm x 110mm	nr	9		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 14 - UMOJA III DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>Tees for Air Valve</b>				
J623.2	Outer Diameter 110mm x 80mm	nr	3		
	<b>Inverted Tee for Washout)</b>				
J623.3	Outer Diameter 110mm x 80mm	nr	2		
<b>J64</b>	<b><u>Double Collars</u></b>				
	<b>Stepped Couplings</b>				
J641	Outer Diameter 110mm flange steel/HDPE stepped coupling	nr	20		
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b>Flanged Adaptor</b>				
J651.1	Outer Diameter 110mm flanged adaptor	nr	11		
J651.2	Outer Diameter 80mm flanged adaptor (for Washout)	nr	2		
J651.3	Diameter 80mm flanged adaptor (for Air valve)	nr	3		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b>Plain Ended Pipes</b>				
J682.1	110mm diameter Plain Ended Pipe piece (1.2m)	nr	20		
J681.2	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	2		
J681.3	110mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	6		
J681.4	110mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	4		
	<b>Flanged Spigot Pipes</b>				
J682.1	110mm diameter flanged spigot pipe	nr	6		
J682.2	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	2		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	1		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	3		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	1		
J693.2	110mm diameter End Cap	nr	18		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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**BILL No. 14 - UMOJA III DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>K6</b>	<b><u>Crossings</u></b>				
K611	Construct reinforced concrete river/ drain pipe crossing, all in accordance with details shown on drawings. Include for provision and fixing of clips, heavy duty steel pipe clamps and heavy duty triangular mild steel frame as detailed. Outer Diameter 160mm	nr	2		
K641	Allow for crossing existing hedges, wall and fences (chain link, barbed wire etc.) including reinstatement to original state.	m	80		
K671	Allow for crossing existing drains and reinstate these after construction has been completed	m	400		
K681	Allow for crossing existing underground services (water, sewers, telephone, electric cables etc.), including reinstatement to original state and in liason with the relevant body for inspection and approval during execution of works. Pilot excavation to be done to establish the location of any buried services prior to actual excavation. Rate to include pilot excavation, repairs and reinstatement of any damages to existing buried services as a result of execution of works.	Item	L.S		
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 160mm	m	150		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 160mm	m	300		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b><u>Marker Posts</u></b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	3		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	4		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	2		
<b>K86</b>	<b><u>Connection to Existing Network</u></b>				
K863	Allow for exposing and tapping of existing water pipelines to connect to the new network as shown on the drawings and as directed by the engineer.	Item	L.S		
<b>K87</b>	<b><u>Washout Outfall structures</u></b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 14 - UMOJA III DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>CLASS L - PIPEWORK SUPPORTS AND PROTECTION,</b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock</u></b>				
<b>L11</b>	<b>In Pipe Trenches and Chambers</b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	1500		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	500		
	<b>Note:</b> - Blasting is NOT permitted for all Items under L1				
<b>L5</b>	<b><u>Surrounds</u></b>				
<b>L52</b>	<b>Selected Excavated Granular Fill</b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 160mm	m	3200		
<b>L53</b>	<b>Imported Selected Fill</b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 160mm	m	600		
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	200		
<b>L6</b>	<b><u>Pipe Wrapping</u></b>				
L602	Supply 'Denso Tape' Wrapping or approved equivalent for steel pipe joints and exposed steel sections. Bidder to include wrapping and jointing onto pipe in two layers as directed by the Engineer on site.	m <sup>2</sup>	200		
<b>L7</b>	<b><u>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</u></b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note;</b> The rate should include pipe and fitting fixing				
<b>L71</b>	<b>Volume n.e 0.5m<sup>3</sup></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	14		
<b>L74</b>	<b>Volume:- 0.5 - 1m<sup>3</sup></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	14		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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<b>BILL No. 15 - KAMITI DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>J62</b>	<b><u>Junctions and Branches</u></b>				
	<b>Tees</b>				
J623.1	Outer Diameter 160mm x 110mm	nr	1		
	<b>Tees for Air Valve</b>				
J623.3	Outer Diameter 160mm x 80mm	nr	1		
	<b>Inverted Tee for Washout)</b>				
J623.5	Outer Diameter 160mm x 80mm	nr	1		
<b>J64</b>	<b><u>Double Collars</u></b>				
	<b>Stepped Couplings</b>				
J641.1	Outer Diameter 160mm flange steel/HDPE stepped coupling	nr	6		
<b>J65</b>	<b><u>Adaptors</u></b>				
	<b>Flanged Adaptor</b>				
J651.1	Outer Diameter 160mm flanged adaptor	nr	4		
J651.2	Outer Diameter 80mm flanged adaptor (for Washout)	nr	1		
J651.3	Diameter 80mm flanged adaptor (for Air valve)	nr	1		
<b>J68</b>	<b><u>Straight Specials as specified</u></b>				
	<b>Plain Ended Pipes</b>				
J682.1	160mm diameter Plain Ended Pipe piece (1.2m)	nr	6		
J681.3	80mm diameter plain ended steel, 2000mm long (for Washout)	nr	1		
J681.4	160mm diameter flanged spigot pipe with thrust flange (For Air Valve)	nr	2		
J681.6	160mm diameter flanged spigot pipe with thrust flange (For Washout)	nr	2		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

**BILL No. 15 - KAMITI DISTRIBUTION**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
	<b>Flanged Spigot Pipes</b>				
J682.1	160mm diameter flanged spigot pipe	nr	2		
J682.2	80mm diameter flanged Spigot pipe, n.e 1.2m long for Washout	nr	1		
	<b>Double Flanged Pipes</b>				
J683.1	80mm diameter double flanged pipe, n.e 1.2m long for Washout Type 2	nr	1		
J683.2	80mm diameter double flanged riser pipe, n.e 200mm long for Air valve	nr	1		
	<b>End Cap</b>				
J693.1	80mm diameter End Cap Washout Type 2	nr	1		
J693.2	160mm diameter End Cap	nr	1		
<b>J8</b>	<b>VALVES AND PENSTOCKS</b>				
<b>J81</b>	<b><u>Gate Valves as specified</u></b>				
	Gate Valves for washout and line valves to be supplied complete with extension spindle n.e 2m and Tee-key. Air Valve isolating valves to be supplied with wheel only. All rates to be inclusive of these add-ons.				
J811.1	Nominal Diameter 80mm flanged sluice valve for Washout	nr	1		
J811.2	Nominal Diameter 80mm flap valve for Washout	nr	1		
J811.3	Nominal Diameter 80mm flanged sluice valve for Air Valve	nr	1		
J811.4	Outer Diameter 160mm flanged sluice valve	nr	3		
<b>J86</b>	<b><u>Air Valves as specified</u></b>				
J861	Nominal Diameter 80mm Combination air valve	nr	1		
<b>J91</b>	<b><u>Flanged Water Meters</u></b>				
J911.1	OD 160	nr	1		
<b>J93</b>	<b><u>Fire Hydrant</u></b>				
J911.3	DN 80	nr	4		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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<b>BILL No. 15 - KAMITI DISTRIBUTION</b>					
<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (KSH)</b>	<b>AMOUNT (KSH)</b>
<b>K7</b>	<b><u>Reinstatement</u></b>				
K711	Breaking up, temporary and permanent reinstatement of murram road compacted to the satisfaction of the Engineer. Contractor to allow for provision of requisite diversion signage, controls and safety precaution in their rates, Outer Diameter 110-160mm	m	90		
K741	Breaking up, temporary and permanent reinstatement of CONCRETE BLOCK PAVED roads/footpaths including subbase, base and sand bed layers, raised kerbs and flush kerbs to the satisfaction of the Engineer, Outer Diameter 110-160mm	m	180		
<b>K8</b>	<b><u>Other Pipework Ancillaries</u></b>				
<b>K82</b>	<b><u>Marker Posts</u></b>				
K821.1	Marker post for Air Valve inscribed 'AV'	nr	1		
K821.2	-Ditto- but Water Main inscribed 'WM'	nr	3		
K821.3	-Ditto- but Washout inscribed 'WO'	nr	1		
<b>K86</b>	<b><u>Connection to Existing Network</u></b>				
K863	Allow for exposing and tapping of existing water pipelines to connect to the new network as shown on the drawings and as directed by the engineer.	Item	L.S		
<b>K87</b>	<b><u>Washout Outfall structures</u></b>				
K871	Provide all materials and construct Masonry outfall structures on mass concrete plinths at washout drain pipe outlets.	nr	1		
	<b><u>CLASS L - PIPEWORK SUPPORTS AND PROTECTION.</u></b>				
<b>L1</b>	<b><u>Extras to excavation and backfilling of pipe trenches for rock excavation</u></b> <b><u>Rate to include carting away and disposal.</u></b>				
<b>L11</b>	<b><u>In Pipe Trenches and Chambers</u></b>				
L111	Excavation in soft rock (Description as specified)	m <sup>3</sup>	800		
L112	Excavation in Hard rock (Description as specified)	m <sup>3</sup>	350		
	<b>Note:</b> - Blasting is NOT permitted for all Items under L1				
<b>L5</b>	<b><u>Surrounds</u></b>				
<b>L52</b>	<b><u>Selected Excavated Granular Fill</u></b>				
L522	Provide, place and compact with excavated selected granular material for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 110-160mm	m	2250		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

BILL No. 15 - KAMITI DISTRIBUTION					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>L53</b>	<b>Imported Selected Fill</b>				
L532	Provide, transport to site, place and compact with imported selected fill (granular material) for bed and surround to pipes not less than 150mm thick or as specified and as directed by the Engineer, pipe bore 110-160mm	m	400		
<b>L54</b>	<b>Mass Concrete Surround</b>				
L542	Provide all materials and construct concrete ogee pipe sleeve and 150mm thick class 15/20 concrete bed and surround to HDPE pipe under trafficked areas with cover below 1.2m, and untrafficked areas of cover below 1m.	m	150		
<b>L7</b>	<b><u>Concrete Support, Thrust Blocks, Stools and Anchor Blocks</u></b>				
	Rate to include; excavation, formwork, reinforcement, provision and placing of concrete, curing and backfilling.				
	Class 25 Concrete				
	<b>Note;</b> The rate should include pipe and fitting fixing				
<b>L71</b>	<b>Volume n.e 0.5m<sup>3</sup></b>				
L711	To pipes Outer Diameter n.e 200mm	nr	10		
<b>L74</b>	<b>Volume:- 0.5 - 1m<sup>3</sup></b>				
L743	To pipes Outer Diameter 200 - 400mm	nr	3		
	<b><u>CLASS X - MISCELLANEOUS WORK</u></b>				
	<b><u>Trenchless Road Crossings</u></b>				
X61	Provide all equipment, excavate below road surface in common materials (soil/murram) using trenchless technique (e.g pipe jacking, horizontal drilling etc). The rate to include all preparatory works, any requisite shoring, strutting, installation of pipe casing and necessary grouting and reinstatement. Pipe Outer Diameter 110-160mm.	m	60		
	<b>Note:-</b> All works to be executed in liason with relevant road authorities and rates to include facilitation. <b>The bidder to submit method statement with Bid execution of these works.</b>				
X62	Extra over road crossing item X61 above for excavation/drilling in rock	m <sup>3</sup>	9		
X63	Allow for any method related charges the bidder feels may be required in carrying out works for trechless pipe crosssing under roads for items X61 & X62 above. These must be indicated below and pricing of each item provided (Separate additional sheet may be attached if necessary)	Item			
	i)				
	ii)				
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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**Bill No. 16: Consumer Connections - No. 1,903**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
<b>1</b>	<b>PIPEWORK - PIPES</b>				
1.1	Supply and install 32 mm HDPE pipes. Rate to include excavation and backfilling. Depth n.e. 1000 mm Length to be determined on site.	m	20,000		
1.2	Supply and install 15 mm HDPE pipes. Rate to include excavation and backfilling. Depth n.e. 1000 mm Length to be determined on site.	m	45,000		
<b>2</b>	<b>PIPEWORK - FITTINGS AND VALVES</b>				
	The rate quoted is for supply and installation of fittings and valves to the pipe network.				
<b>2.1</b>	<b>HDPE Saddle Clamps</b>				
2.1.1	DN110 x DN32	nr	381		
2.1.2	DN75 x DN32	nr	381		
2.1.3	DN63 x DN32	nr	381		
2.1.4	DN50 x DN32	nr	761		
2.1.5	DN110 x DN15	nr	381		
2.1.6	DN75 x DN15	nr	381		
2.1.7	DN63 x DN15	nr	381		
2.1.8	DN50 x DN15	nr	761		
<b>2.2</b>	<b>90° HDPE Elbows</b>				
2.2.1	DN15	nr	5,708		
<b>2.3</b>	<b>HDPE Adaptor</b>				
	Flange Adaptor complete with metal back up ring				
2.3.1	DN15	nr	3,805		
<b>2.4</b>	<b>End Cap</b>				
2.4.1	DN15	nr	1,903		
<b>2.5</b>	<b>Brass Ferrule</b>				
2.5.1	DN32	nr	476		
2.5.2	DN15	nr	1,427		
<b>2.6</b>	<b>HDPE Equal Tee</b>				
2.6.1	DN32 x DN 32	nr	1,903		
<b>2.7</b>	<b>HDPE Reducing Coupler</b>				
2.7.1	DN32 x DN15	nr	1,903		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

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**Bill No. 17: Dayworks Schedule**

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	TOTAL (Kshs.)
	<p><b>Note: This Bill is Provisional</b></p> <p>The rates entered in the following schedule shall be used in assessing the cost of any extra work ordered by the Engineer for execution on a Dayworks basis. The rates indicated are to be net in relation to the provision of labour, materials or plant indicated. Market rates shall be used if any rate is found to be grossly inconsistent with the market rate.</p>				
<b>1</b>	<b>Labour</b>				
1.1	Unskilled labourer	h	500		
1.2	Foreman	h	250		
1.3	Assistant foreman	h	250		
1.4	Plant operator	h	100		
1.5	Certified Blaster	h	50		
1.6	Mason	h	250		
1.7	Concretor	h	100		
1.8	Carpenter	h	50		
1.9	Plumber	h	50		
1.10	Pipelayer	h	150		
1.11	Electrician	h	250		
1.12	Surveyor	h	100		
1.13	Painter	h	50		
1.14	Technician	h	250		
1.15	Watchman	h	500		
<b>2</b>	<b>Materials</b>				
	All materials as per specifications. The rate to include for delivery to site, storage and handling.				
2.1	Coarse aggregates for concrete	m <sup>3</sup>	100		
2.2	Fine aggregates (sand) for concrete	m <sup>3</sup>	100		
2.3	Ordinary portland cement	t	5		
2.4	Building stone/concrete blocks	m	60		
2.5	Hardcore	m <sup>3</sup>	100		
2.6	Murram	m <sup>3</sup>	25		
2.7	Spigot and socket GRP pipes 450mm dia.	m	20		
<b>Sum carried forward to next page</b>					

**Bill No. 17: Dayworks Schedule**

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	TOTAL (Kshs.)
2.8	DN375 PCC rigid jointed pipe	m	150		
2.9	DN450 PCC rigid jointed pipe	m	150		
2.10	Concrete Grade 15/20	m <sup>3</sup>	25		
2.11	Concrete Grade 25/20	m <sup>3</sup>	25		
2.12	BRC mesh A142	m <sup>2</sup>	25		
2.13	High yield twisted steel bars	t	1		
2.14	Shuttering timber class F1 finish	m <sup>2</sup>	25		
2.15	Diesel	l	500		
2.16	Paint-Asorted	l	100		
2.17	Concrete Class 15/20	m <sup>3</sup>	10		
2.18	Concrete Class 20/20	m <sup>3</sup>	10		
2.19	Concrete Class 25/20	m <sup>3</sup>	10		
<b>3</b>	<b>Plant</b> Rate to include for all operation and maintenance costs, fuel, oil, grease, operators etc.				
3.1	1 tonne pickup	h	200		
3.2	7 tonne lorry (tipper)	h	100		
3.3	15 tonne lorry (tipper)	h	100		
3.4	20 tonne lorry (tipper)	h	100		
3.5	D7 bulldozer	h	50		
3.6	Hydraulic excavator/shovel (1.0m <sup>3</sup> )	h	50		
3.7	Backhoe tractor (1.0m <sup>3</sup> )	h	50		
3.8	Wheel loader	h	50		
3.9	Mobile crane (5tonne)	h	50		
3.10	Concrete mixer 1.0m <sup>3</sup>	h	50		
3.11	Dumper, 0.76m <sup>3</sup>	h	50		
3.12	Dumper, 2.0m <sup>3</sup>	h	50		
3.13	Concrete vibrator (petrol or diesel) with drive, flex and 40mm poker	h	50		
3.14	Water bowser (5,000 l)	h	50		
3.15	Portable dewatering pump	h	50		
<b>Sum carried forward to next page</b>					

**Bill No. 17: Dayworks Schedule**

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	TOTAL (Kshs.)
3.16	Air compressor machine (5000 l/min)	h	100		
3.17	Jack hammer (25kg)	h	200		
3.18	Generator	h	100		
3.19	Electric welding set including electrodes	h	50		
3.20	Cutting and welding set including oxygen and acetylene	h	50		
Sum carried forward to next page					

**Bill No. 17: Dayworks Schedule**

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	TOTAL (Kshs.)
	<b><u>Bill 17 Collection Sheet</u></b>  Page No. 1 of 3  Page No. 2 of 3  Page No. 3 of 3				

**BILL 17 TOTAL CARRIED FORWARD TO SUMMARY SHEET**