








ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE KES	AMOUNT KES
 <b>Preliminary and General Works</b>					1
All rates in these Bills of Quantities are to include all taxes and duties.					
<b>1-A GENERAL ITEMS</b>					
<b>1-A1 CONTRACTUAL REQUIREMENTS</b>					
1-A11	Performance Security	Sum	1		
1-A121	Contractor's all risk insurance (CAR)	Sum	1		
<b>1-A2 SPECIFIED REQUIREMENTS</b>					
<b>1-A24 New equipment for Use by Engineers Staff</b>					
Provide and maintain Contractor owned RTK survey equipment as specified in the specifications during contract period for exclusive use of the Engineer.					
1-A249.2	Contractor retains ownership of equipment.	month	6		
1-A249.6	Contractor's overheads & profit for items A249.2	%	0		
<b>1-A25 Attendance upon Contract Administrators</b>					
1-1.A252	Chainmen Provide (1 No.)	month	6		
<u>By Third Party Inspection (man-made other than pipes)</u>					
1-A264.2	Concrete crush test: 150 mm moulds cubes in sets of 3 samples	nr	1		
1-A264.3	Steel Reinforcement: tensile strength test	nr	1		
<u>By Third Party Inspection (pipes)</u>					
1-A266.5	Concrete pipes	nr	1		
1-A266.6	HDPE Pipes & Fittings	nr	1		
<b>Testing of Works</b>					
1-A277	Test Run of Works 2 weeks prior & 2 weeks after substantial completion	Sum	1		
<u>Signboards</u>					
1-A279	Provide project signboard as detailed in Drawing No.: THIWASCO/SD/1.0	nr	1		
<b>1-A28 Temporary Works</b>					
1-A282	Traffic diversions	Sum	1		
1-A282	Traffic regulation (including signages, warning tapes and warning signs); establishment, operation and removal	Sum	1		
1-A287	Provide & maintain 10 m head 50 m3/hr dewatering pump	Sum	1		
<b>TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET</b>					


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 <b>Preliminary and General Works</b>					1
1-A381	<b>METHOD RELATED CHARGES</b> The Contractor to allow a lump sum amount to cater for his method related costs including overheads & profits by considering the following site conditions: (i) The pipe lines will be laid in areas with numerous active existing services, both on the surface and buried; and along busy Streets/ Roads in Commercial and Residential areas. (ii) The works are to be carried out in congested Built-up areas with limited working space and limited access for Mechanical Equipment. The area is predominantly rocky. (iii) The pipelines will be constructed mainly along road reserves. Execution of Works in such conditions are deemed to be included in the Contractor's Rates.	Sum	1		
1-A382	<u>Contractor's Camp and Storage Yard:</u> Allow for any costs, overheads and profit for establishment of the Contractor's Camp(s), Offices, Storage Yard and other facilities including mobilization, demobilization and removal on Completion. Include for 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	Sum	1		
1-A383	<u>Setting Out of the Works:</u> To be done in accordance with Specifications. The Work will entail establishment of Level Datum, setting out of the Works in accordance with Specifications, staking out of the construction wayleave along all pipeline routes, Topographical Survey, preparation of updated Layout Plans (with Contours at 1m interval), submission of plans & pipeline profiles and Setting Out of proposed manholes and pipelines	m	7,100		
1-A384	Provisional Sum of KES 800000 for any payments for services by roads authorities, County Government, NEMA etc and any other that have any statutory jurisdiction over the works. Rate to include sourcing road cutting permits and reinstatement to standard, permits to work on road verges and tree cutting permits as may be required.	Sum	1		
1-A387	Provide "As Built drawings" in AutoCAD and 5nr A3 hard copies and Operation and maintenance manuals for all plant, and equipment installed or constructed and rehabilitated. Include general layouts, pipeline profiles, chamber plans, sections & reinforcement detailing	Sum	1		
<b>TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET</b>					

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE KES	AMOUNT KES
<b>COLLECTION SHEET</b>					
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<b>TOTAL CARRIED TO SUMMARY SHEET</b>					-


ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (KES)
 <b>Supply &amp; Installation of Pipes &amp; Fittings</b>					2
All rates in these Bills of Quantities are to include all taxes and duties.					
<b>2-D</b>	<b>DEMOLITION &amp; SITE CLEARANCE</b>				
	Removal from site and disposed to County Government of Kiambu (CGK) dump site				
<b>2-D2</b>	<b>REMOVAL OF TREES AND STUMPS</b>				
	Removal from site and disposed				
2-D212	Trees of girth: 500 mm - 1 m.,	nr	1.00		
2-D272	Stumps of diameter: 500 mm - 1m.,	nr	1.00		
<b>2-D5</b>	<b>CLEARANCE OF PIPELINE WAYLEAVES, DISPOSAL AS DIRECTED</b>				
	<b>Pipeline and access track</b>				
2-D512	Nominal bore: n.e. 100 mm,	m	7,100.00		
<b>2-1</b>	<b>PIPEWORK - PIPES &amp; FITTINGS - SUPPLY OF</b>				
<b>2-11</b>	<b>PIPES</b>				
<b>2-116</b>	<b>Supply of HDPE pipes</b>				
<b>2-1166</b>	<u>Plain ended electrofusion joints, standard pipe lengths</u>				
2-1195.4g	OD 63, PN 10	m	2,000.00		
2-1195.4i	OD 90, PN 10	m	5,000.00		
2-1195.4j	OD 110, PN 10	m	100.00		
	<b>Supply of PPR Consumer Pipes</b>				
2-1195.4c	Polypropylene pipe n.b. OD 20	m	100.00		
	<b>Two band saddle clamp stainless steel tapping sleeves c/w female threaded outlet</b>				
2-6A-1488.4g	OD 63 - Outlet OD 20	nr	20.00		
2-6A-1488.4i	OD 90 - Outlet OD 20	nr	10.00		
<b>2-13</b>	<b>FITTINGS TO HDPE PIPES</b>				
<b>2-132</b>	<b>Bends Plain Ended, butt welded joints in angles</b>				
<b>2-1321</b>	<u>Bends of varying curvature from 7 degrees to 90 degrees</u>				
2-1828.4i	OD 90, PN 10.	nr	15.00		
2-1828.4j	OD 110, PN 10.	nr	2.00		
	<b>Junctions and Branches, all flanged.</b>				
	<u>Tees, equal tee.</u>				
2-1831.4j	OD 110/110, PN 10.	nr	1.00		
	<u>Tees, branch down as stated</u>				
2-1832.4j	OD 110/90, PN 10.	nr	6.00		
	<b>Main Plain ended, flanged invert level branch.</b>				
2-1848.4j	OD 110/90, PN 10.	nr	1.00		
	<b>Tapers double flanged.</b>				
	<u>Concentric, down 1 dia.</u>				
2-1862.4j	OD 110/90, PN 10.	nr	1		
	<b>Adaptors, detachable collars couplings &amp; saddles</b>				
	<u>Flexible straight &amp; stepped coupling.</u>				
2-1381.6i	DN 90, PN 16.	nr	12		
<b>2-19</b>	<b>VALVES, PENSTOCKS, HYDRANTS &amp; METERS</b>				
	<u>Gate valves to SSRN 226</u>				
2-1911.6d	DN 25, PN 10.	nr	3.00		
2-1911.6i	DN, 80, PN 10.	nr	5.00		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (KES)
 <b>Supply &amp; Installation of Pipes &amp; Fittings</b>					2
2-1941.6j	<u>Non-return valves, double flanged</u> DN 100, PN 10.	nr	1.00		
2-1941.6i(ii)	<u>Flap valves, flanged</u> DN, 80, PN 10.	nr	1.00		
2-1959.6d	<u>Tripple function Anti-Surge Air Valves, flanged.</u> DN 25, PN 10.	nr	3.00		
2-1992.6j	<u>Water meters, smart ready ultrasonic</u> DN 100, PN 10.	nr	1.00		
<b>2-J</b>	<b><u>PIPEWORK - PIPES, SEWERS &amp; FITTINGS - INSTALL</u></b>				
<b>2-J1</b>	<b><u>METHOD OF MEASUREMENT TYPE A IN METERS:</u></b> <b><u>HDPE Pipes</u></b> Rates for installation of pipelines include: transportation of pipes from storage, stripping of top soil, excavation of trenches in loose soil, weathered rock and in hard rock as per Drawing No.: THIWASCO/SD/5.0, laying of pipes in trenches, jointing of pipes and backfilling of pipe trenches in compacted layers				
2-J161.2	Pipe n.b: n.e. 100 mm trenches depth n.e. 1 m.	m	5,100.00		
<b>2-J2</b>	<b><u>TESTING</u></b>				
2-J211	<u>Test pressure exc.6 bar but not exc. 12 bar.</u> Pipe n.b: n.e. 100 mm	m	5,100.00		
<b>2-J3</b>	<b><u>STERILISATION AND FLUSHING</u></b>				
2-J31	Pipe n.b.: n.e 100 mm.	m	5,100.00		
<b>2-J4</b>	<b><u>METHOD OF MEASUREMENT TYPE B BY NUMBER:</u></b>				
	<b><u>Fittings</u></b>				
2-J421.12	<u>11.25°, 22.5°, 45°, 90° Long radius Plain Ended bends</u> Bend n.b: n.e. 100 mm trenches depth n.e. 1 m.	nr	2.00		
	<b><u>Junctions and Branches</u></b>				
2-J422.12	Tee n.b: n.e. 100 mm trenches depth n.e. 1 m.	nr	1.00		
	<b><u>Gate, butterfly valves, penstocks, non return/flap valves</u></b>				
2-J426.11	Pipe n.b: n.e. 100 mm Not in trenches, rate to include installation with extension spindle and valve surface box as per Drawing Number: THIWASCO_SD_11.0	nr	1.00		
	<b><u>Air valves</u></b>				
2-J427.11	Pipe n.b: n.e. 100 mm Not in trenches/ In precast concrete chambers as per Drawing No.: THIWASCO/SD/2.0 including all fittings.	nr	3.00		
	<b><u>Meters</u></b>				
2-J428.11	Pipe n.b: n.e. 100 mm Not in trenches/ In chambers as per Drawing No.: THIWASCO/SD/3.0 including all fittings.	nr	1.00		
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

 <b>Supply &amp; Installation of Pipes &amp; Fittings</b>					<b>2</b>
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (KES)
<b>2-K</b>	<b>PIPEWORK - MANHOLE &amp; PIPEWORK ANCILLARIES</b>				
<b>2-K1</b>	<b>MANHOLES AND OTHER CHAMBERS IN ACCORDANCE WITH STANDARD DRAWINGS</b>				
	<u>In -situ concrete Valve chamber as per Drawing No.: THIWASCO/SD/10</u>				
2-K131.11	Pipe Nom. Bore n.e. 100 mm. Depth n.e. 1.5 m	nr	1.00		
	<u>In -situ concrete Washout valve chamber As per Drawing No.: THIWASCO/SD/13.0</u>				
2-K136.12	Pipe n.b: n.e exc. 100 mm depth 1.5 - 2 m.	nr	1.00		
	<u>In -situ concrete outfall structure As per Drawing No.: THIWASCO/SD/13.0</u>				
2-K139.12	Pipe n.b: n.e exc. 100 mm depth 1.5 - 2 m.	nr	1.00		
	<u>Precast concrete Valve chamber As per Drawing No.: THIWASCO/SD/2.0</u>				
2-K151.11	Pipe Nom. Bore n.e. 100 mm. Depth n.e. 1.5 m	nr	3.00		
<b>2-K2</b>	<b>CONCRETE MANHOLE COVERS</b>				
	<u>Precast concrete cover</u>				
2-K253	Area: 0.5 - 1 m <sup>2</sup> as per Drawings	nr	4.00		
<b>2-K6</b>	<b>CROSSINGS</b>				
<b>2-K7</b>	<b>REINSTATEMENT</b>				
	Temporary breaking up and permanent reinstatement of surfaced roads, pipe nominal bore not exceeding. 250 mm.	m	10.00		
2-K731					
	Microtunneling across surfaced road. Rate to include supply & installation of all materials, mobilisation, demobilisation of specialised equipment, microtunnelling across road to specifications and as per Drawing No.: THIWASCO/SD/15.0	m	40		
2-K732					
2-K732					
<b>2-K8</b>	<b>OTHER PIPEWORK ANCILLARIES</b>				
2-K821.2	<u>Marker Posts for valves</u> in accordance with general drawings.	nr	6.00		
2-K822.2	<u>Marker Posts for Air Valves</u> in accordance with general drawings.	nr	3.00		
2-K824.2	<u>Marker Posts for Washouts</u> in accordance with general drawings.	nr	1.00		
2-K825.2	<u>Marker Posts for Pipelines</u> in accordance with general drawings.	nr	26.00		
<b>2-L</b>	<b>PIPEWORK-SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</b>				
<b>2-L1</b>	<b>EXTRAS TO EXCAVATION AND BACKFILLING</b>				
	<u>In pipe trenches excavation not covered under installation of new pipelines</u>				
2-L111	of hard rock class I material.	m <sup>3</sup>	479.25		
2-L112	of altered and weathered rock class II material.	m <sup>3</sup>	718.88		
2-L117	with class S2 material.	m <sup>3</sup>	862.65		
<b>2-L3</b>	<b>BEDS</b>				
	<u>Bedding Material</u> In pipe trenches lower bedding as per Drawing No.: THIWASCO/SD/5.0 with blended imported and screened class S2 material.	m <sup>3</sup>	479.25		
2-L323					
<b>PAGE TOTAL CARRIED FORWARD TO SECTION COLLECTION SHEET</b>					

 <b>Supply &amp; Installation of Pipes &amp; Fittings</b>					<b>2</b>
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (KES)
<b>2-L5</b>	<b>SURROUNDS</b>				
	<u>Surround Material</u> In pipe trenches Selected granular material as per Drawing No.: THIWASCO/SD/5.0 with blended imported and screened				
2-L521	Pipe n.b. n.e. 100 mm	m <sup>3</sup>	958.50		
<b>2-L7</b>	<b>CONCRETE STOOLS AND THRUST BLOCKS CONCRETE CLASS 25</b>				
	<b>Asp per Standard Drawings</b>				
	<u>To bends. Volume: 0.5 - 2 m<sup>3</sup>, nom.</u>				
2-L714.1	Pipe n.b. n.e. 100 mm	nr	2.00		
	<u>To junctions/tees. Volume: 0.5 - 2 m<sup>3</sup>, nom.</u>				
2-L725.1	Pipe n.b. n.e. 100 mm	nr	2.00		
	<u>Valve &amp; Taper stools. Volume 0.1-0.5 m<sup>3</sup>,</u>				
2-L726.1	Pipe n.b. n.e. 100 mm	nr	1.00		
<b>2-X</b>	<b>MISCELLANEOUS</b>				
<b>2-X9</b>	<b>OTHER</b>				
	Pigmented low density polyethylene and Aluminium foil in a bright colour continuously labelled "DANGER HDPE PIPE" in English and Swahili. For road crossings.				
2-X9.1		m	50.00		
	<u>Tee Keys for valve operation</u> Provide Tee keys for the operation of Sluice valves. Length = 600 - 3000mm c/w tapered handle tip for surface.box opening. Keys to suit extended spindle top provided.				
2-X9.2		nr	1.00		
	<u>Chamber cover lifting apparatus</u> As per General Drawings.				
2-X9.3		nr	1.00		
	<u>Supply Denso paste/tape</u> For all fittings				
2-X9.4		Sum	1.00		
	<b>Household connections</b> For connection of existing consumers Contractor's rate to include supply and installation of compression fittings as per Standard Drawing including 90° Male HDPE Bend OD 20, 90° HDPE Bend OD 20, All Flanged Tee HDPE OD 20, HDPE - BPT adaptor (OD 20 - OD 20), Universal connector OD 20 and transfer of consumer meter connection from old pipeline to new pipeline				
2-X9.5		nr	50.00		
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 <small>THIWASCO</small>	Supply & Installation of Pipes & Fittings				2																																										
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<div style="border: 2px solid #4a7ebb; border-radius: 15px; background-color: #4a7ebb; color: white; padding: 10px; display: inline-block; margin-bottom: 20px;"> <p style="margin: 0;">COLLECTION SHEET</p> </div> <p style="text-align: center;">PAGE NO.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center; vertical-align: top;">1</td> <td style="width: 40%; border-top: 1px dotted black;"></td> </tr> <tr> <td style="text-align: center; vertical-align: top;">2</td> <td style="border-top: 1px dotted black;"></td> </tr> <tr> <td style="text-align: center; vertical-align: top;">3</td> <td style="border-top: 1px dotted black;"></td> </tr> <tr> <td style="text-align: center; vertical-align: top;">4</td> <td style="border-top: 1px dotted black;"></td> </tr> <tr> <td style="text-align: center; vertical-align: top;">5</td> <td style="border-top: 1px dotted black;"></td> </tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> <tr><td style="border-top: 1px dotted black;"></td><td style="border-top: 1px dotted black;"></td></tr> </table>						1		2		3		4		5																																	
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