



HOMA BAY COUNTY WATER AND SANITATION CO. LTD

P.O. Box 4 (Postal Code - 40300)

Homa Bay

Tel: +254 717428030

E-mail: [homawater@yahoo.com](mailto:homawater@yahoo.com); Website: [www.homawasco.co.ke](http://www.homawasco.co.ke)

# **BILL OF QUANTITIES FOR AHERO - KISII ROAD (A1)**

## SUMMARY PAGE

	<b>BROUGHT FORWARD FROM BILL SUMMARY SHEETS</b>	<b>AMOUNT (Kshs)</b>
1	BILL No 1: PRELIMINARY AND GENERAL	
2	BILL No 2: PIPELINE RELOCATION	
	A) AHERO - KISII ROAD (A1)	
3	BILL No 3: DAYWORKS SCHEDULES	
	<b>SUB-TOTAL</b>	
4	1.5% PHYSICAL CONTIGENCY	
	<b>TOTAL CONTRACT COST</b>	

**BIL No 1: PRELIMINARY AND GENERAL ITEMS**

Bill No.	Item Description	Unit	Qty	Rate	Amount (Ksh)
<b>1.1</b>	<b><u>SPECIFIED REQUIREMENTS:</u></b>				
<b>1.1.0</b>	<b><u>INSURANCES</u></b>				
1.1.0 a	Performance Security	Sum			<b>500,000.00</b>
1.1.0 b	Insurance of the Works	Sum			
1.1.0 c	Third Party Insurance	Sum			
1.1.0 d	Insurance for Contractor's Personnel and Equipment	Sum			
1.1.1	Provide a for de-watering of the works in accordance to the Water Relocation contract during the contract period.	Lump Sum			
1.1.2	Allow for lease and maintainance of contractor's temporary yard, Site office, store. Rate to include for lighting and security/guarding.	Month	4		
1.1.3	Provide for attendance , support and services for the attached Homawasco staff as per the approved rates.	Months	4	<b>100,000.00</b>	<b>400,000.00</b>
1.1.4	Contractor's markup on item 1.1.3	%	15%		<b>60,000.00</b>
1.1.5	Provide for transport of Homawasco engineers staff for the period of contract. Rate to include drivers salary, insurance, vehicle maitenance, servicing and fuel.	km	12,000	49	<b>588,000.00</b>
1.1.6	Provide for preparation and submission to the employer 1No. set of virograph and 2No. sets of blue print copies (A1 Size) & Autocad as built drawings for all the sewer lines in the contract. Note that manhole and valves chamber positions in the layout should be actual (geo-referenced).	Item			<b>100,000.00</b>
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**BILL 2: PIPELINE RELOCATION WORKS**

**A. AHERO - KISII (A1) ROAD**

Bill No.	Item Description	Unit	Qty	Rate (Ksh)	Amount (Ksh)
<b>2.0</b>	<b>GENERAL CLEARANCE AND SETTING OUT</b>				
2.0.1	Provide for 2m width site clearance along the pipeline route.	m <sup>2</sup>	24600		
2.0.2	Setting out and pegging at 50m intervals along the pipeline alignment.	m	12300		
2.0.3	Provide for uprooting of trees of average girth. Rate to include for slicing to appropriate sizes and transportation to a point as shown by the Homawasco Engineer. (Approximately not exceeding 300m away)	No	29		
2.0.4	Allow for site investigations including trial pits to establish position of service lines and pipe material. Include for all overheads.	No	22		
	<b>EXCAVATIONS</b>				
<b>2.1</b>	<b>Excavate trench on road reserve to the correct inverts and grade for depth not exceeding 1.5m, refill, ram &amp; remove surplus materials for the following sizes of pipes.</b>				
2.1.1	DN 280 Upvc Class E Pipeline	m <sup>3</sup>	2150		
2.1.2	DN 280 Upvc Class D Pipeline	m <sup>3</sup>	2050		
2.1.3	DN 160 Upvc Class D Pipeline	m <sup>3</sup>	1240		
2.1.4	DN 110 Upvc Class D Pipeline	m <sup>3</sup>	1350		
2.1.5	DN 90 Upvc Class D Pipeline	m <sup>3</sup>	2150		
2.1.6	DN 63 Upvc Class D Pipeline	m <sup>3</sup>	2150		
<b>2.2</b>	<b>Excavate trench within road reserve to invert and grade for depth 1.5m- 5.0m, backfill, ram and remove surplus materials for the following sizes of pipes.</b>				
2.2.1	DN 280 Upvc Class E Pipeline	m <sup>3</sup>	975		
2.2.2	DN 280 Upvc Class D Pipeline	m <sup>3</sup>	195		
2.2.3	DN 160 Upvc Class D Pipeline	m <sup>3</sup>	780		
2.2.4	DN 110 Upvc Class D Pipeline	m <sup>3</sup>	682.5		
2.2.5	DN 90 Upvc Class D Pipeline	m <sup>3</sup>	1209		
2.2.6	DN 63 Upvc Class D Pipeline	m <sup>3</sup>	975		
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2.3	<b>EXTRA OVER EXCAVATION</b>			
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2.3.1	Extra over excavation in rock (All classes).	m <sup>3</sup>	230	
2.4	Allow for provision of compacted approved granular material for bed and surrounds to respective pipe size,as directed by the Homawasco Engineer.	m <sup>3</sup>	476	
2.5	Allow for cost of undertaking necessary temporary works to minimize on water services interruption as relocation works progress.This includes but not limited to water tankers, temporary pipeline diversions, temporary pipe supports and interconnection using suitable specials and fittings.(Provisional)	Item	1	
2.5.1	Contractor's markup on item 2.5	%	0.15	
2.6	Allow cost for repair of any damaged existing water pipelines that are not for relocation during execution of the works. (Provisional)	Item	1	
2.6.1	Contractor's markup on item 2.6	%	0.15	
	<b>Supply and deliver to respective site, string lay the following water pipes as required. Rate to include for cutting to size, pipe jointing, testing, fittings and all other attracted overheads.</b>			
2.7	Upvc water pipes of various sizes as specified and as encountered along the pipeline route.			
2.7.1	DN 280 Upvc Class E Pipeline	m	480	
2.7.2	DN 280 Upvc Class D Pipeline	m	248	
2.7.3	DN 160 Upvc Class D Pipeline	m	620	
2.7.4	DN 110 Upvc Class D Pipeline	m	900	
2.7.5	DN 90 Upvc Class D Pipeline	m	800	
2.7.6	DN 63 Upvc Class D Pipeline	m	930	
	<b>PIPE FITTINGS</b>			
2.8	<b>Supply, and fix GI/steel/Upvc mechanical joint as below for the various pipes sizes as encountered along the pipeline route.</b>			
2.8.1	DN 280/250 Step down Upvc/steel/GI flanged coupling for road crossings	No	20	
2.8.2	DN 280/150 Step down Upvc/steel/GI flanged coupling for road crossings	No	13	
2.8.3	DN 280 straight Viking Johnson couplings	No	11	
2.8.4	DN 160 staight Viking Johnson coupling	No	17	
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	<b>Supply and fix GI/steel tees and other accoutrements as below for the various pipes sizes as encountered along the pipeline route for the washouts and air valves.</b>				
	<b>Washouts</b>				
2.8.13	DN 250 x 250 x 250 flanged equal tee	No	4		
2.8.14	DN 250 sluice valve	No	4		
2.8.15	DN 250 flanged adaptor	No	8		
2.8.16	DN 250 flanged pipe of length 1,500mm	No	4		
	<b>Airvalves</b>				
2.8.17	DN 250 x 250 x 50 flanged equal tee	No	6		
2.8.18	DN 50 double orifice airvalves	No	6		
2.8.19	DN 50 sluice valves	No	6		
2.8.20	DN 250 flanged adaptor	No	12		
2.8.21	DN 250 x 50 conical taper, double flanged pipe of length 400mm	No	6		
	<b>Supply, and fix vaves as follows for the various water pipe sizes as encountered along the pipeline route.</b>				
2.8.38	DN 15 gate valve	No	10		
2.8.39	DN 20 gate valve	No	10		
2.8.40	DN 25 gate valve	No	10		
2.8.41	DN 40 gate valve	No	10		
2.8.42	DN 50 gate valve	No	8		
2.8.43	DN 80 gate valve	No	8		
2.8.44	DN 100 sluice valve	No	5		
	<b>Chambers</b>				
2.9	Reconstruct damaged reinforced concrete chambers measuring about 1500mm x1500mm internal dimension, for washouts and airvalves	No	12		
2.1	Provide and place concrete class 15 for thrust and anchor blocks to the engineers direction. Rate to include cost of excavation, formworks, compaction and reinforcement bars.	m <sup>3</sup>	40		
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	<b>ROAD CROSSINGS</b>				



ITEM	ITEM DESCRIPTION	UNIT	QTY	RATE	Amount(Ksh)
3.0	<b>LABOUR</b>				
3.0.1	Site Agent	hr	1		
3.0.2	General fore man	hr	1		
3.0.3	Foreman	hr	1		
3.0.4	Supervisor	hr	1		
3.0.5	Graded Artisan	hr	1		
3.0.6	Ungraded Artisan	hr	1		
3.0.7	Guard	hr	1		
3.0.8	Welder	hr	1		
3.0.9	Driver	hr	1		
3.0.10	Machine operator	hr	1		
3.0.11	Mason	hr	1		
3.0.12	Plumber	hr	1		
3.0.13	Store keeper	hr	1		
3.0.14	Unskilled labour	hr	1		
3.0.15	Plant operator	hr	1		
3.0.16	Site Clerk	hr	1		
3.0.17	Painter	hr	1		
3.0.18	Carpenter	hr	1		
3.0.19	Office assistant	hr	1		
3.1	<b>PLANTS AND EQUIPMENT</b>				
3.1.1	Welding machine (gasoline powered)	Hr	1		
3.1.2	Grinding machine	Hr	1		
3.1.3	Generator set	Hr	1		
3.1.4	Porker vibrator	Hr	1		
3.1.5	Concrete mixer	Hr	1		
3.1.6	Dewatering pump	Hr	1		



3.1.7	Excavator with bucket	Hr	1		
3.1.8	Excavator with Harmmer	Hr	1		
3.1.9	Low bed truck	Hr	1		
3.1.10	Lorry mounted Crane	Hr	1		
3.1.11	Compressor	Hr	1		
3.1.12	Backhoe Excavator	Hr	1		
3.1.13	Damper	Hr	1		
3.1.14	Damping truck	Hr	1		
3.1.15	Single cabin pickup	Hr	1		
3.1.16	Double cabin pickup	Hr	1		
3.1.17	7 Ton Lorry	Hr	1		
3.1.18	18 Ton Lorry	Hr	1		
3.1.19	Pressure testing machine	Hr	1		
3.1.20	45 ton compactor	Hr	1		
3.1.21	5 ton Roller	Hr	1		
3.1.22	6 ton Truck mounted/mobilecrane	Hr	2		
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