BILL OF QUANTITIES FOR EQUIPPING AND DISTRIBUTION OF KWA WALA BOREHOLE					
KILOME SUB COUNTY, KIIMAKIU KALANZONI WARD FY 2025/2026					
Preamble: The rates entered shall include, third party fees, levies, input costs, labour and contractor's overheads and profits.					
Item	**Item Description**	**Unit**	**Quantity**	**Unit Rate**	**Amount**
BILL 1	**Preliminary & General Items**				
1.1	**Publicity Sign Board**				
1.1	Fabricate erect and maintain public sign post 1200x1200x1.5mm metal sheet, 1500mm above ground level. It should be anchored 600mm deep motorised in mass concrete and well supported with 50x25mm RHS frame to detail as provided in the drawing and as instructed by the	No	1		
1.2	Allow Kshs. 210,000 for Technical Supervision				210,000.00
	Total carried from Bill 1 to Main summary				
BILL 2	**BH EQUIPPING SOLAR PUMPING SYSTEM**				
A	Supply, Deliver and Install on the steel tower, Solar Array System of total output 28125Watts, including high-efficiency tier 1 monocrystalline modules As Jinko Solar 625W monofacial panels in 3string of 45panels with maximum string voltage VOC ≤850 VDC as approved using 6 mm sq dc cable and MC4 terminated on both sides to be mounted on the structure	W	28,125		
B	Fabricated Steel Tower, use square tubes, 4" x 4" x 4mm, for solar Array System, minimum height 5 meters,well oriented towards north-south direction, tower inclination angle 10-15 degrees and a solar controller box 1000mm by 500mm by 300mm well ventilated to be included. To be installed as directed by the supervising Engineer	NO	1		
C	Supply and install DC enclosure complete with inline 1100VDC fused isolator	NO	1		
D	Supply install, test and commission 6mm PV Cable Single Core1000VDC Tinnd Copper ; Insulation: XLPO ; Insulation Color: Red and black in a 25mm HG PVC conduit	M	180		
E	Supply and lay Armored Cable, 10mm^2 X 4 core copper cable in a 25mm HG PVC Conduit	M	50		
F	Allow for system earthing, lightening arrestor and balance of system installation and equipotential bonding.	Lot	1		
G	Allow for installation sundries as Hg flex conduit, cable ties, MC4 Connectors, cable lugs cable clips and all necessary assortment	Lot	1		
2.08	Supply and Deliver a solar three-phase submersible electric pump with a flow rate of 8 cubic metre per hr at 370 meters Preferably DS 17-34; 18.5kW ~ or equivalent approved. The pump impellers and pump shaft should be of Stainless Steel. Provide Copies of Pump Characteristic /Performance Curves (Brochures) for approval. Install and test as directed and approved by the Supervising Engineer	No	1		
2.09	Supply a three phase 18.5kw motor compatible to item above, Dayliff or equivalent approved by the Supervising Engineer	No	1		
2.10	Supply a 4PD sacrificial anode compatible to item 2.03 above, Pedrollo or equivalent approved by the Supervising Engineer	No	1		

2.11	Supply, Deliver & Install an AC/DC Solar inverter Incorporating: - Hybrid Capability with the option of DC solar power, generator or main grid power inputs, patented MPPT fast response, good stability and up to 99% efficiency, rated power 22kw, Detachable Control Interface, Settable Min/Max Frequency & open Circuit Voltage, Display of operating Parameters, including frequency, voltage, amperage, input power & pump speed; Display of Historical Data, including Energy generation, maximum power & operating times; Protection against over/under voltage, over current, system overload and module over temperature; Fault detection with error code display; Display of dry run sensors and automatic controls (SV3/22T) or equivalent as approved by the Supervising Engineer	No.	1		
2.12	Electrodes	set	1		
2.13	PV disconnect switch 16Amps, single	No	1		
2.14	Sensor Cable, Twin, Double Insulated, 0.75mm^2	M	210		
2.15	Submersible Cable 4 mm 4core	m	210		
2.16	Armored Copper Cable, 4mm^2 X 4 core	M	30		
2.17	Armored Copper Cable, 1.5mm^2 X 2 core	M	30		
2.18	UPVC Conduit, HG, 1"Ø	No.	2		
2.19	Airline Pipes 3/4" Class D	No.	35		
2.20	Borehole cover, slab and well end Sundries and fittings as shall be directed	Item	1		
2.21	Borehole chamber with cover/ lid as per the provided drawing	No.	1		
2.22	GI Borehole Pipes, 21/2"Ø X 6m, STD	No.	21		
2.23	Adaptor set, 63mm	No.	1		
2.24	Splicing Kit, medium	No.	1		
2.25	Cold water smart meter1¼" c/w fittings	No.	1		
2.26	PPR pipes 1¼"	m	4		
2.27	Non return Valve 21/2"Ø	No.	1		
2.28	GI equal tee 21/2"Ø	No.	1		
2.29	Gate valve pegler 21/2" c/w hex niples	No.	1		
2.30	GI Union 21/2"Ø'	No.	1		
	Total for Bill 2 carried to Summary				
BILL 3	**PIPELINE**				
3	**LINE TO KWA WALA PRIMARY SCHOOL**				
	CLASS D: DEMOLITION AND SITE CLEARANCE				
	The rate quoted is for site clearance and demolition along construction wayleave. Rate shall be deemed to include removal of the material, natural and artificial articles, objects and obstructions which are above the original surface and carting away to tips, identified by the contractor in liaison with the Local Authority				
	General clearence				
3.01	Site clear and excavate to pipe invert level 600 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	1,200		
	CLASS I: PIPEWORK - PIPES				
	The rate quoted is for supply and transport to site storage, transport from site storage, excavate, lay and joint pipes complete with all jointing materials and but fusing. The rate is deemed to include excavation, bed lining, installation and backfilling of the pipe trenches. keep trenches and ther excavations free of water.				
3.02	PN10 OD63mm HDPE PE100 ISO4427	m	1,200		
3.03	Allow for assorted connectors and adaptors as shall be approved	item			

	CLASS J: PIPEWORK - FITTINGS AND VALVES				
	The rate quoted is for provision and fixing				
	Junctions and branches				
3.04	OD 75mmx50" tee with all the necessary accessories for airvalves and washouts	nr	4		
	Airvalves				
3.05	Supply and install DN50mm anti-shock/ anti-surge Air Valves as per the attached technical specifications with threaded or flanged base , c/w isolating valve, including tees and reducers for connecting Airvalve	nr	2		
	Sluice Valves				
3.06	Supply and install DN50 PN16 gate valves Pegler or equivalent approved for Air Valves and Washouts	nr	2		
	CLASS K: PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES				
	The rate quoted is for chambers, culverts, crossings and reinstatements and other ancilleries as specified.				
	Air Valve/Washout/Sluice Valve Chambers				
3.07	Construct 900mm by 900mm masonary valve chamber. Depth not exceeding 1m, all in accordance with details shown on drawings. Include for provision and fixing of cast iron step irons and heavy duty rectangular mild steel frame with locking devices as per details on drawing	nr	4.00		
	Marker Posts				
	Construct concrete marker posts and install along the water supply pipeline, all in accordance with details shown on drawings. (Reinforced concrete 1:2:4(class 20/20, bars D12), as per details on drawing				
3.08	Pipeline marker post inscribed WL	nr	2.00		
3.09	Air valve marker post Inscribed AV	nr	2.00		
3.1	Washout marker post inscribed WO	nr	2.00		
	Amount for Bill 3 carried to Summary				
BILL 4	**WATER POINT- WATER KIOSK WITH 1.5M HIGH TANK PLATFORM AND 10M3 PLASTIC TANK**				
4	**FOUNDATION**				
4.01	Cut to spoil top soil n.e. 150mm below g.l. over Kiosks and fetching bay areas into a permanent heap	m2	7.0		
4.02	Cut to spoil a strip foundation trench n.e. 600mm below g.l.	m3	2.4		
4.03	300mm thick hardcore filling well watered and compacted in layers of 150mm maximum thickness to make up levels	m3	3.7		
4.04	50mm thick quarry dust/Murram blinding to surfaces of hardcore	m2	7.0		
4.05	Chemical anti-termite treatment (as gladiator or equally approved) executed complete by an approved specialist under ten (10) year guarantee to surfaces of blinded hardcore	m2	7.0		
4.06	1000gauge polythene or any other equally approved Damp proof membrane laid under surface bed with 300mm side and end laps(measured nett - allow for laps)	m2	9.0		
4.07	Natural stone walling, roughly chisel dressed on both sides and jointed in cement and sand (1:3) mortar 200mm foundation walling	LM	10.0		
4.08	Mass concrete class 15 (1:4:8) in 50mm thick surface blinding under strip footings	m3	0.4		
4.09	Mesh fabric reinforcement A98 to B.S 4483 (measured nett allow for laps)	m2	9.0		
4.1	100mm thick 1:2:4 (C20/20) vibrated RC floor slab over Kiosks and fetching bay areas	m2	9.0		
4.11	25mm thick Cement sand screed (1:3) finished with steel float.	m2	9.0		

4.2	**WALLING**				
4.21	Hessian based bituminous felt DPC 225mm wide horizontally placed below masonry walling	LM	10.0		
4.22	Dressed Natural stone / Block walling: 200mm thick, bedded and jointed with cement and sand mortar (1:3), reinforced with 20SWG hoop iron in alternate courses to external wall including gable ends	m2	30.0		
4.23	Vibrated reinforced concrete 1:2:4 (class 20 (20/20mm) in Ringbeams	m3	0.5		
4.24	High yield square twisted steel reinforcement bars to BS 4461 including for cutting, bending to shape, tying, hooking and spacer blocks as described in:				
4.25	8mm diameter ditto	KG	10.0		
4.26	12mm diameter ditto	KG	50.0		
4.27	Sawn formwork to Sides of ringbeam	m2	2.7		
4.28	Horizontal key pointing in masonry joints in external wall surfaces	m2	27.0		
4.29	15mm thick Cement sand plaster to walls surfaces (1:3) finished to walls to receive paint internally	m2	30.0		
4.3	**ROOFING:**				
4.31	Wrought Cypress Timber 4x2	LM	17.0		
4.32	Wrought Cypress Timber 3" x 2"	LM	39.0		
4.33	Wrought Cypress Timber 2" x 2"	LM	39.0		
4.34	G30 2m Corrugated Iron Sheets.	m2	4.0		
4.35	Roofing Nails	Kg	1.5		
4.36	Assorted Ordinary Wire Nails	Kg	5.0		
4.37	2.1M x 1M Standard steel door complete with frame, hinges latch bolts and padlock.	No	1.0		
4.38	1M X 1M Standard steel window complete with frame hinges and latch bolts.	No	1.0		
4.4	**FINISHES:**				
4.41	ROOF: 8" x 1" planed timber fascia board	LM	36.0		
4.42	METAL SURFACES: Prepare and apply three coats plastic enamel paint to General metal surfaces (both sides).- (Red oxide primer glossy)	m2	3.5		
4.43	INTERNAL PLASTERED WALLS: Prepare and apply three coats plastic silk emulsion paint to Plastered wall surfaces internally	m2	29.0		
4.44	EXTERNAL WALLS: Prepare and apply three coats permaplast external wall paint to Rendered sides of beam and walls externally and allow for branding of the kiosk as directed by the supervising engineer	m2	7.0		
4.5	**PLUMBING:**				
4.51	1.5" diameter uPVC pipe class C	No.	3.0		
4.52	1.5" diameter uPVC Elbow	No	4.0		
4.53	1.5" diameter uPVC couplers.	No.	4.0		
4.54	1.5" by 3/4" reducing socket	No.	1.0		
4.55	Water meter 3/4" dia. Kent	No.	2.0		
4.56	3/4" diameter assorted length G.I nipples	No	5.0		
4.57	3/4" diameter GI Pipe class B	No.	1.0		
4.58	3/4" diameter Gate valve-peglar type	No.	3.0		
4.59	3/4" diameter valve sockets	No	2.0		
4.6	3/4" diameter GI union.	No.	4.0		
4.61	3/4" diameter GI Elbow	No	4.0		
4.62	Pipe joining material:				
4.63	Boss white for G.I Pipes	Kg	0.5		
4.64	Solvent Cement	Kg	0.5		
4.65	Coolant	Lts	1.0		
4.66	Sealing thread	Pcs	2.0		
4.67	Supply, Deliver & Install 1no. 10m3 Double Laminated Plastic Water Tanks, c/w GI Inlet, Outlet & Overflow Fixtures, 2" dia.	Item	1		
4.68	Construct 1no. 1.5m high masonry platforms with reinforced concrete slab, ensure to accommodate the tank comfortably.	Item	1		

	Sub-total for water kiosk				
	Total for 2 water point				
	Sub Total Water Points				
BILL 5	**FENCING AT SOURCE**				
5.1	Supply and install 2.1 m high x 14 gauge chainlink complete with 14 Gauge x 4 strand galvanised plain wired fencing and 2 stands barbed wire at cranked section (430mm) complete with complete with 100 x 125 mm cranked precast concrete posts anchored 600mm deep and at 2.5m centres mortised in mass concrete sorround. Anchor the chainlink with 200x150mm mass concrete class ratio 1:3:6. Inlcude stainer posts at corners and after every 30m	LM	60		
5.2	Construct 4m wide 2.1 m height double leaf opening steel gates clad in high grade mesh wire, anchored on reinforced concrete columns using 4 No. Y10 Rebars each column c/w padlocks	No.	1		
5.3	Supply, install, and test one CCTV 4G camera unit with an upper static part and lower remote PTZ part, complete with two stand-alone 400 W flood lights, cabling, power connections and all accessories.	Item	1		
	Total for fencing one site				
	SUMMARY				
BILL	**BILL DESCRIPTION**				**AMOUNT**
BILL 1	PRELIMINARIES AND GENERAL ITEMS				
BILL 2	HIGH LIFT SOLAR PUMPING SYSTEM				
BILL 3	PIPELINE				
BILL 4	WATER POINT				
BILL 5	FENCING AND SURVEILLANCE AT SOURCE				
	SUB TOTAL				
	Contigencies				
	Allow a provisional sum of Kshs. 30,000 for contigencies				30,000.00
	TOTAL				
	ADD				
	Public Procurement Capacity Building Levy (0.03%)				
	TOTAL III				
	ADD VAT (16%)				
	GRAND TOTAL FOR BUILDER'S WORK				