

KIKUU KAWALA WATER PROJECT - NZAUI KILILI KALAMBA WARD BoQ

ALL PRICES ARE INCLUSIVE OF TRANSPORT, LABOUR COSTS, PROFITS & OVERHEADS

BILL OF QUANTITIES

Item	Description	Unit	Qty	Rate (Ksh)	Amount (Kshs)
Bill 1	General Items/ Preliminaries				
1.1	Supply and erect publicity sign board on 1.5m x 1.2m metal sheet approximately secured on a 40 mm x 3mm thick steel frame at least 2m above the ground level and leveled as directed	No	2		
	Sub total carried for collection in the summary page				-
Bill 2	100 CUBIC METER RC SUMP				
Item	Item Description	Unit	Qty	Rate	Amount
2.1	Earth works				
2.12	Allow for setting out and probing for water sump by the supervising engineer	Item	1		
2.13	Excavate wet sand and soil to reduce levels to create adequate working area	CM	200		
2.14	Ditto e.o excavations in hard rock including making good	CM	5		
2.15	Keep all excavations free of water by either bailing, pumping, diverting river flow or other means including during excavation and construction	Item	1		
2.16	Allow for planking and strutting	SM	96		
2.17	Backfill and ram as directed external sides of wall	CM	150		
2.18	Spread/ load and cart away surplus excavated materials from site as directed	CM	100		
2.2	Reinforcement bars (rate to include binding wires)				
	Provided handle, cut, bend and fix the following reinforcement bars as stated in the bending schedule or as directed by the Engineer (rate to include binding wires and drilling in rock)				
2.21	16mm diameter bars in beams and column	Kgs	860		
2.22	12 mm diameter for slabs (top and bottom mesh both ways for top slab) and walling	Kgs	1100		
2.23	10mm diameter bars as stir ups, walling and top bar for top slab	Kgs	1399		
2.3	Concrete work: Use rapid hardening cement				
2.31	Construct circular/rectangular, vibrated concrete class 25 ring beam and cross beams as footing as per the provided drawing	CM	4		
2.32	Pack 250-300mm approved hardcore to make up levels	SM	50		

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2.33	Construct reinforced concrete column (pillar) 450x450mm with 8 No D16 rebars at the centre of the sump floor as per the provided drawing	CM	1		
2.34	Reinforced concrete Class 20 mix 1:2:4 for tank 200 mm slab, 200 mm walling, 8 No 200 x 200 mm columns and beams with provisions for water seepage/penetration on walls as directed	CM	34		
2.4	Formwork				
2.41	Sawn timber formwork for rc walling	SM	112		-
2.42	Allow for cost of formwork for roof slab	SM	52		
2.43	Extra over ditto for manhole size 600 x 600mm in roof slab	No.	2		
2.44	Formwork for columns and beams	SM	12		
2.5	Miscellaneous works				
2.51	Construct and install reinforced concrete manhole cover 600mm x 600 mm of the roof slab reinforced concrete class 25 as directed. Use D10mm c/c 150mm for main both main and distribution bars as directed	No.	2		
2.52	1500mm x 300mm internal stainless steel ladder anchored in wall or as shall be directed	No.	1		
2.6	Infiltration galleries				
2.61	Excavation/Backfilling				
2.62	Excavation in wet sand n.e 4m, keeping excavation free from general waters. Return fill material and spread surplus as shall be directed	CM	48		
2.63	Using perforated fused UPVC pipe and fittings 200mm diameter PN10 allow for installation of infiltration gallery including end caps, geotextile cloth wrapping 2 rounds graded gravel packing and anchorage as per the drawings provided and as instructed by the project engineer	LM	24		
	Sub Total carried for collection in the summary page				-

BILL C) PUMPING SYSTEM					
S NO.	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT KSHS.
3.1	Fabricate a firm rust-free stand 300 mm height to hold pump and motor inside the sump	No	1		

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3.2	Supply, Deliver, Install and Test a Submersible Multistage Centrifugal Pump Set of Duty Point: - 15 m ³ /hr at a Total Head of 100 meters and 7.5 kw motor. The pump Efficiency at duty point should not be less than 50%. The pump Impellers should be of Stainless Steel. Provide Copies of Pump Characteristic /Performance Curves (Brochures). Install DS 14 - 25 or equivalent as approved by the Supervising Engineer	No.	1		
3.3	Supply, Deliver & Install a AC/DC inverter for solar powering AC motor Incorporating: - Hybrid capability with the option of DC solar power, generator or mains grid power inputs with the following functions Settable minimum and maximum frequency and open circuit voltage, Display of operating parameters including frequency, voltage, amperage, input power and pump speed, Protection against over and under voltage, over current, system overload and module over temperature, Fault detection with error code display and Selectable hybrid modes that prioritise solar supply as well as maximise output through optimal blending of both power supplies . Install SV3/7.5T or equivalent as approved	No.	1		
3.4	Circuit Disconnect Switch, 63Amps	No.	1		
3.5	Three phase 4 mm ² X 4 core submersible Cable or armoured cable anchored appropriately	LM	160		
3.6	Sensor Cable, Twin, Double Insulated, 1.5mm ²	LM	160		
3.7	Adaptor Set	Set	1		
3.8	Cable Glands, 25mmL	No.	4		
3.9	Cable Glands, 20mmL	No.	2		
3.1	Splicing Kit, Medium Packet	No.	2		
3.11	Cable Ties, Large Packet, Manila	No.	2		
3.12	Insulating Tapes, Large	No.	20		
3.13	Non return valve 3" metallic only	No.	1		
SOLAR PANELS & STRUCTURE					
Non Vatable					
A	Supply, Deliver and Install on the steel tower, Solar Array System of total output 11,900 Watts, including high-efficiency tier 1 monocrystalline modules As JA Solar 700W panels in 1 string of 17 panels 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	11900		

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B	Supply, instal and fabricate solar structure on firm reinforced concrete class 20 1:2:4 ratio foundation 2000 X 600 mm holes, use concrete poles minimum 10 m pole length 190 mm top diameter clamping length 1.6 m, use 8 No. 100 x 100 x 3 mm SHS (as in the drawing)	Item	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	LM	40		-
E	Allow for system earthing, lightening arrestor and balance of system installation and equipotential bonding.	Lot	1		-
Sub Total Carried for collection in summary page				KSH.	

BILL	D) RISING MAIN & DISTRIBUTION PIPELINE				
S	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
NO.					KSHS.
	<i>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, supply and transport to site storage, transport from site storage, excavate, lay and joint pipes complete with all jointing materials. The rate is deemed to include excavation, bed lining, installation and backfilling of the pipe trenches. keep trenches and their excavations free of water.</i>				
	RISING MAIN TO KAWALA PRIMARY SCHOOL				
4.1	Bush clearing and excavation to pipe invert level as per engineer's specifications (trench minimum depth 750 mm), lay, test pipeline and backfill to ground level for item below	LM	2700		
4.2	Supply, deliver, install and test O/D 90 mm (3") HDPE pipes PN16 as per KS ISO 4427:2007. To be laid in the same trench as item 4.1 above	LM	600		
4.3	Supply, deliver, install and test O/D 90 mm (3") HDPE pipes PN12.5 as per KS ISO 4427:2007. To be laid in the same trench as item 4.1 above	LM	2100		

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4.4	Butt fusion for item 4.2 and 4.3 above	Item	1		
4.5	3" tee connection for installation of 1" air valve along the rising main (not clamp)	No	2		
4.6	Supply, deliver, install and test O/D 32 mm (1") air valves	No	2		
DISTRIBUTION PIPELINES					
4.7	Supply, deliver, install and test O/D 63 mm (2") HDPE pipes PN10 as per KS ISO 4427:2007. To be laid in the same trench as item 4.1 above to Jasho	LM	1900		
4.8	Clearing site and excavation to pipe invert level as per engineer's specifications (trench minimum depth 600 mm), lay, test pipeline and backfill to ground level for item 4.9, 4.10 and 4.11 below	LM	4000		
4.9	Supply, deliver, install and test O/D 63 mm (2") HDPE pipes PN10 as per KS ISO 4427:2007. To be laid in the same trench as item 4.8 above from elevated tank	LM	1000		
4.1	Supply, deliver, install and test O/D 50 mm (1.5") HDPE pipes PN10 as per KS ISO 4427:2007. To be laid in the same trench as item 4.8 above to Kanzili	LM	1400		
4.11	Supply, deliver, install and test O/D 50 mm (1.5") HDPE pipes PN10 as per KS ISO 4427:2007. To be laid in the same trench as item 4.8 above from AIC Makutano tee to Kimemua water point	LM	1600		
4.12	Supply, deliver, install and test O/D 50 mm (1.5") HDPE straight connectors	No	30		
4.13	Supply, deliver, install and test O/D 63 mm (2") HDPE straight connectors	No	29		
4.14	Supply, deliver, install and test 2" Gate Valve to be connected as per supervising engineer's instructions c/w fittings	No	3		
4.15	Supply, deliver, install and test 4" GI 4 way tee reducing to 63mm and 50 mm to be connected to the distribution lines	No	1		
4.16	Supply, deliver, install and test 1" Air Valve to be connected using HDPE equal tee to the distribution pipeline (not clamp)	No	3		
4.17	Clearing site and excavation to pipe invert level as per engineer's specifications (trench minimum depth 600 mm), lay, test pipeline and backfill to ground level for item 4.18 below	LM	500		



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4.18	Supply, deliver, install and test O/D 40 mm (1.25") HDPE pipes PN10 as per KS ISO 4427:2007 to Kawala Primary, Kawala secondary, Kawala CTTI, Kawala demo farm and Kawala Dispensary	LM	500		
4.19	Supply, deliver, install and test O/D 40 mm (1.25") gate valves	NO	5		
4.2	Supply and install standard pre-cast reinforced concrete pipeline mark posts of 750mm height along the pipeline	No.	12		
4.21	Allow for construction of standard water point c/w gl fittings, water meter, gate valves and 2 No. water taps 3/4" as instructed by supervising engineer at Kanzili and Kimemua	Item	2		
4.22	Construct a 500 mm by 500 mm air valve chamber	No.	5		
	Sub Total Carried for collection in summary page			KShs.	-

BILL 5) 1NO X 50M3 SBS TANK 6M TOWER					
No.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				KShs.	KShs.
5.1	Design, fabricate and instal a 6M tank structure Tower supporting 50 m3 tank Comprising of firm reinforced concrete foundation / concrete base, steel plate and holding down bolts, columns (minimum 125 x 125 x 6 mm SHS), UB horizontal top supports, horizontal and diagonal bracings, hopped cat ladder, top walkways top walkways with 2.1 mm thick chequered plates, safety hand railings, and seating plate	No	1		
5.2	Design, fabricate and instal a circular SBS Tank placed on the 6 m tower complete with walling made of Galvalume steel panels with thickness conforming to SANS 9364, steel grade G300, Galvalume (Zinc/ Aluminum Alloy), AZ150 heavy duty protective coating, body Liner, hot dipped galvanized trusses and Galvalume steel corrugated sheets dome roof & the following listed accesories 50 M3= 50,000 ltrs (Gross Capacity). 1 No. Access Hatch with hook on Ladder, 1No. Inlet Noz 50NB, 1No. Outlet Noz, 80NB, 1 No. O/flow, - 80NB, 1 No. Water Level Indicator, 1 No. Ventilator Static - 76 mm, internal & external ladders, safety cage with lockable door. Ensure adherence to relevent standards - ISO 9001:2015 and ISO 45001:2018	No	1		

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5.3	Test for water tightness, cleaning and sterilization of the tank	Item	1		-
	pipng and plumbing				
5.4	2.5" G.I Class B inlet pipe 6 m lengths c/w fittings, cutting and welding	LM	12		-
5.5	4" G.I Class B G.I outlet pipe 6 m lengths c/w fittings, cutting and welding	LM	12		-
5.6	2" G.I Class B G.I overflow pipe 6 m lengths c/w fittings, cutting and welding	LM	12		-
5.7	Supply, deliver, install and test cast iron metallic sluice valve 4" (DN100mm) metal PN16; stainless steel spindle double flanged with gaskets, bolts and nuts	No	1		-
5.8	Allow for publicity branding c/w logos,	Item	1		
	Sub total carried for collection in the summary page				-

BILL	6) VALVE CHAMBER				
No.	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				KShs.	KShs.
	Supply materials and provide personnel to construct a gate valve chamber (as in the attached drawing)				
6.1	Cut the spoil upto 300mm below g.l. over the borehole chamber area and remove all vegetable soil to temporary spoil heap.	M ³	0.3		
6.2	Excavate foundation from stripped level over the borehole chamber site to depth n.e. 0.6m deep 300 mm wide and dispose soil as directed	M ³	1		
6.3	Mass concrete mix 1:4:8: in 50mm concrete slab	M ³	0.1		
6.4	225mm thick dressed quarry stone walling	M ²	5		
6.5	Provide and instal a lockable double steel Cover c/w padlock or a reinforced concrete cover as instructed	No.	1		
6.6	EXTERNAL PLASTER - 20mm thick 1:2 cement sand to exterior face of the valve chamber wall	M ²	4		
	Total for 1 No valve chamber				-
	Sub total carried for collection in the summary page (for 3 No)	No.	3		-

BILL	G) STANDARD WATER KIOSKS				
NO	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT KSHS.



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7.1	Supply, deliver all necessary materials as below and construct A 2M×2.5M kiosks as per the drawing at Kawala Primary and Jasho market				
	FOUNDATION				
7.1.1	Cut to spoil top soil n.e. 150mm below g.l. over Kiosks and fetching bay areas into a permanent heap	SM	15		
7.1.2	Cut to spoil a strip foundation trench n.e. 600mm below g.l.	CM	1.5		
7.1.3	300mm thick hardcore filling well watered and compacted in layers of 150mm maximum thickness to make up levels	CM	2		
7.1.4	50mm thick quarry dust/Murram blinding to surfaces of hardcore	SM	15		
7.1.5	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	SM	15		
7.1.6	1000 gauge polythene or any other equally approved Damp proof membrane laid under surface bed with 300mm side and end laps(measured nett - allow for laps)	SM	15		
7.1.7	Natural stone walling, roughly chisel dressed on both sides and jointed in cement and sand (1:3) mortar 200mm foundation walling	LM	9		-
7.1.8	Mass concrete class 15 (1:4:8) in 50mm thick surface blinding under strip footings	CM	0.35		-
7.1.9	Mesh fabric reinforcement A98 to B.S 4483 (measured nett-allow for laps)	SM	15		-
7.1.10	100mm thick 1:2:4 (C20/20) vibrated RC floor slab over Kiosks, fetching bay areas and ramp at the door	CM	2		-
7.1.11	25mm thick Cement sand screed (1:3) finished with steel float.	SM	15		-
	Item total				-
BILL 7.2	WALLING				
7.2.1	Hessian based bituminous felt DPC 225mm wide horizontally placed below masonry walling	LM	10		
7.2.2	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	SM	24		
7.2.3	Vibrated reinforced concrete 1:2:4 (class 20 (20/20mm) in Ringbeams	CM	0.5		

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7.2.4	High yield square twisted steel reinforcement bars to BS 4461 including for cutting, bending to shape, tying, hooking and spacer blocks as described in:				
7.2.5	8mm diameter ditto	KG	10		
7.2.6	12mm diameter ditto	KG	50		
7.2.7	Sawn formwork to Sides of ringbeam	SM	3		
7.2.8	Horizontal key pointing in masonry joints in external wall surfaces	SM	24		
7.2.9	15mm thick Cement sand plaster to walls surfaces (1:3) finished to walls to receive paint internally	SM	24		-
	Item total				-
ITEM 7.3	ROOFING:				
7.3.1	50 x 50 mm purlins	LM	15		-
7.3.2	75 x 50 mm rafters and wall plate	LM	15		-
7.3.3	200 x 25 mm fascia board	LM	20		-
7.3.4	G30 2m Corrugated Box profile iron Sheets.	SM	10		-
7.3.5	Roofing Nails	Kg	2		-
7.3.6	Assorted Ordinary Wire Nails	Kg	4		-
7.3.7	2.1M x 1M Standard steel door complete with frame, hinges latch bolts and padlock.	SM	1		-
7.3.8	1M X 1M Standard steel window complete with frame hinges and latch bolts.	SM	1		-
	Item Total				-
ITEM 7.4	FINISHES:				
7.4.1	METAL SURFACES: Prepare and apply three coats plastic enamel paint to General metal surfaces (both sides).- (Red oxide primer glossy)	SM	4		-
7.4.2	INTERNAL PLASTERED WALLS: Prepare and apply three coats plastic silk emulsion paint to Plastered wall surfaces internally	SM	24		-
7.4.3	EXTERNAL WALLS: Prepare and apply three coats permaplast external wall paint to Rendered sides of beam and walls externally	SM	7		-
7.4.4	75 mm high mortar skirting	LM	9		-
7.4.5	Branding as directed inclusive of logos	No	1		-
	Item total				-
ITEM 7.5	PLUMBING:				
7.5.1	Supply, Deliver, joint and test 1.5 "dia. G.I. Pipes, Class 'B', 6m Long, for outlet of tanks to inside the kiosk	No.	2		-
7.5.2	1.5" diameter GI elbow	No	3		-
7.5.3	1.5" diameter GI union sockets	No.	4		-

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7.5.4	1.5" diameter Gate valve	No.	1		-
7.5.5	Water meter 1.5" dia.	No.	1		-
7.5.6	1.5" by 3/4" reducing socket G.I	No.	1		-
7.5.7	3/4" diameter assorted length G.I nipples	No	5		-
7.5.8	3/4" diameter GI Pipe class B	No.	1		-
7.5.9	3/4" diameter Gate valve-peglar type	No.	2		-
7.5.10	3/4" diameter valve sockets	No	2		-
7.5.11	3/4" diameter GI union.	No.	4		-
7.5.12	3/4" diameter GI Elbow	No	4		-
7.6	Pipe joining material:				
7.6.1	Boss white for G.I Pipes	Kg	1		-
7.6.2	Solvent Cement	Kg	1		-
7.6.3	Coolant	Ltrs	1		-
7.6.4	Sealing thread	Pcs	2		-
	Item total				-
	Sub Total for 1 No Water kiosk				-
	Sub Total for 2 No Water Kiosk Carried for collection in the Summary page		2		-

BILL 8) 10 CM TANK PLATFORM

No.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				KShs.	KShs.
	Supply materials and provide personnel to construct a tank base platform 1 m high to hold a 10 m ³ plastic water tank (as in the attached drawing) at Jasho, Kanzili, Kawala dispensary and Kimemua water point				
8.1	Cut the spoil upto 200mm below G.L over tank base and remove all vegetable soil to temporary spoil heap.	M ³	1.5		
8.2	Excavate foundation from stripped level over the tank site to depth n.e. 0.6m deep 300 mm wide and dispose soil as directed	M ²	10		
8.3	Mass concrete mix 1:4:8: in 50mm thick blinding to hardcore	M ³	0.4		
8.4	225mm thick dressed quarry stone walling	M ²	26		
8.5	Provided handle, cut, bend and fix 8 mm deformed steel bars on all alternate course of the wall	Kgs	28		
8.6	Damp proof course	m	9.5		
8.7	Provide, pack and compact hardcore in 250 mm layers to fill the tank platform	M ³	9		
8.8	Provided handle, cut, bend and fix 8 mm deformed steel bars on top slab	Kgs	18.96		
8.9	Vibrated reinforced concrete mix 1:2:4 in 100 mm thick for slab	M ³	1		
8.1	EXTERNAL PLASTER - 20mm thick 1:2 cement sand to exterior face of all wall	m ²	10		

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8.11	Supply, Deliver & Install a 10 m ³ Double Laminated Plastic Water Tank, c/w G.I 1.5" dia. Inlet, Outlet & Overflow Pipes. To be mounted on 1.0 m high masonry tank platform	No.	1		
	Sub Total for 1 No Tank platform				-
	Sub total carried for collection in the summary page (4 No Tank platform)	No.	4		-

BILL 9 AGRICULTURE AND FORESTRY COMPONENT

BILL NO.	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9.1	PROMOTION OF COMMUNITY KITCHEN GARDENING				
9.2	Supply, deliver Cone gardens (conical bags): 6 polythene sheets of gauge 1mm, bottom one with 4.71M diameter and the 6th with 30cm diameter of 20cm width/or height pinned and screwed with a 2inch long screws as shall be instructed	No	30		
9.3	Supply, deliver and instal Cone gardens (of Spec in item 9.2) at CTTI centre	No	3		
9.4	Supply and deliver Hybrid Tomato seeds 50 grams	satchet	1		-
9.5	Supply and deliver Hybrid Kales seeds 50 grams	satchet	1		
9.6	Supply and deliver Spinach seeds 50 grams (Local)	satchet	1		
9.7	Supply and deliver Amarathus (Mchicha) seeds 50 grams (Local)	satchet	1		
9.8	Supply and deliver Coriander (Daniah) seeds 50 grams (Local)	satchet	1		
9.9	Supply and deliver jembe fixed with handle	No	1		-
9.10	Supply and deliver plastic Watering can	No	1		-
9.11	Supply and deliver Wheelbarrow (Jua kali, heavy gauge, big wheeled)	No	1		-
9.12	Supply and deliver jua kali Rake with fixed metallic handle	No	1		-
9.13	Supply and deliver spade with fixed metallic handle	No	1		-
9.14	Supply and deliver Knapsack sprayer – Jackto type (16 litres)	No	1		-
9.15	Supply and deliver Fertilizers- DAP 50 kg bag	bags	1		-
9.16	Supply and deliver Fertilizers- CAN 50 kg bag	bags	1		-
9.17	Supply and deliver quarter litre Foliar feed (100 mls high N and 150mls high K) as shall be instructed.	Litres	0.25		-
9.18	Supply and deliver quarter litres of Insecticides as shall be instructed	litres	0.25		-
9.19	Supply and deliver Fungicides as shall be instructed	litres	0.25		-
9.20	Supply and deliver Stickers as shall be instructed	Mls	50		-
9.21	Supply and deliver Growth regulators as shall be instructed	Mls	50		-

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9.22	Supply and deliver 5 tons of forest soil at the CTTI centre as shall be instructed	tons	5		-
9.23	Supply and deliver 4 tons of farm animal manure at the CTTI centre as shall be instructed	tons	5		
	Land Rehabilitation through Pasture Establishment				
9.24	Supply and deliver 200kg Pasture seeds (Cenchrus Ciriaris-(50kgs), Eragrostis Superba-150kg (Ndata Kivumbu and Mbeetwa).	Kg	151		-
9.25	Construct an animal water trough 5M long and 1M wide with elevation of 1.5 ft height with one meter stone pitched area round and with wash out and a regulating unit as instructed .	No	1		
	SUB TOTAL				-
	ESTABLISHMENT OF A DRIP IRRIGATION SYSTEM AT CTTI				
Item	Description	Unit	Qty	Rate (KShs.)	Amount (KShs.)
10.0	Preliminaries and General				
10.1	Fabricate, supply and erect a sign post with lettering and painting as per the drawings and as directed by the site engineer.	No.	1		-
	Sub Total				-
10.1	Installation of shed netting				
10.1.1	Supply deliver and install galvanized furniture tube posts complete with installed profile and W- wire of 25mm Dia. x 2,000mm height as shown in the provided drawings and as instructed by the site engineer	No.	84		-
10.1.2	Supply, deliver and install galvanized furniture tube posts of 25mm Dia. x 2,000mm height to provide shed netting support within the plot area as shown in the drawings and as instructed by the site engineer	No.	50		-
10.1.3	Supply, deliver and install galvanized tube of 25mm Dia. as rafters for roof section as shown in the drawings and as instructed by the site engineer	R-m	324		-
10.1.4	Supply, deliver and install shed netting 55% apperture opening, to cover the top and sides of the demonstration plot	m ²	1950		-
10.1.5	Supply, deliver and install galvanized furniture tube of 25mm Dia. for support and stabilizing the structure as shown in the drawings and as directed by the site engineer	R-m	340		-
10.1.6	Allow for installation of access door of dimensions 900mm x 1,200mm complete with locking mechanism and padlock with a set of keys as per the drawings and as directed by the site engineer	No.	2		-

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10.1.7	Supply and install the mass concrete in 1:3:6 for posts anchoring and construction of foot bath of internal dimension of 900mm length x 600mm width x 90mm depth and having wall thickness of 50mm and base thickness of 90mm at the access door entry point as per drawings and as directed by the site engineer	m ³	3		-
	Sub Total				-
10.2	Irrigation water supply				
10.2.1	Allow for Bush clearing of pipeline area 2m wide	m ²	20		-
10.2.2	Excavate in normal soil 0.6m depth x 0.5m width and backfill	m ³	6		-
10.2.3	Purchase, supply, lay, test and backfill of 40mm Dia. HDPE PN10 pipeline as per KS ISO 4427:2007 joint with suitable connectors materials	R-m	30		-
10.2.4	Purchase, supply, install and test Non return valve of Dia. 40mm complete with suitable connectors	No.	1		-
10.2.5	Purchase, supply, install and test HDPE Tee of Dia. 40mm	No.	2		-
10.2.6	Purchase, supply, install and test HDPE 90° Bends of Dia. 40mm	No.	6		-
10.2.7	Purchase, supply, install and test 40mm Dia HDPE adaptors	No.	8		-
10.2.8	Purchase, supply, install and test 40mm Dia HDPE Gate valves	No.	5		-
10.2.9	Purchase, supply, install and test 40mm Dia water meter as directed by the site engineer	No.	1		-
10.2.10	Construct masonry manhole chamber of 900mm x 900mm x 600mm depth complete interior plastered using 1:3 mortar and having a mild steel cover of 16G complete with frame. Include locking mechanism and padlock with set of keys as per the drawings and as directed by the site engineer	No.	2		-
10.2.11	Supply, deliver and install tank stand using Mild steel square hollow section of 75mm x 75mm x 3mm to a height of 1.8m above OGL, installed to a depth of 200mm with concrete surround of 1:3:6 for anchoring. The tank stand to have a plat form of 3m x 3m with timber slats installed of dimension 180mm x 25mm x 3m long. the tank plat form shall have provision to allow for roofing using ordinary corrugated sheets 3/11 profile 30G and shall have guard rails using ms tube of dia 25mm and provision installation of CCTV camera as per drawings and as directed by the site engineer.	Sum	1		-

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10.2.12	Supply, install and test a double layer laminated cylindrical vertical PVC tank of 5,000liters capacity complete with 40mm outlet , 40mm inlet and 40mm overflow . The tank to be interconnected with 40mm HDPE pipes. The tank to have ball float valve with PVC ball installed at the interoir of the tank at inlet port. the tank shall be branded as directed by the site engineer.	No.	1		-
10.2.13	Supply, Install and test a 25mm Dia. Stand GI tap hydrant with hose connector and PVC hose reel 100m long with allowance for connection to the sub mains as instructed by the site engineer	Set	1		-
	Sub total				-
10.3	Infield drip irrigation installation				
10.3.1	Allow provisional sum for tractor ploughing, Setting-out, laying, Excavation and leveling of raised planting beds of dimension 1m wide x 46 long x 0.125m height, with allowance for a walk way of 0.5m wide as per the provided drawings and as instructed by the site engineer	Sum	1		-
10.3.2	Supply, deliver, install and test PVC rigid tubing 16mm complete with suitable connectors to the sub mains as per drawings and as instructed by the site engineer	R-m	60		-
10.3.3	Supply, install and test 16mm take off as per the drawings and as instructed by the site engineer	No.	60		-
10.3.4	Supply, install and test 16mm control valves at the rigid tubings as per the drawings and as instructed by the site engineer	No.	60		-
10.3.5	Supply install and test 16mm pressure compensated flat tape drip line with flow rate of 1liter/ hour and working pressure range of 0.8 - 2,5 bar with a wall thickness of 0.8 - 1.0mm and emmitter spacing of 30cm as per the drawings and as instructed by the site engineer	R-m	2,500		-
10.3.6	Supply, install and test 16mm drip line end cap as per the drawings and as instructed by the site engineer	No.	60		
10.3.7	Supply, install and test 40mm Dia mesh(130microns) inline filter as per the drawings and as instructed by the site engineer	No.	1		
	Sub Total				
10.4	Perimeter fencing				



[Signature]

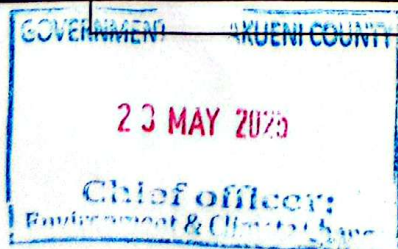
10.4.1	Supply, deliver and erect perimeter fencing using Vibrated reinforced precast concrete posts with cranked ends at 3m spacing to a height of 2.4m using 6ft high, 80mm x 80mm chain link of 14G, 4 strands of barbed wire 12.5G and having a chicken mesh for rodent proofing at the bottom edge of the fencing. Ensure corner posts, straining posts every 30 m and center posts are well propped for stability. Use mass concrete surround of 1:3:6 for for anchoring the posts and the fencing. Allow for access gate of Double leaf gate of overall span of 3m x 2m height with anchoring to concrete plastered pillars using 1:3 mortar mix of 0.3m x 0.3m x 2m height as per the drawings and as instructed by the site engineer.	R-m	200		
	Sub Total				

PURCHASE AND SUPPLY OF AGRO-FORESTRY AND FOREST TREE NURSERY

No	Activity/particular	Unit	Quantity	Rate	Amount
11.1	River sand	Tons	2		
11.2	Assorted Poly bags (5" by 8")	Pkts of 100 pcs each	50		
11.3	Pruning wire	No	1		
11.4	Tree seeds (1kgs of certified Melia volkensii, 1 kgs of Azadiracta indica, 2 kgs of local fresh lemon seeds, 1 kg of certified of grevilliea robusta, 0.5kg certified Carina papaya, 0.5kg certified Malkia papaya)	Kg	6		
11.5	Surgical blades	pkts	1		
11.6	Riparian protection				
11.7	Supply, deliver and plant assorted riparian tree seedlings along Kikuu river as directed by supervising forester (Spp. Ficus cycomorous and accacia xanthophloea	No	200		
	Sub Total				
	Sub total carried for collection in the summary page				-

BILL	PROVISIONAL SUMS	UNIT	QTY	RATE	AMOUNT
9					KSHS.
9.1	Allow a Provisional sum of Kshs 100,000 for Contingencies to be expended by project manager				100,000.00
	Sub Total carried for collection in the summary page				<u>100,000.00</u>

BILL	GRAND SUMMARY	UNIT	QTY	RATE	AMOUNT
					KSHS



(Signature)

A	GENERAL ITEMS/PRELIMINARIES				-
B	100 CUBIC METER RC SUMP				-
C	PUMPING SYSTEM				-
D	RISING MAIN & DISTRIBUTION PIPELINE				-
E	1NO X 50M3 SBS TANK 6M TOWER				-
F	VALVE CHAMBER				-
G	STANDARD WATER KIOSKS				-
H	10 CM TANK PLATFORM				-
I	AGRICULTURE AND FORESTRY COMPONENT				-
J	PROVISIONAL SUMS				100,000.00
SUB TOTAL					100,000.00
Public Procurement Capacity Building Levy order 2023 which is 0.03% of the total cost before tax (Pursuant to PPRA Circular No. 1 of 2024)					
Add 16% of Sub-Total 2 for Value Added Tax					
TOTAL TAKEN TO TENDER FORM					

