	BILL OF QUANTITIES	
	KYANDUU INTERGRATED WATER PROJ	
BILL 1.0	**PRELIMINARIES**	
S/No	**Item description**	**Unit**
1.01	Construction of plant and personnel mobilization to site including setting up camp and demobilization	L/sum
	Setting out	
1.02	Allow (fifty thousand kenya shillings) for setting out of the pipeline route, buildings and water tank extents in the presence of clients appointed site engineer	L/sum
	Sign Post	
1.03	Fabricate and installation of publicity steel sign post as directed by the client's appointed engineer	No.
	Butt fusion (Rate per Joint)	
1.04	Butt fusion of HDPE Pipelines	Item
	Total Carried to Grand Bill Total for BILL No. 1	
BILL 2.0	**RISING MAIN TO 50 CUBIC METERS MASONRY TANK**	
S/No	**Item description**	**Unit**
2.0.1	Bush clear and excavate to pipe invert level 800 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
2.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M
2.0.3	e.o in hard/ rock	m^3

2.0.4	Supply, deliver, fit and test 75mm (2.5") diameter HDPE pipe PN 20 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
2.0.5	Supply, deliver, fit and test 75mm (2.5") diameter HDPE pipe PN 16 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
2.0.6	Supply, deliver, fit and test 75mm (2.5") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
	Supply and fit the following pipe fittings into the pipeline as directed	
2.0.7	2.5" bulk water master meter and associated fittings	No.
2.0.8	Construct a lockable 1.0 m X 1.0 m x 0.5m masonry standard chamber to house master meter as instructed by site engineer	item
	SUB TOTAL	
BILL 3.0	**RETURN PIPELINE FROM 50 CUBIC METERS MASONRY TANK**	
S/NO	**ITEM DESCRIPTION**	**UNIT**
3.0.1	Bush clear and excavate to pipe invert level 800 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
3.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M
3.0.3	e.o in hard/ rock	m^3
3.0.4	Supply, deliver, fit and test 63mm (2.0") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
3.0.5	Supply, deliver, fit and test 63mm (2.0") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
	Supply and fit the following pipe fittings into the pipeline as directed	
3.0.6	2.5" bulk water master meter and associated fittings	No.

3.0.7	Construct a lockable 1.0 m X 1.0 m x 0.5 m masonry chamber to house master meter as instructed by site engineer	item
	SUB TOTAL	
BILL 4.0	**MASAANI JUNCTION PIPELINE**	
S/NO	**ITEM DESCRIPTION**	**UNIT**
4.0.1	Bush clear and excavate to pipe invert level 800 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
4.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M
4.0.3	e.o in hard/ rock	m^3
4.0.4	Supply, deliver, fit and test 63mm (2.0") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
	Supply and fit the following pipe fittings into the pipeline as directed	
4.0.5	2" x 2" PN 16 Saddle clamp for offtake from return pipeline	No.
4.0.6	2" gate valve, hDPE type or as approved by the engineer	No.
4.0.7	2" gate valve, hDPE type or as approved by the engineer	No.
4.0.8	2" master meter and assocaited fittings	No.
4.0.9	Standard valve chambers 1mx1mx 0.5m complete with steel manhole cover and a padlock to house all offtake appliances	Item
	SUB TOTAL	
BILL 5.0	**KILONZO PIPELINE**	
S/NO	**ITEM DESCRIPTION**	**UNIT**
5.0.1	Bush clear and excavate to pipe invert level 800 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
5.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M
5.0.3	e.o in hard/ rock	m^3

5.0.4	Supply, deliver, fit and test 63mm (2.0") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
	Supply and fit the following pipe fittings into the pipeline as directed	
5.0.5	2" x 2" PN 16 Saddle clamp for offtake from return pipeline	No.
5.0.6	2" gate valve, hDPE type or as approved by the engineer	No.
5.0.7	2" gate valve, hDPE type or as approved by the engineer	No.
5.0.9	2" master meter and associated fittings	No.
5.0.10	Standard valve chambers 1mx1mx 0.5m complete with steel manhole cover and a padlock to house all offtake appliances	Item
	SUB TOTAL	
BILL 6.0	**KITHUKA PIPELINE**	
S/NO	**ITEM DESCRIPTION**	**UNIT**
6.0.1	Bush clear and excavate to pipe invert level 800 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
6.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M
6.0.3	e.o in hard/ rock	m^3
6.0.4	Supply, deliver, fit and test 63mm (2.0") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE100 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m
	Supply and fit the following pipe fittings into the pipeline as directed	
6.0.5	2" x 2" PN 16 Saddle clamp for offtake from return pipeline	No.
6.0.6	2" gate valve, hDPE type or as approved by the engineer	No.
6.0.7	2" gate valve, hDPE type or as approved by the engineer	No.
6.0.9	2" master meter and associated fittings	No.
6.0.10	Standard valve chambers 1mx1mx 0.5m complete with steel manhole cover and a padlock to house all offtake appliances	Item
	SUB TOTAL	
BILL 7.0	**SOLAR PUMPING SYSTEM**	
ITEM	**ITEM DESCRIPTION**	**UNIT**

7.0.1	Supply, Deliver and Install a Submersible Multistage Centrifugal Pump Set of Duty Point: - 14 m3/hr at Duty Point Head of 190meters. The pump Efficiency at duty point should be above 50%. The pump Impellers should be of Stainless Steel. Provide Copies of Pump Characteristic/Performance Curves (Brochures). Install as directed by the Supervising Engineer.	Set
7.0.2	Supply all necessary material and fabricate floating pontoon intake, mount pumping set, install , test and commission	Item
7.0.3	Supply, Deliver and Install an AC Solar Pump Control Module, incorporating: - 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 curerent, system overload & module over temperature; fault detection with error code display. Install SV3 11T 3ph. or as directed	Unit
7.0.4	Submersible Cable, Double Insulated, 6.0mm2 X 4core	M
7.0.5	Supply and fix Sensor Cable and sensor, 2Core, Double Insulated, 0.75mm2	Item
7.0.6	Supply, Deliver and Install on the steel tower, Solar Array System of total output 17600Watts, including high-efficiency tier 1 monocrystalline modules As JA 555 W panels in 2 string of 16 panels with maximum string voltage VOC ≤850 VDC as approved using 4 mm sq dc cable and MC4 terminated on both sides to be mounted on the structure	W
7.0.7	Supply, deliver and erect firmly on Concrete Anchors, Fabricated Steel Tower, use square tubes, 4" x 4" x 4mm, for solar Array System, minimum height 5 meters, solar controller box 1000mm by 500mm by 300mm well ventilated to be included and tower inclination angle 10-15 degrees. To be installed as directed by the supervising Engineer	NO
7.0.8	Supply and install DC enclosure complete with inline 1100VDC fused isolator	NO
7.0.9	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
7.0.10	Supply and lay Armored Cable, 6 mm^2 X 4 core in a 25mm HG PVC Conduit	M
7.0.11	Allow for system earthing, lightening arrestor and balance of system installation and equipotential bonding.	Lot

7.0.12	Armored Copper Cable, 1.5mm2 X 2 core	M
7.0.13	Cable Glands, 25mmL	No.
7.0.14	Cable Glands, 20mmL	No.
7.0.15	Splicing Kit, Medium Packet	No.
7.0.16	Cable Ties, Large Packet, Manila	No.
7.0.17	Insulating Tapes, Large	No.
7.0.18	upvc conduit	Pc
7.0.19	Fence Solar Installation Site using 2.5 high concrete posts, 2.5m spacing, c/w Mesh Wire (Chain Link) 12.5 G, 8ft High ; include concrete column anchored double opening 2.5m High fabricated steel gate	m
7.0.20	Supply and install Solar Powered WiFi PTZ 360 Camera - With 6 Batteries of 19000mAh strategically fitted on metalic fabrications on site (configure the applications to two approved android project phones as instructed by the Engineer)	No
	Sub Total	
Bill 8.0	**CONSTRUCTION OF 50CU.M MASONRY WATER TANK**	
S/No	**Item Description**	**Unit**
BILL 8.0	**STORAGE TANK**	
	Contractor to supply, deliver all items and construct, test and commission a 50CM reinforced masonry tank at a site instructed by the engineer	
ITEM 8.2	**UNDERGRADE WORKS/FOUNDATION**	
8.2.1	**Excavations**	
8.2.1.1	Strip top soil 200mm from g.l. over area of tank and remove all vegetable soil to temporary spoil heap.	m^3
8.2.1.2	Excavate from stripped level over the tank site to depth n.e. 1.5m deep and dispose soil as directed	m^3
8.2.1.3	Extra over excavation items above for excavating in rock (Rate to include making good)	m^3
8.2.1.4	Allow for backfilling to approved levels after Completion of the works.	m^3
8.2.1.5	Allow for keeping all excavation free from general waters	item
8.2.1.6	Allow for planking and strutting of the pit	item
8.2.2	**Levelling and Blinding**	
8.2.2.1	HARDCORE - Provide, place and compact hardcore of approved quality to make up levels	m^3

8.2.2.2	MURRUM - 50mm approved murrum filling consolidated in layers to make up levels	SM
8.2.2.3	BLINDING -Provide materials, cement, sand and coarse aggregate and mix concrete,1:4:8,ratio to tank base slab	M^3
	Item totals	
ITEM 8.3	**FLOOR SLAB**	
8.3.1	CONCRETE -provide concrete,mix1:2:3 and construct concrete floor slab as in the provided drawing	M^3
8.3.2	**Reinforcement**	
8.3.2.1	12 mmØ reinforced bars	kg
8.3.3	INTERNAL PLASTER - 15mm thick two coat cement sand (1:4) plaster trowelled smooth and comprising 12mm backing and 3mm finishing coat. Use approved water proof cement.	SM
8.3.4	Penetron integral cappilary system water proofing to masonry - Use Bondex (Tar)	SM
	Item totals	
ITEM 8.4	**WALLING**	
8.4.1	Provide dressed quarry stone, size 9"×9" and construct the tank walls as in the provided drawing. Use cement sand 1:3 mortar	SM
8.4.2	**Reinforcement**	
8.4.2.1	D10 mmØ reinforcement bars	kg
8.4.3	INTERNAL PLASTER - 15mm thick two coat cement sand (1:4) plaster trowelled smooth and comprising 12mm backing and 3mm finishing coat. Use approved water proof cement.	SM
8.4.4	EXTERNAL PLASTER - 15mm two coat cement Sand (1:4) render	SM
	Item totals	
ITEM 8.5	**ROOF SLAB**	
8.5.1	CONCRETE -provide concrete,mix1:2:4 and construct concrete roof slab as in the provided drawing	M^3
8.5.2	**Reinforcement**	
8.5.2.1	D12 mm bars	kg
8.5.2.2	16 mmØ reinforcement bars	kg
8.5.2.3	Plain G.I binding wire,G24, 50Kg roll (For all reinforcement works)	Rolls
8.5.3	INTERNAL PLASTER - 15mm thick two coat cement sand (1:4) plaster trowelled smooth and comprising 12 mm backing and 3mm finishing coat.	SM

8.5.4	EXTERNAL PLASTER - 15mm two coat cement Sand (1:4) render	SM
8.5.5	**FORM WORK**	
8.5.5.1	Wooden props 2" dia 3m long	No
8.5.5.2	Formwork to soffits and sides n.e. 3.5m high	SM
8.5.6	**Wire nails *(for all works)**	
8.5.6.1	4"	Kg
8.5.6.2	3"	Kg
8.5.6.3	2"	Kg
	Item totals	
ITEM 8.6	**FINISHES**	
8.6.1	WHITE WASH - Supply, Mix and apply white wash to all the overgrade external structure	25kg bags
8.6.2	standard Lockable steel manhole cover (600x450mm) complete with frame and locking device and primed with red oxide, including cutting and pinning lugs to concrete sorround and bedding frame in cement and sand mortar (1:4)	SM
	Item totals	
ITEM 8.7	**PLUMBING WORKS**	
	Supply, deliver and install the following items to form the inlet and outlet components	
8.7.1	2.5" dia bend	No
8.7.2	2.5" dia Elbow	No
8.7.3	2.5" dia Barrel nipple	No
8.7.4	2.5" dia Union socket	No
8.7.5	2.5" dia Gate valve , Pegler type or as approved by the engineer.	No
8.7.6	**Pipe Joining Materials**	
8.7.6.1	Boss white for G.I Pipes	Kg
8.7.6.2	Solvent Cement	Kg
8.7.6.3	Coolant	Lts
8.7.6.4	Sealing thread	Pcs
	Item totals	
	BILL 8.0 TOTAL CARRIED TO SUMMARY	
	MISCELLANEOUS WORKS	
8.0.32	Construct and fix a vertical ladder of length of 3.4M fixed to wall and floor on the external and internal side of tank	No.
8.0.33	60mmx600mm cast iron manhole cover complete with frame, locking device and keys	No.
	OUTLET PIPE:	

8.0.35	Supply and install 150mm x 110mm Bell Mouth GS with 90^0 Bend connected to 110mm diameter flanged pipe 3.6m long	No
8.0.36	Supply and install 75mm diameter flanged AVK Sluice valve PN16 Bars	No
8.0.37	Supply and install 110mm diameter GI flanged pipe 2m long	No
8.0.38	Construct locable standard valve chamber (1200 x1200) with padlock	No
	INLET PIPE:	
8.0.39	Supply and install 75 mm 4m long GI Pipe flanged with GS flanged 75mm 90^0 double Bend flanged as instructed by engineer	M
8.0.40	Supply and install 75mm 500mm long GI pipe flanged with puddle flange	No
8.0.41	Supply and install 75mm diameter flanged AVK sluice valve	No
8.0.42	Standard valve chambers 1mx1mx 0.5m complete with steel manhole cover and a padlock to house all offtake appliances	No
	WASHOUT :	
8.0.43	Supply and install 150mm x 100mm Bell Mouth GS with 90^0 bend connected to 100mm diameter flanged pipe 2m long	No
8.0.44	Supply and install 100mm diameter flanged Sluice valve connected to 100mm diameter GI flanged (one end & threaded one end) pipe 1m long	No
8.0.45	Standard valve chambers 1mx1mx 0.5m complete with steel manhole cover and a padlock to house all offtake appliances	No
8.0.46	Supply and install 75mm diameter pipe 3.6m long (threaded) and connect to washout chamber	Item
8.0.47	75mm 90^o bend	No
8.0.48	75mm socket	No
8.0.49	75mm threaded 300mm with puddle flange	No
8.0.50	75mm nipple	No
	AIRVENT :	
8.0.51	75mm GI pipe piece 200mm long threaded	No
8.0.52	75mm GI elbow with mosquito gauze	No
8.0.53	75mm GI nipple	No
	SUB TOTAL	
	TOTAL FOR BILL 8.0	
ITEM	**DESCRIPTION**	**UNIT**
BILL 9.0	**RESERVOIR EXPANSION WORKS**	
9.1.0	**Desilting of Reservoir**	

9.1.1	Excavate in normal material depths in the checkdam reservoir area and dump silt and other spoil as directed by the Project engineer.	Cu.M
	Cutting off of Checkdam Embankment	
9.1.2	Excavate the checkdam existing embankment on the upstream side to the existing reservoir across the entire length and dispose off the soil to create an extension of the reservoir upwards as directed by the project manager	Cu.M
	Sub-Totals	
	Bill 9 total	
10.2.1	**CHECK DAM CONSTRUCTION**	
10.2.2	Vibrated reinforced concrete mix 1:2:4	m^3
10.2.3	Provision for drilling anchorage holes across the inlet river section as instructed by supervising engineer. Apply anchorage foam (Hilti hit - RE 10) to hold reinforcement bars tightly in the drilled holes	Item
	Sub-Totals	
10.3	**REINFORCEMENT BARS**	
	Provide, handle, cut, bend and fix the following reinforcement bars as stated in the bending schedule or as directed by the Engineer	
10.3.1	12mm round mild steel bars	Kg
10.3.2	10mm round mild steel stirrup	Kg
10.3.3	Hard core	Tons
	Sub-Totals	
10.4	**Sawn formwork for both faces of the concrete wall as;**	
10.4.1	Cypress timber 6″x1″	Rft
10.4.2	Cypress timber 3″x2″	Rft
10.4.3	Binding wire	Kg
10.4.4	Wire Nails assorted	Kg
	Sub - total	
	BILL 10 Total	
11	**SPILLWAY REHABILITATION**	
11.0.1	Excavate and shape the existing spillway channel 60 m long, 10 m width and maintain 1.5 m free board. Dispose the excavated soil material (spoil). Use borrowed clay soil, Compact to stabilize spillway bed as directed by the client representative	Cu.M
11.0.2	Supply hard core and install on compacted spillway as directed by client representative to form foundation	Tons
11.0.3	Mass concrete class 15 (1:4:8) in 150mm thick surface to create reinforced concrete spillway channel resistant to erosion	m^3

11.0.4	Mesh fabric reinforcement A98 to B.S 4483 (to be use as reinforcement for spillway channel slab)	m^2
	Sub-Total	
	Bill 11 total	
12	**FENCING COMPONENT**	
12.0.1	Provide for bush clearing to create 1m wide wayleave for fence and dispose off the cleared vegetation appropriately	SM
12.0.2	Provide all materials and erect 2m high -14 Gauge chainlink fence held in place with 6 strand galvanized barbed wire on 2.5m high 100mm dia. square concrete posts at 3.0M c/c mortised in 1:3:6 mass concrete surround (provisional) **Note: the actual perimeter of fence to be determined once demarcation is done(**The given 450m metres is approximation. The actual perimeter to be confirmed once boundaries has been established by surveyor**)**	M
12.0.3	Fabricate, supply and install Double leave steel gate comprising of 80mm dia. End posts 2.5M long. Gate dimensions to be 3.0M x 2.0M high with 1.2M wide pedestral gate. The gate to be of 50 x 25mm R.H.S. framing with 50mm x 25mm dia. Grilles spaced at 150mm centres welded to frame. Apply blue paint after undercoat	No.
	Sub-total	
	Bill 12 total	
BILL 13	**STANDARD WATER KIOSK 2.4m x 2.4m WITH RAM**	
13.1	**Water kiosk Substructure (all provisional)**	
13.1.1	Clear the site off all bushes, including grubbing up all undergrowth and burn the arising on site as directed	m^2
13.1.2	Cut to spoil top soil average 250mm deep and dump on site a directed.	m^2
13.1.3	Excavate trenches for strip foundation not exceeding 1.5m deep from striped level	m^3
13.1.4	Load, cart away and spread extra excavation material on site as directed by the engineer	m^3
13.1.5	Backfill and ram selected excavated material to sides of foundation	m^3
13.2	**Walling**	
13.2.1	200mm rough dressed natural stone wall in cement: sand mortar (1:4) or as approved by supervising engineer	m^2
13.3	**Filling**	
13.3.1	Subgrade fill in cut to a maximum thickness of 300mm using approved hardcore compacted in layers not exceeding 150mm thick	m^3

13.3.2	Blinding: Use 50mm thick murram or other equal and approved blinding materials to surface of hardcore (m.s)	SM
13.3.3	Blinding: Use concrete ratio (1:4:8) to create a 50mm thick blinding under strip foundation	m^2
13.3.4	Foundations and Columns: use RC 1:2:4	m^3
13.3.5	150mm floor slab: use RC 1:2:4	m^2
13.4	**Sawn formwork as described to:-**	
13.4.1	Sides of foundation	SM
13.4.2	Edges of slab 75mm-150mm girth	L-M
13.5	**Reinforcement**	
	High tensile Reinforcement bars to BS. 4461 including cutting, bending and all necessary spacer blocks. (Provisional)	
13.5.1	16mm diameter	Kg
13.5.2	12mm diameter	Kg
	Mild steel Reinforcement bars to BS. 4449 including cutting, bending and all necessary spacer blocks. (Provisional)	
13.5.3	B.R.C A98 mesh reinforced to engineers specification	m^2
13.6	**Plinth finishes**	
13.6.1	12mm thick plaster to plinth	m^2
13.6.2	Prepare and apply two coats of black bituminous paint to plastered surface	m^2
13.7	**SUPERSTRUCTURE**	
	R.C SUPERSTRUCTURE:-	
	Reinforced concrete (1:2:4) as described to:	
13.7.1	Ring beams	m3
13.7.2	200mm suspended roof slab	m3
	High tensile Reinforcement bars to BS. 4461 including cutting, bending and all necessary spacer blocks. (Provisional)	
13.7.3	10mm diameter	kg
13.7.4	12mm diameter	Kg
	Sawn formwork as described to:-	
13.7.5	Sides and soffits of beams	m^2
13.7.6	Soffit of suspended slab	m^2
13.7.7	Edges of suspended slab 100mm-150mm girth	LM
13.8	**WALLING:-**	
	Quarry dressed stone or other equal and approved wall bedded and jointed in cement : sand (1:3) mortar:-	

13.8.1	200mm thick externally	m^2
	Precast concrete blocks in wall bedded and jointed cement: sand (1:3) mortar	
13.8.2	Approved 200mm wide damp proof course laid to breaking joints with 150mm laps in cement: sand (1:3) mortar.	LM
	DOORS(All to Architects details)	
13.8.3	Purpose made steel door size 900 x 2100mm with permanent vents complete with frame, hinges, locks, hold back lugs and one coat of manufacturer's primer to the architects details and approval.	No
13.8.4	1300MMX1200MM OVERALL SIZE STEEL FRAMED DOUBLE OPENING WINDOW WITH 25MM THICK STEEL window fixed as shown in drawing	No.
13.9	**Painting**	
	Prepare and apply three coats of oil paints to:-	
13.9.1	General metal surfaces	m^2
13.1	**FINISHES**	
	Floors	
13.10.1	**Cement: Sand (1:4) in :-**	
13.10.1.1	32mm thick cement and sand screed finished smooth and hard with steel float	m^2
13.10.2	**Skirting**	
13.10.2.1	100 X 20mm mortar skirting with a rounded edge and coved at junction with floor.	LM
13.10.3	**Walls**	
13.10.3.1	12mm thick cement and sand (1:4) plaster to walls and beams internally.	m^2
13.10.3.2	Ditto externally	m^2
13.10.3.4	**Painting**	
	Prepare and apply three coats sky blue emulsion paint to	
13.10.3.4.1	Internal wall and beam surface	m^2
13.10.3.4.2	Externally ditto	m^2
13.10.4	**Ceiling**	
	Cement: Sand (1:4) in :-	
13.10.4.1	12mm thick plaster render to soffits of suspended slab	m^2
13.10.4.2	Prepare and apply three coats of plastic emulsion to Plastered surfaces	m^2
13.10.5	**5 CM Plastic tank and plumbing works**	
13.10.5.1	Supply, deliver and install 5m3 Plastic tank	No

13.10.5.2	Allow a provisional sum for plumbing works including supply and fix the necessary fittings for water kiosk and connecting water tank and water kiosk plumbing component. The water kiosk to have two water taps (prefarably peglar type)	l/s
13.10.5.3	Water meter 1" and associate fittings	No
	Total for 1 No. water kiosk (A+B+C)	
	Total for 3No. Water Kiosks (Kwa Kithuka, Kwa Kilonzo and Maasani Junction)	
BILL 14	**COMMUNITY WATER POINT**	
14.0.1	Construct and Commission a Community Water Point, inclusive of Plumbing, Fittings & Consumer Water Meter in a lockable 0.75m X 0.75m chamber, as directed by Site Engineer.	item
14.0.2	**5 CM Plastic tank and plumbing works**	
14.0.3	Supply, deliver and install 5m3 Plastic tank	No
14.0.4	Construct reinforced 1.2 m high masonry platform for hoisting 5,000 litres plastic tank.	No
	Bill 14 total	
	GRAND SUMMARY	
BILL 1.0	Preliminaries	
BILL 2.0	Rising Main	
BILL 3.0	Return Pipeline	
BILL 4.0	Masala pipeline	
BILL 5.0	Kilonzo Pipeline	
BILL 6.0	Kithuka Pipeline	
BILL 7.0	Solar pumping system	
BILL 8.0	Construction of 50CU.M masonry water tank	
BILL 9.0	Reservoir Expansion	
BILL 10.0	Checkdam Construction	
BILL 11.0	Spillway Rehabilitation	
BILL 12.0	Fence Component	
BILL 13.0	Water Kiosks	
BILL 14.0	Community Water Point	
	SUB TOTAL A	
BILL 14.0	**Contingencies**	
14.0.1	Allow (Four hundred and one thousand eight hundred and ninety five kenya shillings) for contingencies to be expended at the discretion of the project manager	
	SUB TOTAL (BUILDER WORKS)	

	AGRICULTURE - LIVESTOCK - FORESTRY COMPONENT	
	KYANDUU DRIP IRRIGATION DEMOSTRATION PLOT	
Item	**Description**	**Unit**
1.0	**Preliminaries and General**	
1.1	Fabricate, supply and erect a sign post with lettering and painiting as per the drawings and as directed by the site engineer.	No.
	Sub Total	
2.0	**Irrigation water supply reticulation**	
2.1	Allow for Bush clearing of pipeline area 2m wide	m^2
2.2	Excavate in normal soil 0.6m depth x 0.5m width and backfill	m^3
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
2.4	Purchase, supply, install and test HDPE Tee of Dia. 40mm	No.
2.5	Purchase, supply, install and test HDPE Reducing Tee of Dia. 63 x 40mm	No.
2.6	Purchase, supply, install and test HDPE 90° Bends of Dia. 40mm	No.
2.7	Purchase, supply, install and test HDPE End cap of Dia. 40mm	No.
2.8	Purchase, supply, install and test 40mm Dia HDPE adaptors	No.
2.9	Purchase, supply, install and test 40mm Dia HDPE Gate valves	No.
2.10	Purchase, supply, install and test 63mm Dia HDPE Gate valves	No.
2.11	Purchase, supply, install and test 40mm Dia water meter as directed by the site engineer	No.
2.12	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 asper the drawings and as directed by the site engineer	No.
2.13	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 mild steel tube of dia 25mm and provision installation of CCTV camera. include rust proofing using grey metal primer and 3 coats of supergloss black paint for all exposed metallic parts as per drawings and as directed by the site engineer.	Sum

2.14	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.
	Sub total	
3.0	**Infield drip irrigation installation**	
3.1	Allow provisional sum for ploughing, Setting- out, bunding 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
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
3.3	Supply, install and test 16mm take off as per the drawings and as instructed by the site engineer	No.
3.5	Supply install and test 16mm High-Quality UV-Stabilized black Polyethylene (PE) pressure compensated flat tape drip line with flow rate of 1liter/ hour and working pressure rating of 1.0bar (±0.2bar) max 1.5bar, with standard wall thickness of 0.4mm and emmitter spacing of 30cm as per the drawings and as instructed by the site engineer	R-m
3.6	Supply, install and test 16mm drip line end cap as per the drawings and as instructed by the site engineer	No.
3.7	Supply, install and test 40mm 120 mesh (130 microns) inline filter as per the drawings and as instructed by the site engineer	No.
	Sub Total	
3.8	Supply, deliver and erect barbed wire perimeter fencing using Vibrated reinforced precast concrete posts with cranked ends at 3m spacing to a height of 2.4M. Ensure corner posts and centere posts are well proped for stability. Use mass concrete surround of 1:3:6 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.	RM
	TOTAL	
	VAT 16%	
	TOTAL	

KYANDUU FORESTRY

No	**Activity/ particular**	**Unit**

1.0	Purchase, supply of agro forestry and forest tree nursery materials as shown below	
1.1	Forest soil	Tons
1.2	Animal manure	Tons
1.3	River sand	Tons
1.4	Assorted Poly bags (5" by 8") (1Pkt has 100pcs)	Pkts.
1.5	Watering cans	No
1.6	Pruning wire	No
1.7	Wheelbarrows (Jua kali Heavy guage, big wheeled)	No
1.8	Tree seeds (1kgs of fresh local avocado seeds, 1 kgs of certified Senna siamea, 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
1.9	Hose pipe 50M 3/4"	No
1.10	Jembe	No
1.11	Panga	No
1.12	Surgical blades	pkts
1.13	Shovels	No
	Sub Total	
BILL NO.	**ITEM DESCRIPTION**	**UNIT**
1	**ESTABLISHMENT COMMUNITY KITCHEN GARDENING AND FODDER**	
1.2	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
1.3	Supply, deliver and installCone gardens (of Spec in item 1.2) at CTTI centre	No
2.1	Supply and deliver Drought tolerant New rice for Africa (NERICA 4) seeds	Kgs
2.2	Supply and deliver 1000 Potted High value avocado root stock/seedlings of 2ft to 2.5 ft height from the stem base.	No
2.7	Supply and deliver jembe fixed with handle	No
2.8	Supply and deliver plastic Watering can	No
2.9	Supply and deliver Wheelbarrow (Jua kali, heavy gauge, big wheeled)	No
3	Supply and deliver jua kali Rake with fixed metallic handle	No
3.1	Supply and deliver spade with fixed metallic handle	No
3.2	Supply and deliver Knapsack sprayer – Jackto type (16 litres)	No
3.3	Supply and deliver Fertilizers- DAP 50 kg bag	bags
3.4	Supply and deliver Fertilizers- CAN 50 kg bag	bags
3.5	Supply and deliver quarter litre Foliar feed (100 mls high N and 150mls high K) as shall be instructed.	Litres

3.6	Supply and deliver half litres of Insecticides as shall be instructed	litres
3.7	Supply and deliver Fungicides as shall be instructed	litres
3.8	Supply and deliver Stickers as shall be instructed	Mls
3.9	Supply and deliver Growth regulators as shall be instructed	Mls
4.1	Supply and deliver 5 tons of farm animal manure at the the demo farm.	tons
4.2	**Fodder Establishment**	
4.3	Supply and deliver 19kgs (9.5 Packets each weighing 2Kgs) of sugar graze seeds	Kg
4.6	**SUB TOTAL**	
	GRAND TOTAL	
	PROJECT GRAND SUMMARY	
	BUILDER WORKS	
	AGRICULTURE - LIVESTOCK- FORESTRY	
	PROJECT GRAND TOTAL	

ECT		
QTY	Procurement C	Procurement Capacity Building Levy Order, 2023 which is 0.03% of the total cost before tax (Pursuant to PPRA Circular No.1 of 2024 Final Unit Price (Inclusive of Discounts, Levy Order, VAT and any other cost is Kenya Shillings) and this shall be the Tender Sum to be filled in the Form of Tender.
1		
1		50,000.00
1		
l/s		
QTY	**RATE**	**Amount Ksh**
1,300		
36		
10		

300		
600		
400		
1		
1		
QTY	**RATE (Kshs.)**	**AMOUNT (Kshs.)**
1,300		
36		
10		
300		
1000		
1		

1		
QTY	**RATE (KShs.)**	**AMOUNT (KShs.)**
700		
40		
60		
700		
1		
1		
1		
1		
1		
QTY	**RATE (KShs.)**	**AMOUNT (KShs.)**
900		
20		
10		

900		
1		
1		
1		
1		
1		
QTY	**RATE (Kshs.)**	**AMOUNT (Kshs.)**
400		
40		
60		
500		
1		
1		
1		
1		
1		
QTY	**RATE**	**AMOUNT**

1		
l/s		
1		
50		
l/s		
17,600		
1		
2		
120		
50		
1		

100		
4		
2		
1		
1		
10		
6		
60		
2		
	KSH.	
QTY	**Rate**	**Amount**
10		
35		
0		
20		
0		
1		
35		

20		
6.5		
4.5		
256		
25		
25		
50		
550		
50		
50		
3.1		
526		
168		
1		
25		

25		
100		
25		
5		
6		
2		
1		
0.27		
3		
6		
4		
2		
2		
0.5		
0.5		
1		
4		
2		
2		

1		
1		
1		
1		
6		
1		
1		
1		
1		
1		
1		
1		
1		
2		
1		
2		
4		
8		
4		
QUANTITY	**RATE**	**AMOUNT**

2,700		
1700		
20		
l/s		
120		
148		
5		
200		
200		
10		
40		
180		
80		
90		

660		
300		
450		
2		
5		
5		
10		
9		
8		
5		
3		

3		
3		
1		
2		
16		
7		
100		
75		
6		
3		
3		
0.8		
1.8		
56.48		
208		
8		
12		
8		

16		
12		
1		
1		
4		
4		
7		
17		
5		
12		
5		
7		
7		
1		

1		
1		
1		
1		
1		
		401,895.00

Qty	**Rate (KShs.)**	**Amount (KShs.)**
1		
20		
15		
50		
1		
1		
6		
2		
6		
2		
1		
1		
1		
1		

1		
1		
60		
60		
2,500		
60		
1		
150		

Quantity	Rate (KShs.)	Amount (KShs.)

5		
3		
3		
100		
2		
4		
1		
6		
1		
1		
1		
1		
1		
QTY	**RATE**	**AMOUNT**
50		
5		
50		
1000		
1		
1		
1		
1		
1		
1		
2		
1		
0.25		

0.5		
0.5		
100		
100		
5		
9.5		