

CONFIDENTIAL

TENDER NO:



COUNTY GOVERNMENT OF KERICHO

DEPARTMENT OF WATER,ENERGY,ENVIRONMENT,FORESTRY AND NATURAL
RESOURCES.

TENDER DOCUMENT

BILLS OF QUANTITIES

FOR

**Proposed Construction of 100M3 Masonary Sump,Protection of 2 No. Of Springs,Installation of
24m3 Pressed Steel Tank on 10M Tower,Solarization of Centrifugal Pump,Fencing, Construction of
Pump House and Construction of Rising Main and Distribution Pipeline at Chemosot/Kimulwo
Spring Water Project ,Chemosot Ward.**

WATER WORKS

AT

BURETI SUB-COUNTY.

Prepared By:

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Department of Water,Energy,Environment,Forestry and Natural Resources,
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KERICHO, KENYA.

Issued By:

September 2024

Description	Quantity	Unit	Rate	Amount
BILL NO. 01				
PRELIMINARIES AND GENERAL CONDITIONS.				
Provide , erect ,maintain and remove on completion of the project a sign board as directed by the Engineer.	LS			20,000
Allow the provisional sum of Kshs 450,000 only to cover costs for superintendance allowances	P.S		450,000	450,000
Prepare and implement Environmental and Social Management Plan (ESMP)	LS		50,000	50,000
Add 0.2% of item B. and C above for contractors's overhead and profit.	%age	0.2	500,000	100,000
Allow for branding as directed by the Engineer	LS			10,000
Carried to Summary				630,000.00
Bill No. 2: 100m3 ground Level Masonry Sump.				
General site clearance of all bushes and undergrowth, remove all stumps and grub all roots as directed on site	SM	600		
Excavate foundation for sump tank and pipework in normal soil below the existing ground level to a depth n.e 4m or as directed by the engineer. Fill in ,ram to required dimensions and levels and cart suplus to approved tips. Allow working in wet conditions.	CM	60		
Place and compact approved hardcore to the thickness of 0.3m or as shown in the	CM	15		
Mix and place concrete 50mm grade 15/20 blinding layer to the base of the tank	CM	3		
Cut, bend and fix the following reinforcements as per drawing details to the base ,walls and roof of the tank				
(i) Y 8	KGS	470		
(ii) Y10	KGS	1488		
(iii) Y12	KGS	1061		
Cast reinforced vibrated concrete grade 20/20 floor slab	CM	10		
225mm dressed stone walling in 1:3 cement: sand mortar(in water proof cement)	SM	111		
Place 1:2 mortar screed to the base of the tank.	CM	3		
Plaster reservoir interior wall with mortar mix 1:2 in water proof cement	SM	55		
Plaster reservoir external wall with mortar mix 1:2 in water proof cement	SM	58		
Prepare and fix sown timber formwork to soffits and sides of the roof slab	SM	50		
Cast reinforced vibrated concrete grade 20/20 roof slab	CM	10		
Cut groove to detail on floor wall joint and fill with bondex.	LM	26		
Fabricate and Install approximately 3000 mm long galvanized mild steel ladder as directed on site	Ls	2		
Fix all pipes and fittings:- inlet,outlet, scour and overflow pipes as per the drawing. The rate to include construction of lockable manholes for the same as directed by the engineer	Ls	1		
Construct manhole of 1mx1mx1.5m, provide and fix 600 x 600mm steel manhole cover	No.	2		
Carried to Summary				
Bill No.3. Excavation.				

Rates for excavation in hard soil and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround material from the excavations.				
In normal soil for 3" dia. Pipeline n.e 1.2 m deep	CM	600		
In normal soil for 2" and 1.5 " dia. Pipeline n.e 1 m deep	CM	1900		
Carried to Summary				
Bill No.4. HDPE Pipe work.				
Provide, lay, joint and test the following pipes and fittings. Rates to include for all jointing materials, cuttings, wastages and anchorage.				
3" HDPE Pn. 12.5 gravity main	M	400		

3" HDPE Pn. 12.5 rising main	M	1200		
2" HDPE Pn. 12.5	M	3000		
1.5" HDPE Pn. 12.5	M	1900		
Allow 5% fittings for item a. To b. above.	%age			
Carried to Summary				
Bill No.5. 2No.Spring Protection.				
Rates for excavation and backfilling in trench shall include trimming trench bottom to level required and for providing selected bedding and surround material from the excavations.				
General site clearance of all bushes and undergrowth, remove all stumps and grub all roots as directed on site	SM	50		
Excavate foundation for spring protection walls, collection chamber, valve chamber, drains and pipework in normal soil below the existing ground level to a depth n.e 1.5m or as directed by the site supervisor. Fill in, ram to required dimensions and levels and cart surplus to approved tips.	CM	15		
Cast 150mm water proof vibrated reinf concrete grade 20/20 fdn. slab reinforced with 3No. lines of T10 bars.	CM	1.82		
Cast vibrated 250mm concrete grade 20/20 for reinf. column spaced at 3m. centre to centre as directed on site by supervisor.	CM	1.13		
Lay 225mm thick approved kedowa block wall with water proof mortar joint of mix 1:2 and reinforced with two line of T8 bars in each coarse as directed on site by supervisor	SM	35		
50mm plaster in 1:2 cement:sand (steel float finish) in waterproof cement to internal wall.	SM	40		
Ditto but to the external wall	SM	45		
Place and compact approved hardcore to the thickness shown on site by supervisor	CM	15		
Place to cover hardcore, top of spring tank polythene sheet gauge 1000mm as directed by supervisor.	SM	50		
Backfill with selected material as directed on site by supervisor	CM	10		
Supply all necessary materials and construct whole set up of a standard communal water point as directed by supervisor.	No.	1		
Sub total for 1no. Spring				
Carried to Summary		For 2No. Spring		
		For 2No. Spring		
Bill No.6 Submersible pump, Solar modules & accessories				
Provide, install test and commission a solar powered surface vertical multistage in-line centrifugal pump, capable to deliver atleast 25m ³ /hr against 100m head as follows or equivalent:-				
Dayliff DI-N20-14 15KW 3HP pump end	No.	1		
3"Foot vlve	No.	1		
GI red socket 3*2.5	No.	1		
GI Fittings & sundries	l.s	1		
1.5mm*2 core U/G cable	M	40		
Float switch 0315/3 C/W 3m cable	No.	1		

3" GI pipe cl.B	No.	3		
DN65 Woltmann water meter	No.	1		
3" Non return valve flap crane	No.	1		
Pressure gauge 0-25 bar glycerine-back conn.	No.	1		
Priming system	No.	1		
Dayliff SV3 15Kw 3ph sunverter	No.	1		
Dayliff PVDISC 1000/40A 4ST PV Disconnect switch	No.	2		
Dayliff PV 1000VDC 125A PV	No.	1		
Dayliff 545w monocrystalline solar panel	No.	45		
20w integrated mini solar street light	No.	2		
6mm*4 core U/G Cable	M	20		
6mm2x2 solar pv cable	M	20		
Lightning arrestor	No.	1		
Copper tape 25mm	M	7		
Earthrod c/w clamp 5/8*4ft	No.	1		
Copper earth cable 10mm	M	10		
Sunction angering	ls	1		
3m galvanized steel ground mount structure to hold solar module	ls	1		
Carried to Summary				
Bill No. 7. Fencing off restricted Areas.(Solar panels and spring protected ares)				
Provide , erect and anchor in concrete class 20:20 footing 3m reinforced concrete poles and struts spaced 2.5m c/c as directed by supervisor on site.	No.	82		
Supply and fix a complete set up of mild steel gate (1000 by 1800) with locable fittings and locks.	No.	1		
Supply and fix 6 strands of high tensile (4.5mm) galvanized iron wire by concrete poles.	Kg.	50		
Supply and fix to concrete poles a 2.0m high 14gauge chain link (2.5mm link wire) as instructed on site by supervisor.	M	220		

Supply and fix 4No. strands of high tensile(4.5mm) galvanized barbed wire on concrete poles to prevent illegal intruders.	M	230		
Carried to Summary				
Bill No. 8. Pump house /Power House				
Rates for excavation and backfilling in foundation shall include trimming trench bottom to level required and for providing selected bedding and surround material from the excavations.				
Excavate foundation for tank, valve chambers and pipework in normal soil below the existing ground level to a depth as directed by the engineer. Fill in, ram to required dimensions and levels and cart surplus to approved tips	CM	20		
Place and compact 300mm approved hardcore as directed by supervisor on site.	CM	6		
Place and compact 100mm quarry dust/approved murrum blinding as directed by supervisor on site.	CM	3		
Place 1000 gauge polythene sheet to cover the entire area of the floor.	SM	30		
Cut, bend and fix the following reinforcements as per drawing details to the base, walls and roof of the tank. Mildsteel bars to BS 4449 and minimum concrete cover of the reinforcement 50mm.				
(i) Y 10	KGS	122		
Cast 200mm vibrated concrete grade 20/20 floor slab	CM	2.5		

Lay 225mm dressed block wall with mortar joint of mix 1:3 and reinforcement in each course as per the drawing	SM	46		
Place 50mm thick 1:2 water proof mortar screed to the base of the wall.	SM	4		
50mm plaster in 1:2 cement:sand (steel float finish) in waterproof cement to internal wall.	SM	32		
Ditto but to the external wall	SM	32		
Prepare and fix sown timber formwork and props to soffits and sides of the roof slab	SM	20		
Prepare the surface connecting the wall to the base and roof slab and apply 3 coats of bituminous paint	LM	30		
Provide, instal, test and commission a steel gate appr. 900x1800mm complete with frame, hinges, locable locks etc	No.	1		
Provide, instal, test and commission a steel window appr. 750x750mm complete with frame, hinges, locable locks etc	No.	1		
Carried to Summary				
Bill NO. 09				
Construction of 4No. Communal Water Points.				
Construct to completion, test and commission 1No. Public water point as per the following specification and as directed by the Engineer. Erect a masonry and concrete stand for the water point. Masonry blocks to provide the wall of the stand with joints made of mortar of cement sand mixes (1:3). Mass concrete slab of Class 20/20 to be cast on hand packed hardcore.				
225mm thick Masonry wall, 2m long by 0.9m high. The rate to include plaster with water proof cement mortar mix of cement sand ratio of 1:3	SM	2		
Class 20 reinf. concrete for the 150mm thick floor slab	CM	0.4		
Hardcore 300mm thick	CM	1		
Provide, lay, joint and test the necessary pipes and fittings to provide water collection points. (Provide 3No. water taps)	No.	1		
Subtotal for 1no. Water point				
Subtotal for bill No.8. carried to summary for 4 Water Points				
Bill NO. 10				

Installation of 24m3 Pressed Steel Tank on 10M Tower				
Site Clearing, Excavation and Preparation of foundation. (Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations). Foundation				
Clear of site to remove top soil to an average depth of 20cm	SM	40		
Excavate in ordinary soil for foundation footings	CM	12		
Ditto but in rock (Provisional)	CM	4		
Supply and install a 15m high tower to support 24m3 painted pressed steel tank on 15m steel tower as directed by the Supervisor.	item	1		
Carried to Summary				