

**BILL OF QUANTITIES FOR THE PROPOSED MIAU EARTH DAM WATER DISTRIBUTION PROJECT**

Preamble: All prices are inclusive of transport, labour costs, profits, overheads and 16% VAT. All materials supplied should have manufacturers design specifications as highlighted in bill of quantity and drawing adhering on them and shall be used in the project upon client representative approval.

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	AMOUNT (KShs.)
BILL 1.0	PRELIMINARIES AND GENERAL ITEMS				
	Publicity Sign Board				
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	ls	1		
	BILL 1.0 TOTAL CARRIED TO SUMMARY				
BILL 2.0	RISING MAIN				
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	AMOUNT (KShs.)
2.1	Contractor to purchase, deliver galvanised GI PIPES Class B Nominal bore 65mm, HDPE Pipes OD 110 SDR 7.4 PE 100 trench, lay, fix, Pressure test and commission the pipeline.				
2.101	65mm (2½) GI pipes Class B with sockets and bends for the interconnection to the pump.	m	6		
2.102	OD 110x90 mm HDPE flanged reducer ( Stepped coupler)	No.	1		
2.1021	3 inch flanged GI pipes Class B (galvanized) complete with water gaskets, bolts and nuts ( apply 3 coats primer to general metal surface)	m	60		
2.103	OD 110 mm HDPE pipes PN25 SDR 7.4 PE 100	m	800		
2.104	Site clearing, Trench excavation (450mm wide x 700mm deep), Pipe laying and Trench back filling .	m	800		
2.105	Install reinforced concrete Slip Anchors (300x300x300mm) at the designated points as per Engineers Guidelines.	No.	2		
2.106	Install reinforced Concrete thrust blocks (300x300x300mm) at the designated points as per Engineers Guidelines.	No.	5		
2.107	Concrete Marker posts well installed and clearly labeled WL at 200 m interval along the pipeline.	Nr	5		

2.2	FITTINGS ON THE RISING MAIN				
2.201	DN110, PN25 HDPE Flanged adaptor complete with water gasket, bolts and nuts for joining with GI fittings	Nr	3		
2.202	Flanged Water Master Meter of appoved quality with all accessories fitted in the pipeline as shall be directed, and a standard lockable chamber with padlock	Nr.	1		
2.203	DN50mm Flanged double orifice antishock Air Valve	Nr	1		
2.204	DN110x63mm HDPE reducing tee PN 25 plain ended for line branches and Wash Out	Nr	1		

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	AMOUNT (KShs.)
2.205	DN63mm HDPE flanged adaptor PN25 complete with water gasket, bolts and nuts for joining with GI fittings for washouts	Nr	1		
2.206	DN50mm resilient seated Sluice Valve PN25; Line valves and Wash Out	Nr	1		
2.3	PLASTIC STORAGE TANK - Supply, deliver materials and construct a 1m high reinforced masonry tank platform to host a 10CM plastic tank, supply and install the tank and interconnect to a water point as directed on site				
2.301	10CM double laminated tank with all assorted connection fittings .	No.	1		
2.302	1m high Reinforced masonry tank platform to hoist 10CM tank	No.	1		
2.303	Provide for the interconnections to Water tank and rising main	Item	1		
2.304	Construct a community water point specified by engineer and equipped with all necessary fittings and plumbing works and connect to the installed storage tank.	Item	1		
	BILL 3.0 SUMMARY PAGE TOTAL				
BILL 3.0	PUMP INSTALLATION AND SOLARIZATION				
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	AMOUNT (KShs.)
	Pump				

3.1	Supply, deliver and install a Solar Powered Submersible Multistage Centrifugal Pump Set of Duty Point (DS 17-27): 15 m <sup>3</sup> /hr at a Total Head of 256meters. The pump Impellers should be of Stainless Steel. Provide Copies of Pump Characteristic/Performance Curves (Brochures). Install as directed by the Supervising Engineers	No.	1		
3.2	Supply, deliver and install 15KW motor 3PH of approved quality	No.	1		
	Inverter				
3.3	Supply, Deliver & Install an AC Solar Pump Control Module as Sunverter SV3/18.5T KW, or equivalent approved, 3PH. Incorporating: -	Unit	1		
	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				
	Well probe(SENOR)				
	Fault detection with error code display				

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	AMOUNT (KShs.)
	Solar Panels				
3.40	Supply, Deliver and Install on the steel tower, Solar Array System of total output 23,760 Watts including highefficiency tier 1 modules such as Trina 660W or approved equivalent strung using 10mm sq dc cable Voc ≥850 and MC4 terminated on both sides to be mounted on the structure	W	23760		
	Steel Tower				
3.50	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. To be installed as directed by the supervising Engineer	Ls	1		
3.6	Fittings and Accessories				
	Supply, deliver , fix, test and commission the following materials:				

3.601	Supply and install armored Copper underground Cable, 10mm <sup>2</sup> X 4 core	M	25		
3.602	Supply and install Submersible PVC FLAT cable, 10mm <sup>2</sup> x 4 core	M	90		
3.603	Londex (Sensor Cable), Twin, Double Insulated.	M	90		
3.604	1.5mm*2 CORE underground cable	M	25		
3.605	Cable Joint (4-16MM0 ST 16	No.	2		
3.606	Cable Ties Black	Pks	1		
3.607	Pump stand stainless steel installation with all assorted fittings	Ls	1		
3.608	PVC Insulating Tape 1", Black	No.	20		
3.609	Supply and install DC enclosure Complete with inline 1100VDC Fused isolator (PV Disconnect 4string PV Disconnect switch)	No.	1		
3.61	PV Protect 100 VDC 125A	No.	1		
3.611	Lightning arrester	No.	1		
3.612	Copper Earth Cable 6MM	M	20		
3.613	Copper Earth Rod, 4ft c/w Clamp	No.	1		
3.614	Supply and install , test and commision 10mm 2 PV Cable core 1000VDC Tinnd copper; insulation : XLPO ; Insulation colour : black cable management in pvc Conduit.	M	30		
3.615	Supply and install , test and commision 10mm 2 PV Cable core 1000VDC Tinnd copper; insulation : XLPO ; Insulation colour : red cable management in pvc Conduit.	M	30		
3.616	Connection fittings				
3.617	Adaptor set 65mm (2½)	Nr.	1		
3.618	Galvanised steel Reducing socket 75x65mm	Nr.	1		
3.619	Galvanised steel Barrel -nipple 75mm	Nr.	1		
3.62	Galvanised steel Crane socket 75mm	Nr.	10		
3.621	Supply and install 75mm dia. Non-Return Valve and associated fittings of approved quality	No.	1		
3.622	DN110 HDPE PN25 fusion stub complete with flange, bolts and nuts	No.	2		

3.623	Provide for joints butt fusion to engineers approval.	Ls	1		
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	AMOUNT (KShs.)
	STD CHAMBERS				
3.70	Supply all Materials and Construct a Standard valve chambers 1mx1mx1m complete with steel manhole cover and a padlock to house all offtake appliances.	Nr	4		
	Amount Carried to Summary Page				
BILL 4	PROVISIONAL SUM				
	Allow a provisional sum of eighty thousand kenya shillings for Contingency to be expended on exclusive direction of the project manager upon evident project need.	Item	1		
	Add 0.03% PPRA levy before tax				
	GRAND SUMMARY				
BILL 1.0	PRELIMINARIES AND GENERAL ITEMS				
BILL 2.0	RISING MAIN				
BILL 3.0	PUMP INSTALLATION AND SOLARIZATION				
BILL 4.0	PROVISIONAL SUM				
	TOTAL TAKEN TO TENDER FORM				