

<u>KERICHO COUNTY GOVERNMENT</u> <u>SOLIAT WATER SUPPLY PROJECT</u> <u>SUMMARY OF BILLS OF QUANTITIES</u>		
BILL NO.	DESCRIPTION	AMOUNT_KShs
1	Preliminary and General Items	
2	Transmission Lines	
3	Distribution Pipework and Ancillaries	
4	500m ³ Ground Masonry Tank	
5	50m ³ Ground Masonry Tanks	
SUB TOTAL		
5% CONTINGENCIES		
TOTAL WITH CONTINGENCIES		
16% VAT		
GRAND TOTAL		
Amount in words : Kenya shillingsCents Tenderer's Signature Address Date Witness Signature Address Date		

KERICHO COUNTY GOVERNMENT					
SOLIAT WATER SUPPLY PROJECT					
BILL No. 1.0 - PRELIMINARIES AND GENERAL ITEMS					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KES)	AMOUNT (KES)
A110	Provision of Performance Security	Item	L.S		
A120.1	Insurance for Works and Contractor's Equipment	Item	L.S		
A120.2	Insurance against Injury to Third Party Persons and Damage to Property	Item	L.S		
A120.3	Insurance for Contractor's Personnel	Item	L.S		
	<u>The following provisional sums are to be measured on completion and priced in accordance with the rates contained in these bills of quantities or prorata thereto or deducted in whole if not required</u>				
A	Allow a provisional sum of Kenya shillings one hundred thousand (100,000.00) only for compliance with N.C.A and N.E.M.A regulations	Item	PC SUM		100,000.00
B	Allow a provisional sum of Kenya shillings Five Hundred Thousand (500,000.00) for Project Supervision and Management to be utilized as per the Engineers instructions	Item	PC SUM		500,000.00
C	Allow a provisional sum of Kenya shillings Fifty Thousand (50,000.00) for use in water quality sampling and testing.	Item	PC SUM		50,000.00
D	Allow a provisional sum of Kenya shillings One Hundred Thousand (100,000.00) only for use in tie in works between the existing and new works	Item	PC SUM		100,000.00
TOTAL CARRIED FORWARD TO SUMMARY SHEET					

KERICHO COUNTY GOVERNMENT					
SOLIAT WATER SUPPLY PROJECT					
BILL No. 2.0 - MAIN TRANSMISSION LINE					
ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE_KShs	AMOUNT_KShs
A	<u>TESTING OF WORKS</u>				
	Testing, Disinfection & Flushing of Pipelines and Fittings. Pressure Testing exc.16 bar but not exc.25 bar.				
A-1	Testing and Commissioning of pipes as specified. Pipe Size DN - 150mm	m	1220		
A-2	Flushing and disinfection of the Pipes as specified. Pipe Size DN - 150mm	m	1220		
B	<u>PIPEWORK -PIPES & FITTINGS</u>				
	STEEL Pressure Pipes KS 150 PN 16 With ISO Certification. Bends and Fittings to be PN 20				
	Rate to include for pipes supply, supply of valves/fittings, transport and insurances, excavation and backfilling works, pipe laying, anchorage works and profits and overheads. The pipes and fittings are to be laid in accordance with Drawings provided and to the engineers instructions				
B-1	Supply and installation of DN 150 PN 16 Steel pipeline from end of existing pipeline to the new proposed 500m ³ ground tank, depth range n.e 1.5 m	m	1220		
B-2	Allow a provisional sum for repair of DN 150 existing pipeline from intake to the start of new alignment pipeline, total length = 2140m	PC Sum	1		500,000.00
	Air Valves and Washout as specified				
B-4	Air Valve -Nominal bore 150mm Double orifice air valve. Rate should include all necessary pipes and fittings, chamber with covers etc and as directed by the Engineer	No.	2		
B-5	Washout-Nominal bore 150mm Double orifice air valve. Rate should include all necessary pipes and fittings, chambers with covers etc and as directed by the Engineer	No.	1		
	Marker Posts				
B-6	Marker posts for Air Valve inscribed 'AV'	No.	2		
B-7	-Ditto- but Water Main inscribed 'WM'	No.	1		
B-8	-Ditto- but Washout inscribed 'WO'	No.	1		
	Water Meter				
B-9	Provide and install DN150 Elster Type Mechanical Water Meter at the Intake. Rate should include all necessary fittings, chamber with cover and as directed by the Engineer	No.	1		
	Intake				
	Provide a provisional sum of 500,000 for rehabilitation of the existing water intake as shall be directed by the Engineer	PC Sum			500,000.00
BILL NO. 2 CARRIED OVER TO SUMMARY SHEET					

KERICHO COUNTY GOVERNMENT					
SOLIAT WATER SUPPLY PROJECT					
BILL No. 3.0 - DISTRIBUTION NETWORK LINES					
BILL	ITEM DESCRIPTION	UNIT	QUANTITY	RATE_KShs	AMOUNT_KShs
A	<u>TESTING OF WORKS</u>				
	Testing, Disinfection & Flushing of Pipelines and Fittings. Pressure Testing exc.10 bar but not exc.20 bar,				
A-1	Testing and Commissioning of pipes as specified. Pipe Sizes Range DN 32 - 150mm	m	19,942		
A-2	Flushing and disinfectionof the Pipes as specified. Pipe Size Range DN 32 - 150mm	m	19,942		
B	<u>PIPEWORK -PIPES & FITTINGS</u>				
	PVC Pressure Pipes KS 150 PN 12 With ISO Certification. Bends and Fittings to be PN 12				
	Rate to include for pipes supply, supply of valves/fittings, transport and insurances, excavation and backfilling works, pipe laying, anchorage works and profits and overheads. The pipes and fittings are to be laid in accordance with Drawings provided and to the engineers instructions				
B-1	Supply and installation of DN 110 PN 12 uPVC pipeline as per the network layout, depth range n.e 1.0 m	m	2162		
B-2	Supply and installation of DN 90 PN 12 uPVC pipeline as per the network layout, depth range n.e 1.0 m	m	7290		
B-3	Supply and installation of DN 32 PN 12 uPVC pipeline as per the network layout, depth range n.e 1.0 m	m	952		
	PVC Pressure Pipes KS 150 PN 10 With ISO Certification. Bends and Fittings to be PN 10				
B-4	Supply and installation of DN 150 PN 10 uPVC pipeline as per the network layout, depth range n.e 1.0 m	m	450		
B-5	Supply and installation of DN 75 PN 10 uPVC pipeline as per the network layout, depth range n.e 1.0 m	m	1110		
B-6	Supply and installation of DN 63 PN 10 uPVC pipeline as per the network layout, depth range n.e 1.0 m	m	2775		
B-7	Supply and installation of DN 50 PN 10 uPVC pipeline as per the network layout, depth range n.e 1.0 m	m	5203		
TOTAL CARRIED FORWARD TO NEXT PAGE					

KERICHO COUNTY GOVERNMENT					
SOLIAT WATER SUPPLY PROJECT					
BILL No. 3.0 - DISTRIBUTION NETWORK LINES					
BILL	ITEM DESCRIPTION	UNIT	QUANTITY	RATE_KShs	AMOUNT_KShs
TOTAL FROM PREVIOUS PAGE					
	Air Valves and Washout as specified				
B-8	Air Valve -Nominal bore 110mm Double orifice air valve. Rate should include all necessary pipes and fittings, chamber with covers etc and as directed by the Engineer	No.	1		
B-9	Air Valve -Nominal bore 90mm Double orifice air valve. Rate should include all necessary pipes and fittings, chamber with covers etc and as directed by the Engineer	No.	5		
	Marker Posts				
B-10	Marker posts for Air Valve inscribed 'AV'	No.	7		
B-11	-Ditto- but Water Main inscribed 'WM'	No.	5		
	Water Meters				
B-12	Provide and install Elster Type Water Meter at tank outlet, DN 150. Rate should include all necessary fittings, chamber with cover and as directed by the Engineer	No.	1		
B-13	Provide and install Elster Type Water Meters at tank outlets, DN 90. Rate should include all necessary fittings, chamber with cover and as directed by the Engineer	No.	4		
BILL NO. 3 CARRIED OVER TO SUMMARY SHEET					

KERICHO COUNTY GOVERNMENT					
SOLIAT WATER SUPPLY PROJECT					
BILL No. 4.0 - CONSTRUCTION OF 500M ³ WATER STORAGE TANK AT KOIBARAK					
NO.	DESCRIPTION	UNIT	QUANTITY	RATE(Kshs)	AMOUNT(Kshs)
A	GENERAL ITEMS				
A2	TESTING OF THE WORKS				
	Testing, Disinfection & Flushing of Pipelines and Fittings associated with the tank and the tank itself. Pressure Testing exc.12 bar but not exc.25 bar. Testing to include for water tightness as specified				
A260	Testing and Commissioning of the tanks and pipes as specified or as directed by the Engineer. Include provision of all equipment, materials and works necessary for testing. Of the installed tanks and	nr	1.00		
A290	Disinfection of the tanks and Pipes as specified or as directed by the Engineer. This includes supply of all necessary Equipment, Materials, Chemicals, Water, Measurement of Residual Chlorine, etc, and safe disposal of disinfecting water, Of the installed tanks and	m	1.00		
D	DEMOLITION & SITE CLEARANCE				
D1	GENERAL CLEARANCE				
D100	Clear site within and around proposed storage tank for all rubbish, vegetation, bushes and grasses and artificial artucles above the original ground surface.	ha	0.15		
D210	Trees girth 0.5-1m	nr	5.00		
E	EARTHWORKS				
	EXCAVATIONS FOR FOUNDATIONS				
E32	Excavate below stripped surface to formation level in common material. Retain approved material for back-filling / filling and cart away unsuitable				
E322	Excavate to reduce levels in top soil for depth not exceeding 0.25m	m ³	38.00		
E323	Excavate for tank in material other than top soil, rock or artificial hard material depth range 0.5-1m	m ³	154.00		
E334	Excavation in rock	m ³	77.00		
TOTAL CARRIED FORWARD TO NEXT PAGE					

TOTAL FROM PREVIOUS PAGE					
E5	Excavation Ancillaries				
E53	Disposal of Excavation Material				
	Approved material shall be retained for filling/backfilling and unsuitable material shall be disposed to tips as directed by the				
E539	Top soil, normal soil, rock, artificial hard material and excavated material as directed by the engineer haulage	m ³	269.00		
E6	FILLING				
	Filling to completed structures including				
E632	Selected excavated material other than topsoil, rock or artificial hard material	m ³	61.54		
E637	Provide and fill hard core with hard basaltic or equivalent stone, well compacted and blinded with crushed stone to a finished thickness of 250mm under	m ³	38.47		
F	<u>IN SITU CONCRETE</u>				
	Provision of concrete				
	Mass concrete; class 15/20				
F521	75mm thick lean concrete blinding with mix ratio (1:3:6) under the reservoir base slab, foundation and valve	m ³	7.60		
F6	Reinforced Concrete class 25				
	To bases, footings, and ground slabs not less than 150mm thickness but n.e. 600mm				
	Rate to include for laying, curing and all the works pertaining to concreting. The concrete to be laid to a maximum height of 30m above ground and to				
F622	Reinforced concrete; class 25/20: Footing	m ²	4.50		
F624	Reinforced concrete; class 25/20: Base slab,	m ³	48.99		
F632	Reinforced concrete; class 25/20: Topslab	m ³	38.47		
F643	Reinforced concrete; class 25/20: Walls	m ³	77.20		
F653	Reinforced concrete; class 25/20: Column, 300x300mm	m ³	1.60		
TOTAL CARRIED FORWARD TO NEXT PAGE					

TOTAL FROM PREVIOUS PAGE					
G	CONCRETE ANCILLARIES				
	Dimensions as per details on specific structural drawings.				
G2	Formwork: Fair finish; concrete components of constant cross-section				
G215.1	Slabs	m ²	205.66		
G215.2	Columns	m ³	10.20		
G215.3	Beams	m ²	43.36		
G255.1	External sides	m ²	560.40		
G255.2	Internal sides	m ²	30.80		
G5	Reinforcement; deformed high yield steel bars to BS 4449, HT = 425 N/mm2				
G529	Nominal size 8,10,12,16,25 mm	Ton	17.10		
G562	Steel fabric BS4483 ; A252 square mesh; nominal mass 3 - 4kg/m2	LS	1.00		
G6	Joints				
G611	Open surface plain;average width n.e. 0.5 m	m ²	120.00		
G621	Open surface with filler; average width n.e.0.5 m	m ²	62.00		
G652	Plastic water stops average width 150mm - 200 mm	m ²	32.00		
G662	Metal water stops ; average width 150 mm - 200 mm	m ²	62.00		
G670	Sealant 20 x 20 mm rebate with polysulphide joint sealant	m ²	55.00		
G8	CONCRETE ACCESSORIES				
G2.9.7.1	Provide and apply 50mm cement screed to the reservoir floor and roof slab	m ²	307.92		
G2.9.7.2	Provide and apply 3 coats of plaster to internal walls	m ²	167.15		
G2.9.7.3	Rendering external wall,top roof slab & bottom floor slab and supporting columns & beams	m ²	321.11		
TOTAL CARRIED FORWARD TO NEXT PAGE					

TOTAL FROM PREVIOUS PAGE					
G271.1	Form opening 600 x 600mm x 0.6m deep opening for	nr	1.00		
G271.2	Form opening 1020 x 1020mm opening for inlet pipe	nr	1.00		
G271.3	Form access opening 1000 x 800mm opening for	nr	1.00		
G271.4	Form 600 x 600mm opening for access manhole at	nr	1.00		
G2.9.7.5	Provide and apply two coats of bituminous asphalt over the plastered surface of the embedded part of the	m ²	34.10		
G2.9.7.6	Provide and place single brick layer cover to protect the asphalt coat from the backfill material	m ²	34.10		
J	PIPEWORK – FITTINGS AND VALVES				
	Supply and Install Steel Inlet and Outlet pipes and fittings and valves of PN10 with all required accessories, rubber sealing flat gaskets, bolts, nuts				
	INLET PIPE WORKS				
J311.1	DN 300 ,90 degree bend	nr	1.00		
J312.1	DN 300, 90 degree Duck foot bend	nr	1.00		
J381.1	DN 300 Single flanged spigot	m	5.00		
J381.2	DN 300 Double flanged spigot with puddle flange	m	1.00		
J811.1	DN 300 Double flanged valve	nr	1.00		
J891.1	DN 300 ball valve with associated fitting	nr	1.00		
	OUTLET PIPE WORKS				
J811.2	DN 300 Double flanged valve	nr	1.00		
J381.3	DN 300 Single flanged spigot with puddle falnge	nr	1.00		
J393.1	DN 300 fine and course screen	m	2.00		
TOTAL CARRIED FORWARD TO NEXT PAGE					

TOTAL FROM PREVIOUS PAGE					
	OVERFLOW PIPE WORKS				
J311.2	DN 300 ,90 degree bend	nr	1.00		
J311.3	DN 300 30 degree medium double flanged bend	nr	1.00		
J372	DN 300 flanged bellmouth	m	1.00		
J381.2	DN 300 Double flanged spigot with puddle flange	m	1.00		
J381.4	DN 300 Single flanged spigot	m	1.00		
	SCOUR PIPE WORKS				
J811.3	DN 200 Flanged Gate Valve	nr	1.00		
J381.5	DN 200 double flange spigot L= 1.9m with puddle flange	nr	1.00		
N	<u>MISCELLANEOUS METAL WORK</u>				
	Rate to include supply, delivery, fixing and inclusive of foundation where applicable				
N130.1	Galvanized mild steel external ladders with stringers returned to form handrails as per international safety requirement. The Contractor shall Design, supply and install the ladder and the work shall include landing platform having sufficient space allowing more than	m	10.00		
N130.2	Provide and install access internal ladder constructed out of stainless steel of 25mm and hooked to the wall	No	1.00		
X	<u>MISCELLANEOUS WORKS</u>				
	<i>Footpaths</i>				
X199.1	Provide all materials and construct Footpaths made of Precast Concrete Paving slabs, 600 x 600 x 50mm	m ²	100.00		
	<i>Surface Water Drainage</i>				
X341.1	Trapezoidal Earth Drain Type 'T1', cross sectional area n.e. 0.5m ² , including topping with 100mm top soil and	m	80.00		
TOTAL CARRIED FORWARD TO SUMMARY SHEET					

KERICHO COUNTY GOVERNMENT					
SOLIAT WATER SUPPLY PROJECT					
BILL No. 5.0 - CONSTRUCTION OF 50M ³ WATER STORAGE TANKS					
ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (KES)	AMOUNT (KES)
	A2 ; TESTING OF THE WORKS				
	Testing, Disinfection & Flushing of Pipelines and Fittings associated with the tank and the tank itself. Pressure Testing exc.12 bar but not exc.25 bar. Testing to include for water tightness as specified in the specifications				
A260.1	Testing and Commissioning of the installed tank as specified (50m ³)	nr	1.00		
A260.2	Testing and Commissioning of pipes as specified.	m	75.00		
	<u>E3 : EXCAVATIONS FOR FOUNDATIONS</u>				
	Excavate below stripped surface to formation level in common material. Retain approved material for back-filling / filling and cart away unsuitable material to tip as directed by Engineer				
E311	Excavation of topsoil depth not exceeding 0.25m	m ³	6		
E322	Excavation of material other than top soil rock or artificial hard material depth 0.25 - 0.5m	m ³	6		
E323	Excavation for material other than topsoil rock or any other artificial hard material; maximum depth 0.5 - 1.0 m	m ³	3		
E33	Excavation of foundation in rock	m ³	5		
	E5 ; Disposal of Excavation Material				
E512	Trimming of excavated surfaces; material other than topsoil, rock or artificial hard material	m ²	10.7		
E524	Preparation of excavated surfaces to receive fill and permanent works; materials other than topsoil or rock	m ²	10.7		
E525	Preparation of excavated surfaces to receive fill and permanent works; in rock	m ²	10.7		
E531	Disposal of excavated topsoil	m ³	6.49		
E532	Disposal of excavated material other than top soil rock or artificial hard material	m ³	9.09		
E532	Disposal of excavated rock	m ³	5.00		
	E6 ; FILLING				
E632	THICK RED SOIL COMPACTED TO 98% MDD in layers not exceeding 200mm as shown by RE	m ³	10.39		
E635	Provide and fill with imported 300mm gravel compacted to 98% MDD in layers not exceeding 150mm	m ³	3.90		
E637	Provide and fill hard core with hard basaltic or equivalent stone, well compacted and blinded with crushed stone to a finished thickness of 250mm under the reservoir and valve chamber to stated depth or thickness	m ³	9.09		
TOTAL CARRIED FORWARD TO NEXT PAGE					

TOTAL FROM PREVIOUS PAGE					
	F ; INSITU CONCRETE				
	<u>Provision of Concrete</u>				
F253	Designed mix; Grade C35A; Cement to BS12 and 20mm maximum aggregate size	m ³	10.34		
F400	Prescribed mix; Grade C15P; 20 mm aggregate; Cement to BS12	m ³	1.95		
	<u>Placing of Concrete</u>				
	Place, compact and cure concrete in the following elements of the structure as per details on Drawings				
	<u>Mass Concrete: Class 15/20</u>				
	F6 ; Mass concrete				
F611	75mm thick lean concrete blinding with mix ratio (1:3:6) under the reservoir base slab, foundation and valve chamber	m ³	1.95		
	F7 ; Reinforced Concrete class 30				
F723	Floor slab, bases and foundation footings	m ³	4.91		
F732	Suspended slabs (Top roof) thickness 200mm	m ³	3.93		
F785	For overflow chamber complete with the base opening	m ³	1.50		
	G ; CONCRETE ANCILLARIES				
	G2 ; Fair Finish Formwork				
G215	Plane vertical sides for both external and internal walls	m ²	81.22		
	G5 ; Reinforcement; deformed high yield steel bars to BS 4449, HT = 425 N/mm2				
G529	Nominal size 8,10,12,16,25 mm	Ton	1.03		
G562	Steel fabric BS4483 ; A252 square mesh; nominal mass 3 - 4kg/m2	LS			
	G6 ; Joints				
G611	Open surface plain;average width n.e. 0.5 m	m	19.64		
G621	Open surface with filler; average width n.e.0.5 m	m	4.00		
G652	Plastic water stops average width 150mm - 200 mm	m	4.00		
G654	Plastic or rubber water stop in floor/wall base joints; Average width 350mm	m	4.00		
G670	Sealant 20 x 20 mm rebate with plysulphide joint sealant	m	8.00		
	<u>Inserts; Excluding supply of the fittings</u>				
G832.1	Inlet, outlet, overflow and washout pipe inserts into concrete	Nr	4.00		
G832.2	Roof vents inserts in concrete	Nr	4.00		
G832.3	Roof drain inserts in concrete	Nr	4.00		
G831.1	Perforated Roof drain pipe inserts in concrete	m	22.00		
TOTAL CARRIED FORWARD TO NEXT PAGE					

TOTAL FROM PREVIOUS PAGE					
	SITE WORKS				
	J ; PIPEWORK – FITTINGS AND VALVES				
1299	Supply of Precast concrete pipes to be used as underground drainage. The rate to include for, supply instalation and backfilling of the pipes as per Engineers instruction	PC Sum			
1999	Supply of pipes and fittings to be used for The connection of the tank, inlet , outlet, overflow and scour as shown in the drawings. Rate to include for laying jointing and any other fittings used for connection	LS			
	<u>PIPE WORK - MANHOLES AND PIPEWORK ANCILLARIES.</u>				
K233.1	Reservoir Scour/Overflow chamber without roof cover slab as detailed; 200mm thick walls, depth 1.0 - 2.0m, 4m ² plan area	No.	1.00		
K234.1	Reservoir Inlet Valve Chamber as detailed; 200mm thick walls, depth 1.0 - 2.0m, 4m ² plan area	No.	1.00		
K234.2	Reservoir Outlet Valves Chamber detailed; 200mm thick walls, depth 1.0 - 2.0m, 4m ² plan area	No.	1.00		
	Miscellaneous Metalwork				
	Rate to include supply, delivery, fixing and inclusive of foundation where applicable				
N130.1	Stainless Steel internal access ladder with safety loops, stringers and landing rail	m	4.00		
N130.2	Galvanised Mild Steel external access ladder with landing rails and stringers	m	4.00		
N190	Provide and fix 6 mm sheet metal access cover with 40x40 angle iron frame with latch and safety lock for valve chamber and reservoir	No	1.00		
N190	Galvanized mild steel air vents as shown on the drawings.	m	4.00		
	<u>CLASS U: BRICKWORK, BLOCKWORK AND MASONARY</u>				
U721	200mm thick ashlar masonry vertical straight walls; thickness 150 - 250 mm. To include mortar and fixing reinforcement at the joints	m ²	46.97		
	<u>CLASS V: PAINTING</u>				
V653	Two coats of cement paint on rendered external walls.	m ²	46.97		
	TOTAL FOR 1 NO. TANK				
	TOTAL FOR 4 TANKS CARRIED FORWARD TO SUMMARY SHEET				