



Ref: CWWDA/T/W/05/2023-2024

Date: 20th October 2023

Dear Bidders,

**RE: CONSTRUCTION OF WATER HARVESTING FACILITIES AT MIDOINI
SECONDARY SCHOOL -RESERVED FOR YOUTH**

TENDER NO. CWWDA/T/W/05/2023-2024

ADDENDUM NO.1

Reference is made to the above subject matter.

Pursuant to clause 10.1 of the Instruction to Tenders(ITT), the following sections of the bidding for the above mentioned tender has been amended as follows:

- 1. SECTION VI – Bills of Quantities appearing on page 65-75 be Deleted and replace with the enclosed Revised Bill of Quantities (Annex I)***
- 2. SECTION V (DRAWINGS) - The actual drawings and plans are enclosed as Annex II.***


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Ag. CHIEF EXECUTIVE OFFICER



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BILLS OF QUANTITIES

CONSTRUCTION OF RAIN WATER HARVESTING FOR MIDOINA SECONDARY SCHOOL PROJECT					
BILL NO. 1 - PRELIMINARY AND GENERAL OBLIGATIONS					
ITEM	DESCRIPTION	UNIT	QUANTITY	AMOUNT (KShs.)	AMOUNT (KShs.)
1	<u>Provisional Sums</u>				
	<u>BILL No. 1: GENERAL ITEMS</u>				
1	<i>Item covers elements of work which be considered as proportional to the to the are not to quantities of the permanent works</i>				
	<u>Contractual requirements</u>				
	Total value should conform to clause 60(I) partII conditions of contract				
1.1	Insurance of the works	SUM	L.S		
1.2	Third party insurance	SUM	L.S		
1.3	Signboards provide, erect ,maintain and remove on completion Ino. Signboards in accordance to specifications /as directed by the Site Engineer (Use APPROVED HARDWOOD)	Nr	1		
	<u>Specified requirements</u>				
1.4	Allow for supervision by Coast Water Works Development Agency Staff	SUM	1	450,000.00	450,000.00
1.5	Fuels for vehicle for the Supervision staff for the entire duration of the project	SUM	1	300,000.00	300,000.00
1.6	Allow for contractors overheads for above items 1.4 and 1.5	%		750,000	
	TOTAL CARRIED TO COLLECTION PAGE				

	Attendance upon the Engineer's staff				
1.70	Establishment of Contractors camp office, facilities, etc and provision of all equipment that will be required during the entire Contract period.	Sum			
	TOTAL CARRIED TO COLLECTION PAGE				-
	BILL NO. 1.0: COLLECTION				
	From Page 1				-
	From Page 2				
	BILL NO 1: TOTAL CARRIED TO SUMMARY PAGE				-

CONSTRUCTION OF RAIN WATER HARVESTING SYSTEM FOR MIDOINA SEC SCHOOL					
BILL NO. 2: CIVIL WORKS					
ITEM	ITEM DESCRIPTION	UNIT	QUANTIT Y	RATE	AMOUNT (SHS)
2.1	Procure and Install 2Nr PVC plastic tank of 24m ³ each. The size should be of short and wide base due to roof hieght	Nr	2		
2.2	Procure and Install 2Nr PVC plastic tank of 10m ³ each to be placed at the Platform	Nr	2		
2.3	Supply and fix Fiscia board 8" X 1" to an existing roof to hold gutters	M	80		
2.4	Provide and apply relevant paint to fixed fascia boards as may be directed by the project supervisor	Item	1		
2.5	Supply and install strategically, DN 140mm half round PVC plastic 5m long gutters to detail capable of holding and transmitting rain water safely	Nr	150		
2.6	Supply and fix standard gutter support brackets DN 140mm spaced 1.0m apart	No	120		
2.7	Supply and fix, strategically DN 140mm gutter stop end	No.	8		
2.8	Supply and fix click fit with running outlet PVC 140 x 75 mm	No	8		
2.9	Provide and install DN 90mm HDPE PN10 pipes for water supply reticulation within the institution, together with all necessary pipe fittings	Sum	1		
2.10	Supply and install 90mm PVC down pipe	M	100		
2.11	Supply and install 90mm PVC down pipe bends	No.	8		
2.12	Supply and install 90mm PVC down pipe clips	No	8		
2.13	Supply and install 3/4" peger tap	No	15		
2.14	Supply and install 3/4" GI union	No	8		
2.15	Supply DN90mm Elbows	No	8		
	SUB TOTAL				
2.2	BASE SLAB				
2.21	Procure and supply machine cut natural stone blocks	No	1000		

2.22	Excavate void to create space for slab foundation	M3	20		
2.23	Procure and supply Ballast	Ton	20		
2.24	Procure and supply sand	Ton	60		
2.25	Procure and supply Hard core	Ton	60		
2.26	Construct a circular block wall 1.5 dia to form wall and 2 no. diagonal inside walls intersecting at centre of the tank base. The base should be 0.5m a.g.l.	M2	24		
2.27	Procure and supply Wire mesh(4x8 feet)	No.	8		
2.28	Fill hardcore in the circular block wall and compact well with sand.	M3	150		
2.29	Construct a reinforced top slab of 50mm supported by a BRC No. A142 and leave to cure well.	M3	4		
	SUB TOTAL				
	GRAND TOTAL CARRIED TO SUMMARY PAGE				

BILL No. 3	CONSTRUCTION OF RC TOWER FOR 2Nr STORAGE TANKS				
Bill No.	RC TOWER 1Nr. FOR WATER STORAGE TANKS				
	DESCRIPTION	UNIT	QTY	UNIT RATE (KES)	TOTAL (KES)
1.00	Site Clearance, Excavation and Earthworks.				
	Excavation including maintaining and supporting sides and keeping free from water, mud and fallen materials by bailing, pumping or otherwise				
1.10	Prepare site by stripping top 150 mm of soil to remove all debris including sand (if any) from site and carting away spoil	m2	31		
1.20	Excavate trench commencing at reduced levels depth not exceeding 1.50m deep	m3	11		
1.30	Pit excavation commencing at reduced levels depth not exceeding 2.0m deep	m3	28		
1.40	Extra-over for excavation in rock	m3	2		
1.50	Remove surplus excavated material from site	m3	4		
1.60	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers	m3	8		
2.00	Concrete works				
	In situ concrete: Provision and placing. Rate to include for shuttering				
2.10	50mm Thick blinding	m3	2		

	Vibrated Reinforced Concrete class 25 (1:1.5:3) with 20m m thick maximum aggregate size .Rate to include for shuttering and formwork.				
2.20	Ground beam	m3	5		
2.30	Column base	m3	5		
	Vibrated Reinforced Concrete class 25 (1:1.5:3) with 20m m thick maximum aggregate size, Rate to include for shuttering and formwork.				
2.40	Tie beam	m3	7		
2.50	Columns	m3	5		
3.00	Reinforcement				
3.10	Reinforcement bars (all sizes) as shown on drawings	kg	2,200		
4.00	Parapet Walling				
4.10	Install parapet walling to tanks 1.2m high using machine cut blocks 200mm	m2	40		
4.00	Finishes				
	<u>Cement and sand mortar (1:3) rendering in:</u>				
4.10	25 mm Thick screed to all columns	m2	11		
4.20	25 mm Thick screed to all Beams	m2	11		
4.30	15mm plaster to internal sides of parapet walling wall with waterproof cement	m2	30		

4.40	15mm plaster to External sides of parapet walling wall with waterproof cement	m2	32		
5.00	Water Supply System				
	<u>PPR pipes PN12.5 including jointing, fittings and fixed as described</u>				
5.10	65mm diameter inlet pipe	nr	1		
5.20	65mm diameter draw off	nr	1		
5.30	65mm diameter overflow pipe Ditto	nr	1		
5.40	65mm diameter scour pipe Ditto	nr	1		
5.50	20mm diameter brass gate valve with wheel and head	nr	1		
5.60	20mm diameter stop corks	nr	1		
5.70	600x600x6mm heavy gauge steel primed metal manhole cover on slab with and including metal framing all around	nr	1		
5.80	20mm Diameter bars, 'U' shaped to form steps with ends embedded into retaining wall, average length 450mm	nr	8		
	Plastic Tanks 2nr x10,000litres				
5.90	Supply, installation and testing of 2nr Durable plastic Tanks 10,000litres each RC tower 10m high	nr	2		
5.10	Allow Sum for plumbing works to interconnect plastic tanks to water supply using 3 inch PPR pipe/hdpe pn12.5	Item	1		
	TOTAL BILL NO. 3 CARRIED TO SUMMARY PAGE				

BILL NO. 4 PROCURE AND INSTALL A 1HP SUBMERCIBLE PUMP					
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (KShs.)
5	PROCURE ALL NECESSRY FITTINGS AND ACCESORIESA AND INSTALL A 1.0 HP SUBMERCIBLE				
5.1	<i>Procure, deliver all necessary Fittings and accesories and install a 1.0 HP pump. The pump should be of submercible type, driven by a Solar system with automatic switch Gear, as shall be directed by the project Engineer</i>	Sum			
	These includes, but not limited to, Appropriate Sunverter, Solar modules, Motor, Connectors, support structure and all other necessary fittings, as may be advised by the Site Engineer.				
	SUB-TOTAL				

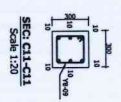
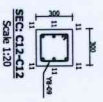
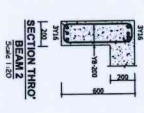
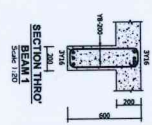
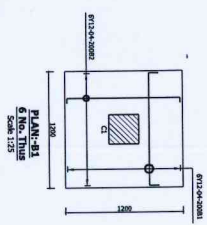
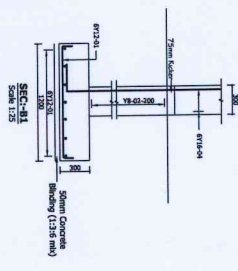
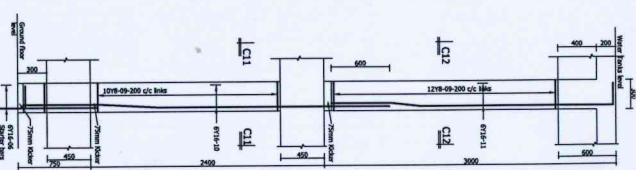
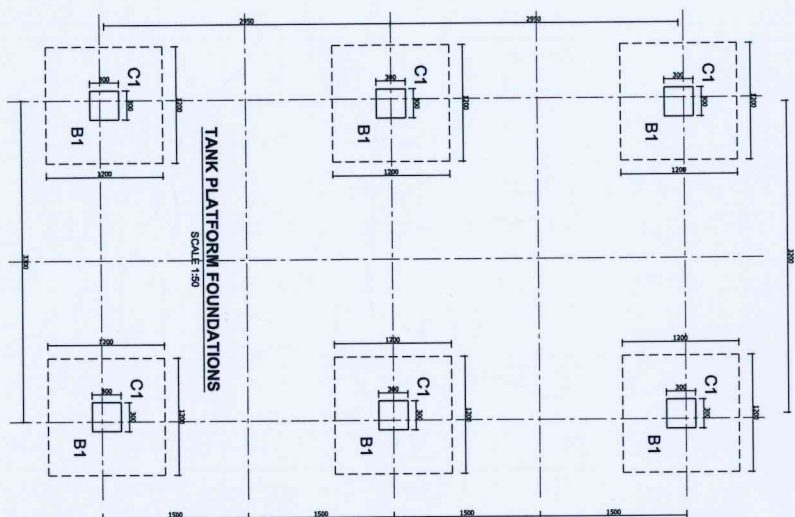
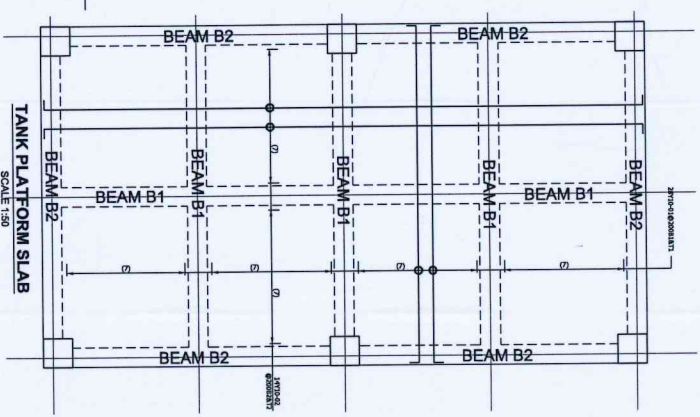
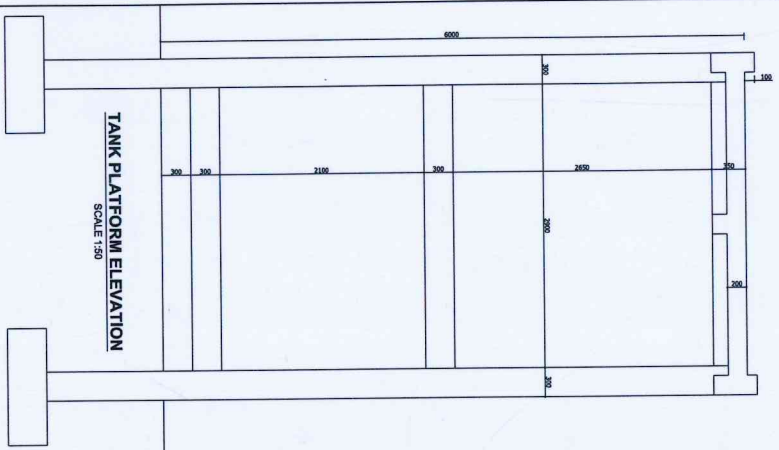
Bill No. 5	<u>MASONRY TANK 50M3</u>				
	DESCRIPTION	UNIT	QTY	UNIT RATE	TOTAL
				(KES)	(KES)
	CONSTRUCTION OF 1No. MASONRY UNDERGROUND WATER TANK 50 M3				
1	EXCAVATION AND EARTHWORKS				
1.1	Clear site of bushes,shrubs,,shrubs and burn on site as directed	sm	36		
1.2	Excavate tank base starting from ground level but not exceeding 1.5m deep in coral rock	cm	54		
1.3	Excavate for 1No centre column Base as directed by engineer	cm	0.7		
1.4	Return fill and ram selected excavated material around the tank	cm	16		
1.5	Cart away fro site surplus excavations spoil as directed	cm	38		
1.6	300mm thick approved hardcore fill in making up levels and compacted	sm	36		
	Quary dust	m2			
	Damp proof membrane	m2			
	CONCRETE WORKS				
2.1	50mm thick plain concrete class x mix (1;4;8) blinding	sm	36		
2.2	Vibrabrated in situ Reinforced concrete class 20/20 (1:2:4)in.				
	i1)150mm thick floor slab	cm	4.6		
	iii)column base andcolumn	cm	0.3		
	iv)ring beam	cm	0.9		
	roof cover slab	cm	4		
2.3	Formwork				
	i)sides of base column	sm	8		

	ii) sides and edges of floor slab curved on plan 150-225	lm	22		
	iii) soffit of roof slab	sm	24		
	iv) sides and edges of roof slab in ranges of 150mm-225mm	lm	23		
	v) sides and soffit of ringbeam	sm	18		
	STEEL REINFORCEMENT				
	HIGH YIELD TENSILE STEEL COLD WORKED bs4461 RATE TO INCLUDE CUTTING, BEDDING AND TYING				
2.4	Floor slab				
	i) 10mm diameter bars	mts	240		
	ii) 12mm diameter bars	mts	156		
2.5	walling bars				
	i) 8mm diabar	m	720		
2.6	column base and column				
	i) 8mm diameter round bar	m	6		
	ii) 12mm square twisted	mts	72		
2.7	roof slab				
	i) 10mm diameter bars	mts	542		
	ii) 16mm diameter bars	mts	24		
2.8	beams				
	i) 12mm diameter (R8) bars	mts	72		
	ii) 8mm diameter bars square twisted bars	mts	68		
2.9	walling				
	solid concrete block wall curved in plan at 3.02 radius joint with cement mortar 1:3 (225 X 300 X 150mm)- W x L x H	sm	48		
4	FINISHES				
4.1	Apply two coats of bituminous paint to floor slab 400mm wide, before start of walling	lm	17		
4.2	Ditto on top of walling 280mm wide, before roof slab	lm	17		
4.3	seal joint between wall and floor slab, and round column with 2.5x40mm bondex	lm	17		
4.4	50mm thick cement and sand (1:2) plaster on walls internally. mixed with water proof cement and finish smooth with water proof cement grout	sm	48		

4.5	50mm thick cement and sand (1:2) on floor screed finished smooth with water proof cement	sm	20		
4.6	30mm thick cement and sand screed (1:3) on top of roof cover slab laid to fall	sm	20		
4.7	25mm thick cement and sand (1:3) plaster to walls externally	sm	50		
4.8	600x600mm precast concrete manhole covers to be fixed in position	no	1		
4.9	fabricate steel ladder 400mm wide with rungs at 250mm centre to centre with lugs fix in tank wall at 900 mm spacing, and painted with alluminium paint before fixing. overal height 3.3m external ladder	no	1		
4.1	ditto, overal height 3.2 high internal ldder	no	1		
4.11	apply tree coats of white emulsion paint to external wall	sm	48		
4.12	apply two coats of gloss paint royal blue in colour	sm	12		
4.13	apply two coats of black bituminous paint to a height of 300 mm from ground level	sm	4.8		
4.14	construct masonry valve chambers internal size 1.2 x1.2 m complete with concrete cover	no	2		
5	PIPES AND FITTINGS				
	i) measurement have been to the first chamber to tank inlet	no	1		
	ii) 80mm diamer Gi pipe class B	NO	1		
	iii) 8mm Gi bend 90 degrees	no	3		
	iv) 80mm diameter GI socket	no	3		
	v) 80mm diammete union	no	2		
	vi) 80mm sluice valve pn 16	no	1		
	vii) 80mm flages drilled with 4holes	no	2		
5.2	OUTLET PIPE				
	i) 80mm diameter PVC pipe class E	no	1		
	ii) 80mm diameter PVC bend 90 degrees	no	1		
	iii) 100x80 mm reducing socket	no	1		
	iv) 80mm dia PVC sopcket	no	2		
	v) 80mm diameter gate valve flanges drilled with 4 holes	no	1		

	vi) 80mm diameter flanges filled with 4holes complete with 16mm diameter bolts and nuts 63mm long threats and sunction rubber gaskets	no	2		
	vii)80mm diameter coupling vjcouplings	no	2		
	viii)80mm diamete PVC tee	no	2		
5.3	SCOUR PIPE				
	I) 80mm diammeter PVC pipe class B	No	1		
	ii)80mm PVC bend 90 degrees	no	1		
	iii)100mm x80mm diameter reducing socket	no	1		
	iv)80mm diammeter Gi socket	no	2		
	v) 80mm sluice valve drilled with 4 holes	no	1		
	vi) 80mm diameter flanges drilled with 4 holes complete with 16mm diammeter bolts and nuts 16mm long threads and sunction rubber gasket	no	2		
5.4	OVERFLOW PIPE				
	I) 80mm diammeter PVC nipple 600mm long,threaded one side and welded with puddle flage at middle	no	1		
	ii)80mm Gi bend 90 degrees	no	1		
	iii)80mm diammeter gi socket	No	1		
5.5	VENT PIPE				
	I) 100mm diameter PVC nipple 600mm long threaded both ends and welded with puddle flage at middle	no	2		
	ii) 100mm diameter PVC bend 90 degrees	no	8		
	iii) 100mm diameter PVC Tee	no	4		
	iv) plastic mosquito gauze wire(to be tied at one of the bend with galvanised bidding wire	Lm	1		
6	Allow sum for connection water supply to the end of existing tank	item	1		
	TOTAL CARRIED TO SUMMARY PAGE				

	GENERAL SUMMARY		
	CONTRACT No. _____		
	NAME OF CONTRACT: CONSTRUCTION OF RAIN WATER HARVESTING SYSTEM FOR MIDOINA SECONDSRY SCHOOL		
	DESCRIPTION	PAGE	AMOUNT (KES)
BILL No. 1	PRELIMINARY AND GENERAL ITEMS		
BILL No. 2	CIVIL WORKS AND ACCILARY		
	-		
BILL No. 3	CONSTRUCTION OF WATER TOWER		
BILL No. 4	CONSTRUCTION OF 50M3 MASONRY TANK		
BILL No. 5	PROCUREMENT AND INSTALLATION OF 1.0HP SUBMERCIBLE PUMP		
	Total of Bills inclusive of Provisional Sums and Prime Cost Sums	A	
	Sub-Total(A)	A	
	Allow for all Local Taxes and Duties including 16% VAT on "B" above	B	
	Bid Price (A+B) (Carried forward to Letter of Bid)	C	
	Amount in Words:.....		
	Bidder's Name:		
	Bidder's Signature:		
	Date:		
	Official Ruber Stamp		



NOTES

1. All dimensions are in mm unless otherwise specified
2. All dimensions to be read off and not scaled.
3. Any discrepancies with dimensions to be notified to the Engineer before commencement of work.
4. All water pipes are HDPE and Steel pipes
5. A nominal minimum cover to reinforcement shall be 25mm
6. Header posts shall be provided along pipelines at every 200m, except where they follow permanent roads
7. Fire hydrants are indicated FH



COAST WATER WORKS DEVELOPMENT AGENCY
 Chief Executive Officer
 Technical Services Manager

ENR. JAMES SERRAL
 Registered Engineer No. 10000

Job No.	2201	Job Title	SUPPLY OF WATER TO NIGOMENI FISH LANDING SITE
Drawing No.	FLS-WH-01	Work Item	ELEVATED WATER TANKS TOWER
Scale	1:100	Date	January 2022
Designed By	Eng. Mwalid	Checked By	Eng. Mwalid
Drawn By	Eng. Mwalid	Approved By	