

BILL OF QUANTITIES

**PROPOSED REHABILITATION OF
AHERO DRAINAGE SYSTEM**

**Implementation by:
County Government of Kisumu**

**Funded by:
SKL International – Symbiocity Kenya**

Consultant:

Item	Description	Qty	Unit	Rate KSHS	Amount KSHS
1A.8	Allow lump sum for supplying temporary electricity for the Works and facilities of the Contractor, Employer's Representative and contractor's staff including connection, distribution system for the work, internal arrangements and all payment to the authorities for connections. It is the responsibility of the Contractor to ensure steady and uninterrupted power supply to Works. The Contractor shall not be entitled to claim and the Employer shall not pay cost incurred by the Contractor for using electric power generators or for using other alternative power supply method in case there happened to be disruptions to normal power supply due to any reason.	1.00	Item		-
1A.9	Allow lump sum for supply of water for the works including drinking water, and paying all charges and other expenses in connection with the supply from water mains or any other alternative method of water supply, storage and distribution. It is the sole responsibility of the contractor to ensure steady, uninterrupted adequate supply of water required for main contract and nominated sub contract work. The Contractor shall not be entitled to claim and the Employer shall not pay cost incurred by the Contractor for any arrangements for alternative water supply method in case there happens to be disturbance to normal water supply due to any reason.	1.00	Item		-
1A.10	Allow lump sum for providing safety, health and security (including watcher arrangement) for the Works and material as per the requirement laid under the Contract, including security lighting, lockable or open material storage areas, engaging security guards and / or any other measures as necessary.	1.00	Item		-
1A.11	Allow lump sum for providing Personal protective equipment for all the works and contractors' staff such as helmets, gloves, safety masks, dusk masks, eye goggles, boots etc. for the workmen. Submit a plan about attend of Personal protective (The payment will release based on the submission of break down expenditures & follow of instruction from RE for this work)	1.00	Item		-
Page Total Carried to Collection				KSHS	-

BILL OF QUANTITY 02 (EXISTING DRAINAGE – WORKS)

(BETWEEN CH 0+000 TO 0+350)

Item	Description	Qty	Unit	Rate KSHS	Amount KSHS
2B	DEMOLITION, EXCAVATION AND EARTHWORK All Provisional				
	Rate shall include, (a) for Grubbing up roots, Disposal of materials away from site and filling voids with good quality gravel to the approval of the Engineer.	1	ITEM		
	(b) Leveling and grading bottom of excavation and keep excavation clean and dry condition free from water.	1	ITEM		
	(c) Any necessary excavation in rock if encounter while the progress if the contractor is expected.	1	ITEM		
	(d) Any necessary additional excavation for working space such as for planking and form work etc.	1	ITEM		
	(e) Backfilling and consolidating with suitable excavated material.	1	ITEM		
2B.1	Demolition of existing drainage Disposing the concrete and debris away from the site as directed by Employer's Representative rate including loading & transporting with in 2km length dump area.	40.00	m ³		
2B.2	Removal of existing access culverts at CH 0+062 and 0+350	2.00	Item		
2B.3	Excavation of trenches in all classes of soil, for Concrete drain Type - A, B, C & D as shown in the drawings, depth not exceeding 1500mm below stripped level and Rate to include for below stripped preparing & leveling, watering & well ramming the base, earth work support, existing permanent structure support, existing service structure support, dewatering for excavation depths, temporary storage the excavated materials which is required to refilling, removal of all unacceptable materials and unused temporary storage excavated materials off from site and dump at A location, as directed by Employer's Representative:(Provisional Quantity)	290.00	m ³		
	Excavation Ancillaries				
2B.4	Back filling to excavations & structures using excavated materials including filling, spreading, watering and well ramming or compacting in layers not exceeding 150mm including narrow places as directed by the Employer's Representative. (Provisional Quantity)	234.00	m ³		
2B.5	Back filling to excavations & structures using selected Class I filling material , including supply of fill material, filling, spreading, watering and well ramming or compacting in layers not exceeding 150mm as directed by the Employer's Representative. (Provisional Quantity)	82.00	m ³		
	Total Carried to Summary				

Item	Description	Qty	Unit	Rate KSHS	Amount KSHS
2C	CONCRETE WORKS				
	Unless otherwise stated all concrete work shall be as follows. The rates shall include for :-				
	(a) Grade / Ratio as specified		Item		
	(b) All concrete shall be made dense with a vibrator.		Item		
	(c) All concrete shall be casted to receive only that finishing on the exposed surface as required.		Item		
	(d) Unless otherwise specified in the respective items, all formwork, and reinforcement measured separately.		Item		
	(e) Plant for mixing, handling, hoisting, depositing, curing, vibrating and making good after removal of form work.		Item		
	(f) The site usable Cement shall be grinded & packed at Bamburi or its equivalent		Item		
	(G) The quality assurance should be confirmed by employee every 20m3 for site mix and every truck for ready mix		Item		
	Grade 15 concrete				
2C.1	50mm thick Screed concrete under Drainages & Culvert Bases with a layer of 1000 Gauge polythene sheet in bottom and sides to avoid contact with earth. (Rate shall be included for 1000G Polythene)	18.80	m ³		
2C.2	75mm thick In Walls of Drain types	43.25	m ³		
	Grade 25 concrete				
2C.3	In BRC reinforced Bases of Drain types & Culverts (Cross and Access),100mm	14.5.00	m ³		
2C.4	In reinforced Wingwalls, Headwalls and culvert surround (balloon type)	18.00	m ³		
2C.5	In Insitu Cover slab of Drain types	21.00	m ³		
	Formwork to basic finish as per General Specification.				
	(a) Rate shall include all necessary boarding, supporting, erecting, framing, cutting angles, skirting or removal, cleaning, wetting treating before placing concrete.		Item		
	(b) Formwork is measured as the net contact surface measurement between concrete and formwork		Item		
	(c) Marine board, wrought or other type of shuttering to produced fair faced concrete finish.		Item		
2C.6	Form work for Base & Walls of Drain types				
	Reinforcement in Insitu Concrete				
	Supply and fix necessary reinforcement as per structural dwg. or as per written instructions. Rate shall include for supply, cleaning, cut, bend, fabricate, spacers, chairs place in position, tie with necessary binding wire and wastage etc.		Item		
2C.6	High yield Deformed steel bar reinforcement at Drain types & silt trap to BS 4449 and characteristic strength (Fy=500 N/mm2) including bends, tying wire, distance blocks and ordinary spacers.	1.80	Ton		
	Total Carried to Summary				
2E	WEEPING HOLES ARRANGMENT				
	(a) Rate shall include all necessary length of the PVC pipe varies depend on the type of Drain.				
2E.1	Providing 63mm dia. PVC pipe weeping holes in every 3m intervals at both side of the concrete Drain types walls with the height of 600mm from finish sill level of the drain and complete with well graded filter media packing in the inlet area (150 X150X150 mm dimension with size 75mm rubble packing).	148.00	Nos		
2E.2	Providing 110mm dia. PVC pipe in necessary places where we need to collect external water to Drain types . Follow the site condition & Employer's Representative Instruction (R.E)	60.00	Nos		

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		Total Carried to Summary			
2G	PRECAST ARRANGMENT				
	The precast items must get good, fair & leveled surface				
2G.1	Fabricating & placing of precast cover slabs (as per Drawing) at Drain - 1 in position as per the detail	60.00	Nos		
2G.2	Fabricating & placing of precast cover slabs (as per Drawing) at Drain - 2 in position as per the detail	120.00	Nos		
2G.3	Fabricating, placing (every 1m c/c) and white washing as guard stone (as per Drawing) along the road side of the drain types in open areas.	80.00	Nos		
		Total Carried to Summary			

2H	GALVANIZED M S SCREEM ARRANGMENT TO SILT TRAP - S				
2H.1	Supplying & fixing of Galvanized MS screen to silt trap - II as per drawing.	1.35	m ²		

2B	DEMOLITION, EXCAVATION AND EARTHWORK				
2C	CONCRETE WORKS				
2E	WEEPING HOLES ARRANGMENT				
2G	PRECAST ARRANGEMENT				
2H	GALVANIZED M S SCREEM ARRANGMENT TO SILT TRAP - S				
	Total to Summary				

BILL OF QUANTITY - 03

MAIN DRAIN - B CHAINAGE 0+000 to 0+200 FOR CATCHMENT AREA

Item	Description	Qty	Unit	Rate KSHS	Amount KSHS
3B	DEMOLITION, EXCAVATION AND EARTHWORK				
	Rate shall include, (a) for Removal of existing precast slab channel, Disposal of materials away from site and filling voids with good quality gravel to the approval of the Engineer.		Item		
	(b) Leveling and grading bottom of excavation and keep excavation clean and dry condition free from water.		Item		
	(c) Any necessary excavation in rock if encounter while the progress if the contractor is expected.		Item		
	(d) Any necessary additional excavation for working space such as for planking and form work etc.		Item		
	(e) Backfilling and consolidating with suitable excavated material.		Item		
3B.1	Item for Demolition and removal of existing culverts which are used to access the shops & bye roads and existing pipe culvert, and disposed at County Govt. dumping area as directed by Employer's Representative.	1.00	Item		
3B.2	Excavation of trenches using machinery in all classes of soil with up routing the routes other than a hard stratum which requires drilling and blasting for Concrete drain base depth not exceeding 1500mm below stripped level and Rate to include for below stripped preparing & leveling, watering & well ramming the base, earth work support, existing permanent structure support, existing service structure support, dewatering for excavation depths, temporary storage the excavated materials which is required to refilling, removal of all unacceptable materials and unused temporary storage excavated materials off from site and dump at urban yard as directed by Employer's Representative:(Provisional Quantity)	390.00	m ³		
	Excavation Ancillaries				
3B.3	Back filling to excavations & structures using excavated materials including filling, spreading, watering and well ramming or compacting in layers not exceeding 150mm including narrow places as directed by the Employer's Representative. (Provisional Quantity)	100.00	m ³		
3B.4	Back filling to excavations & structures using selected Class I filling material , including supply of fill material, filling, spreading, watering and well ramming or compacting in layers not exceeding 150mm as directed by the Employer's Representative. (Provisional Quantity)	300.00	m ³		
3B.5	Allow for repair, replace & alternation for damage services (will only be considered if physically carried out at the site) (etc. water supply line- Kwasco, telecom line-cable or sewerage line etc.)	1.00	Item		
3B.6	Allow for provide temporary Access to shops & bye roads as directed by Employer's Representative	1.00	Item		
	Total Carried to Summary				

Item	Description	Qty	Unit	Rate KSHS	Amount KSHS
3C	CONCRETE WORKS				
	Unless otherwise stated all concrete work shall be as follows. The rates shall include for :-		Item		
	(a) Grade / Ratio as specified		Item		
	(b) All concrete shall be made dense with a vibrator.		Item		
	(c) All concrete shall be casted to receive only that finishing on the exposed surface as required.		Item		
	(d) Unless otherwise specified in the respective items, all formwork, and reinforcement measured separately.		Item		
	(e) Plant for mixing, handling, hoisting, depositing, curing, vibrating and making good after removal of form work.		Item		
	(f) The site usable Cement shall be grinded & packed at Bamburi or its Equivalent		Item		
	(G) The quality assurance should be confirmed by employee every 20m3 for site mix and every truck for ready mix		Item		
	Grade 15 concrete				
3C.1	50mm thick. screed concrete under Drainage with a layer of 1000 Gauge polythene sheet in bottom and sides to avoid contact with earth. (Rate shall be included for 1000G Polythene)	21.00	m ²		
	75mm thick In Walls of Drain types	54.0	m ³		
	Grade 25 concrete				
3C.2	In Bases of Drain type	20.00	m ³		
3C.3	In Walls of Drain type	8.50	m ³		
3C.4	In Cover slab of Drain types	14.80	m ³		
	Formwork to basic finish as per General Specification.				
	(a) Rate shall include all necessary boarding, supporting, erecting, framing, cutting angles, skirting or removal, cleaning, wetting treating before placing concrete.		Item		
	(b) Formwork is measured as the net contact surface measurement between concrete and formwork		Item		
	(c) Plywood, wrought or other type of shutting to produced fair faced concrete finish.				
3C.5	Form work for Base & Walls of Drain types	1.0	Item		
	Reinforcement in Insitu Concrete				
	Supply and fix necessary reinforcement as per structural dwg. or as per written instructions. Rate shall include for supply, cleaning, cut, bend, fabricate, spacers, chairs place in position, tie with necessary binding wire and wastage etc.	1.0	Item		
3C.6	High yield Deformed steel bar reinforcement at Drain type to BS 4449 and characteristic strength (Fy=500 N/mm2) including bends, tying wire, distance blocks and ordinary spacers.	0.90	Ton		
	Total Carried to Summary				
3E	WEEPING HOLES ARRANGMENT				
	(a) Rate shall include all necessary length of the PVC pipe varies depend on the type of Drain.				
3E.1	Providing 63mm dia. PVC pipe weeping holes in every 3m intervals at both side of the concrete Drain types walls with the height of 600mm from finish sill level of the drain and complete with well graded filter media packing in the inlet area (150 X150X150 mm dimension with size 75mm rubble packing).	116.00	Nos		
3E.2	Providing 110mm dia. PVC pipe in necessary places where we need to collect Storm & Rainfall runoff water to Drain type - III & Va. Follow the site condition & Employer's Representative Instruction.	40.00	Nos		
	Total Carried to Summary				

Total Carried to grand Summary

3B	DEMOLITION, EXCAVATION AND EARTHWORK				
3C	CONCRETE WORKS				
3E	WEEPING HOLES ARRANGMENT				
	Total				

SUMMARY - GENERAL PROVISIONS: DAY WORK

	Description	Amount (KSHS)
J	GENERAL PROVISIONS: DAY WORK	
J1	Day Work Labour	
J2	Day Work Material	
J3	Day Work Plant and Equipment	

Total Carried to Summary

BILLS OF QUANTITIES - 06
Bill No 06 - Day Work

Item	Description	Qty	Unit	Rate (KSHS)	Amount (KSHS)
6J	GENERAL PROVISIONS: DAY WORK				
	Generally, The Contractor shall be paid for any part of the Works carried out on the day work basis in accordance with the Contract at the rates and percentages set down in and subject to the provisions of this Day work Schedule.	Item			
	Time engaged in the actual works only will be allowed. Idle time will not be allowed.	Item			
	All rates in this Day work Schedule shall be fixed for the duration of the Contract	Item			
	Any other labour / material plant and equipment category employed but not included below shall be priced at rates analogous to those rates included under the relevant categories.	Item			
	Only a nominal quantity is inserted against each item for computation purposes only.	Item			
6J1	Labour				
	The following labour rates are to be applied for the days worked and are to be all inclusive	Item			
	A day shall mean an 8 hour day.	Item			
	The said rates are to be based on the rates of wages and other emoluments and expenses, including holiday credits (if any), and insurances, payable by the Contractor.	Item			
	The said rates are to include, inter alia, for all supervision, importation of labour including transport, travelling time, fares, subsistence and lodging allowances, operation of incentive schemes and costs of overtime working, guaranteed time, sick pay and any other disbursements arising from the employment of labour, for the use and repair of all non-mechanical tools (including paint brushes), sharpening of tools and use of standing scaffolding and other Contractor's Equipment and for overheads and profit of the Contractor.	Item			
	The Tendered shall state the rates required for labour per day irrespective of public holidays, week-ends, etc., required for work ordered to be executed as Day works or Extra Work.	Item			
	Gangers and trade charge hands when working with their gangs shall be paid for at the below rates for Laboure's and the applicable craftsmen respectively	Item			
	* Please use a separate sheet if necessary.				
6J1.1	Operator, Light equipment	16.00	Hr		-
6J1.2	Unskilled Workman	110.00	Hr		-
6J1.3	Semiskilled Workman	50.00	Hr		-
6J1.4	Mason	20.00	Hr		-
6J1.5	Carpenter and Joiner	25.00	Hr		-
6J1.6	Welder	5.00	Hr		-
6J1.7	Plumber	10.00	Hr		-
6J1.8	Bar bender	25.00	Hr		-
6J1.9	Driller (Rock drilling)	0.00	Hr		-
6J1.10	Rock Blaster	0.00	Hr		-
6J1.11	Sanitary Labour	15.00	Hr		-
	<i>(Add any other categories) *</i>				
6J1	Total of Labour		Day Work Summary	KSHS	-

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Item	Description	Qty	Unit	Rate (KSHS)	Amount (KSHS)
6J2	Materials The rates for the below listed materials are to be used for Day Work or Extra Work at the site of the works. The rates shall cover all the expenses such as loading, delivery to site, unloading, storing and protecting, profit and overheads less all trade discounts, rebates and allowances and all cash discounts. Above rates and amount are inclusive of the contractor's profit and overheads. * Please use a separate sheet if necessary.	Note			
6J2.1	20mm to 5mm graded aggregate	7.00	m ³		-
6J2.2	Aggregate, 37.5 mm	5.00	m ³		-
6J2.3	Ordinary Portland cement, 50 kg	20.00	bag		-
6J2.4	Formwork, timber (rough)	20.00	m ²		-
6J2.5	River sand	8.00	m ³		-
6J2.6	Find sand	8.00	m ³		-
6J2.7	Tor steel (all sizes)	10.00	kg		-
	<i>(Add any other categories) *</i>				
6J2	Total of Materials carried to the Day Work Summary			KSHS	-
6J3	Plant and Equipment The following rates for plant and equipment are to be applied to the days worked and use of such plant/equipment in good working condition. The rates are to include all operational and maintenance costs, fuel, oil, grease, transport to and from site and other consumables, operator and attendants' wages, supervision, overheads and profit. Only for the time which the plant / equipment was been actually employed upon the work shall be paid for and the rates shall include for idle time, travelling time and overtime. Above rates and amount are inclusive of the contractor's profit and overheads. All items of plant and equipment shall be priced consider with fuels. * Please use a separate sheet if necessary.	Item			
6J3.1	Water browser, 6,000 Ltr with Tp type outlet	15.00	Hr		-
6J3.2	Farm Tractor, with trailer minimum 3 tone	0.00	Hr		-
6J3.3	Hand roller, vibrator, 1/2-1 tone	10.00	Hr		-
6J3.4	Plate compactor, vibratory, over 90 kg	20.00	Hr		-
6J3.5	Rammer, mechanical, over 90 kg	30.00	Hr		-
6J3.6	Air Compressor with hose, 100mm outlet	4.00	Hr		-
6J3.7	Generator, 5 KVA	10.00	Hr		-
6J3.8	3" submersible pump with Electricity & 100m outlet hose	4.00	Hr		-
6J3.9	Wet S100 Excavator	5.00	Hr		-
6J3.10	Wet Concrete breakers	4.00	Hr		-
6J3.11	Wet Angler grinder	4.00	Hr		-
	<i>(Add any other categories) *</i>				
6J3	Total of Plant and Machinery carried to the Day Work Summary			KSHS	-

Total in Kenya Shillings, 4,155,175/= (For **the Market Area**)

Preliminary and Day Works Exclusive

Ahero Drainage Works – Kisumu County

Name:

Address: