



KENYA URBAN ROADS AUTHORITY

Efficient and safe urban roads

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P.O. Box 41727-00100, GPO, NAIROBI

Ref. No. KURA/EO/SCM/3/Vol.29 (78)

Date: 13th October, 2021

To All Bidders,

RE: 1. UPGRADING TO BITUMEN STANDARD OF BANISA TOWNSHIP ROADS

TENDER NO. KURA/DEV/HQ/256/2021-2022

2. CONSTRUCTION OF BUTE TOWNSHIP ROADS

TENDER NO. KURA/DEV/HQ/255/2021-2022

3. CONSTRUCTION OF ELDAS TOWNSHIP ROADS

TENDER NO. KURA/DEV/HQ/257/2021-2022

4. CONSTRUCTION OF HABASWEIN TOWNSHIP ROADS

TENDER NO. KURA/DEV/HQ/258/2021-2022

5. UPGRADING TO BITUMEN STANDARDS OF MANDERA TOWNSHIP ROADS

TENDER NO. KURA/DEV/HQ/259/2021-2022

ADDENDUM NO.1.

This is to notify all bidders that an addendum has been issued for the above mentioned tenders. All bidders are required to take note of this addendum and incorporate it in their bid before tender submission.

S/No	Contract Name.	Tender No.	Addendum No.2
1.	Upgrading to Bitumen Standards of Banisa Township Roads	KURA/DEV/HQ/256/2021-2022	- Replace page 131 with the indicated page in Appendix I - Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix II
2.	Construction of Bute Township Roads	KURA/DEV/HQ/255/2021-2022	- Replace page 128 with the indicated page in Appendix III - Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix IV
3.	Construction of Eldas Township Roads	KURA/DEV/HQ/257/2021-2022	- Replace page 144 with the indicated page in Appendix V - Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix VI

4.	Construction of Habaswein Township Roads	KURA/DEV/HQ/258 /2021-2022	• Replace page 144 with the indicated page in Appendix VII • Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix VIII
5.	Upgrading to Bitumen Standards of Mandera Town Roads Phase II	KURA/DEV/HQ/259 /2021-2022	• Replace page 133 with the indicated page in Appendix IX • Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix X

The submission date changes to 22nd October, 2021 and the tender opening date also changes to 25th October, 2021.

Details of the addendum can be accessed on www.kura.go.ke.


 Saadia Haji Adankhalif
FOR:DIRECTOR GENERAL

S/N o	Contract Name.	Tender No.	Addendum No.2
1	Upgrading to Bitumen Standards of Banisa Town Roads	KURA/DEV/HQ/256/2021-2022	• Replace page 131 with the indicated page in Appendix I • Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix II
2	Construction of Bute Township Roads	KURA/DEV/HQ/255/2021-2022	• Replace page 128 with the indicated page in Appendix III • Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix IV
3	Construction of Eldas Township Roads	KURA/DEV/HQ/257/2021-2022	• Replace page 144 with the indicated page in Appendix V • Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix VI
4	Construction of Habaswein Township Roads	KURA/DEV/HQ/258/2021-2022	• Replace page 144 with the indicated page in Appendix VII • Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix VIII
5	Upgrading to Bitumen Standards of Mandera Town Roads Phase II	KURA/DEV/HQ/259/2021-2022	• Replace page 133 with the indicated page in Appendix IX • Replace the entire Bills of Quantities with the indicated Bills of Quantities in Appendix X

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CONSTRUCTION OF BUTE TOWNSHIP ROADS
KURA/DEV/HQ/255/2021-2022-ADDENDUM NO.01

Appendix III

CONSTRUCTION OF BUTE TOWNSHIP ROADS
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The existing alignments comprises of gravel/earth road and is approximately 7.2 Km long.
The site of the works shall be within the road reserve and any other places as may be designated in the Construction Contract.

102 Extent of Contract

The major works to be executed under the Contract comprise mainly of but are not limited to the following:

- (i) Provision of facilities to the supervising Engineers
- (ii) Site clearance and top soil removal
- (iii) Earthworks to formation level including pavement Construction as follows:
 - a) Construction of 450mm improved Sub-Grade as shown in the drawings or as instructed by the Engineer
 - b) Construction of 150mm Gravel Sub-Base on carriageway and shoulder
 - c) Construction of 150mm Cement improved Gravel Base carriageway and shoulders.
 - d) Provision of 50mm thick Asphalt Concrete Type 1 as wearing course on carriageway & shoulders
- (iv) Drainage and Protection Works
- (v) Road Furniture
- (vi) Identification and relocation of services
- (vii) **Other Ancillary Works**
 - Other works ancillary to the main works shall be as follows: -
 - Construction of guardrail barriers as directed by the Engineer
- (viii) Maintenance of passage of traffic through the works
- (ix) Any other activity not listed above but may be deemed necessary and instructed by the Engineer.

102.1 Projects Components

The works proposed in this Contract include but not limited to the following;

- 7.0-meter-wide carriageway, 0.5m shoulders (where applicable)
- 2 m wide footpaths where necessary with approved coloured concrete paving blocks;
- Lined drain on both side of the road where necessary;
- Road furniture and markings.
- Identification and relocation of services

103 Drawings

This clause shall be read as under:

The drawings provided for bidding purpose shall be as contained in the Bid documents. The Engineer may from time to time, in order to enable satisfactory completion of works, revise, amend, or supersede any of these drawings. It shall be the Contractor's responsibility to construct the works in conformity with the latest revision and amendment to the drawings provided that the Engineer has given the Contractor in writing such reasonable prior notices of intention to revise, amend, or supersede as the nature of the intended change required and relevant drawings have been issued to the Contractor.


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Appendix IV


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CONSTRUCTION OF BUTE TOWNSHIP ROADS
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BUTE TOWN ROADS					
Bill of Quantities					
Item No.	Description	Units	Quantity	Unit Rate(KSh)	Amount KSh
BILL 1	PRELIMINARY AND ADMINISTRATION OVERHEADS	Units	Quantity	Unit Rate(KSh)	Amount KSh
1.01	Provide and maintain the Engineer's office as per the specifications	Lump Sum	1.00		-
1.02	Provide and maintain furniture and equipment for the Engineer's office as specified for the Contract period and as detailed in Appendix to Bill Item № 1.02.	Lump Sum	1.00		
1.03	Provide Engineers's Laboratory structure , Laboratory equipment and reagents for use by the Engineer's Representative's and his staff for entire duration of the contract as detailed in Appendix to Bill № 1.03	Lump Sum	1.00		-
1.04	Allow a provisional sum of KShs. 1,000,000 for offsite Material Testing as directed by the Engineer	Prime Cost	1.00	1,000,000.00	1,000,000.00
1.05	Extra over item 1.04 for contractors' overheads and profits	%	1,000,000.00		-
1.06	Provide with driver and maintain One Type one (1) and Two (2) Type 2 vehicle, with 2.5 - 2.8 litre turbocharged 4-wheel drive vehicle or similar as per the Engineer's instructions and approval, fitted with air bags, mobile telephone hand free headset and a two way radio for the exclusive use of the Engineer inclusive of the first 4,000 km per vehicle month.	V. Month			
	a) Type 1		24.00		
	b) 2 No. Type 2		48.00		


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1.07	Extra Over on Item 1.06 inclusive of fuels, maintenance, lubricants and servicing for kilometrage over 4,000 km per vehicle month.	km	1,000.00		
1.08	Allow a Provisional Sum of KShs 4,500,000 for the Engineer's miscellaneous account to be spent in whole or part as instructed by the Engineer and to be reimbursed against receipts.	Prime Cost	1.00	4,500,000.00	4,500,000.00
1.09	Extra over item on item 1.08 for contractors' overheads and profits.	%	4,500,000.00		-
1.1	Provide, erect and maintain publicity signs as instructed by the Engineer.	Nº	2.00		
1.11	Allow provisional sum on 3,500,000.00 for Engineer's staff Overtime during the contract period.	Prime Cost	1.00	3,500,000.00	3,500,000.00
1.12	Include a percentage on Item 1.11 for the Contractor's Overheads and Profit	%	3,500,000.00		
1.13	Allow for attendance upon the Engineer by the following staff in accordance with Clause 137 of Special Specification and as detailed in Appendix to Bill Nº 1.13	Lump Sum	1.00		
1.14	Allow a Provisional Sum of KShs 500,000 for the Engineer's staff mobile phone airtime charges	Prov. Sum	1.00	500,000.00	500,000.00
1.15	Include a percentage on Item 1.14 for the Contractor's Overheads and Profit	%	500,000.00		
1.16	Provide and maintain survey equipment for the Engineer's office as specified for the Contract period and as detailed in Appendix to Bill Item Nº 1.16	Lump Sum	1.00		
1.17	Provide PC Sum of Kshs.4,000,000 to facilitate attendance of site meetings.	PC Sum	1.00	4,000,000.00	4,000,000.00
1.18	Include a percentage on Item 1.17 for the Contractor's Overheads and Profit	%	4,000,000.00		

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1.19	Allow for Engineer's staff Accomodation and Housing in accordance to clause 132.1 of Special Specifications.	Lump Sum	1.00		
	Total Carried Forward to Summary:				
BILL 4	SITE CLEARANCE	Units	Quantity	Unit Rate(Ksh)	Amount (KSh)
4.01	Clear site on road reserve including removal of trees,hedges, bushes, and other vegetation or deleterious organic material , grub up roots in accordance with the specifications	m2	21,600.00		
4.02	Remove upto 0.2m top soil including removal of all grass, transport to spoil and spread or stockpile for re-use as directed by the Engineer	m3	7,200.00		
4.03	Dismantling of structures on roadway including existing pipe culverts of any size, headwalls, wingwall, apron, fences, pipes and guardrails including sorting out the dismantled material, disposal of unserviceable material complete with leads and lifts as instructed by the Engineer and utilizing the serviceable material free of cost in permanent works.	m	1,000.00		
4.04	Provide a provisional sum of KShs 2,000,000 for relocation of services.	Prov. Sum	1.00	2,000,000.00	2,000,000.00
4.05	Include a percentage on Item 4.04 for the Contractor's Overheads and Profit	%	2,000,000.00		
	Total Carried Forward to Summary:				
BILL 5	EARTHWORKS	Units	Quantity	Unit Rate(Ksh)	Amount KSh
	No separate payments shall be made for the overhaul of the material and the cost of such haulage shall be included in the rates and or prices.				
5.01	Cut to spoil in soft material as directed by the Engineer including excavation in swamps.	M ³	51,840.00		-
5.02	As Item 5.01 but in hard material	m3	5,000.00		-


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5.04	Provide, spread, water, process and compact 450 mm improved subgrade to 100% MDD (AASHTO T99) in three layers of 150 mm thickness.	m3	21,669.12		-
5.05	Fill in soft material to 95% MDD (AASHTO T99) in layers of 150mm each in accordance with Cl. 502, 504, 505, 508, 511, 512, & 513 of the specs.	m3	19,699.20		-
5.06	Provide and fill in hard material as per standard specifications.	m3	2,500.00		-
5.07	Rock fill as directed by the Engineer	m3	1,000.00		-
5.08	Grade and Compact existing ground to at least 100% MDD to a depth of 150mm below ground level.	m3	13,651.20		-
	Total Carried Forward to Summary:				-
BILL No 7:	Excavation and filling for structures	Units	Quantity	Unit Rate(Ksh)	Amount KSh
	No separate payment shall be made for the haulage of surplus or unsuitable excavated material and the cost of such haulage shall be included in the rates and/or prices				
7.01	Excavation in soft material for bridge	m3	7,480.00		-
7.02	River training in soft material as directed by the Engineer.	m3	220.00		-
7.03	Backfill to structures in soft material.	m3	3,740.00		-
7.04	As for item 7.01 but in hard material.	m3	1,100.00		-
7.05	Provide, place and compact rockfill below structures as directed by the Engineer.	m3	550.00		-
7.06	Provide and place porous fill material behind wingwalls and abutment.	m3	500.00		-
7.07	Provide and place gabion boxes (2x1x1m) where instructed by the Engineer.	m2	500.00		-
7.08	Provide and place rockfill to gabions	m3	100.00		-


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7.09	Provide and place filter fabric to abutment and wingwalls (As Terram 280 g/m2 or otherwise approved)	m2	90.00		-
	Total carried forward to summary				-
BILL 8	CULVERTS AND DRAINAGE WORKS	Units	Quantity	Unit Rate(Ksh)	Amount KSh
	No separate payments shall be made for the overhaul of the material and the cost of such haulage shall be included in the rates and or prices.				
8.01	Excavate in soft material to the range of depths stated below for pipe culverts, subsoil drains, headwalls, wing walls, aprons, toe walls, drop inlets, mitre drains, cut off drains, outfall to free flowing, catch water drains and median drains including support of trench sides, backfilling and compacting as specified or as instructed by the Engineer.	m3	17,280.00		-
8.02	As Item 8.01 but hard material (requiring no blasting)	m3	3,000.00		-
8.02	Provide, lay and joint 300mm or 450 mm I.D. Reinforced Cement Concrete pipes for Service ducts as per the drawings or as instructed by the Engineer	m	150.00		-
8.03	Provide, lay and joint 600 mm I.D. Reinforced Cement Concrete pipes including class 15/20 concrete haunching	m	700.00		-
8.04	Provide, lay and joint 900 mm Internal Diameter (I.D.) Reinforced Cement Concrete pipes class 15/20 concrete haunching	m	100.00		-
8.05	Provide, lay and joint 1200 mm I.D. Reinforced Cement Concrete pipes	m	70.00		-
8.06	Provide and place A142 fabric mesh reinforcement or equivalent for item 8.07, wing walls, toe walls and headwalls	m2	1,265.33		-


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8.07	Provide, place and compact class 15/20 for bedding	m3	877.20		
8.08	Provide and place Class 20/20 concrete for side walls, top slabs, trenches, drains, retaining walls, toe walls, head walls, rest crushed sand including formwork and wing walls and aprons, 20% natural and provision and placing of reinforcement as shown on the drawings or as instructed by the Engineer.	m3	480.00		
8.09	Provide and place class 25/20 concrete as directed by Engineer	M3	100.00		
8.1	Provide, lay and joint 450mm x 225mm Invert Block Drain (IBD) complete with 2 side slabs as per the specifications or as instructed by the Engineer.	m	15,000.00		
8.11	Extra over Item 8.10 for precast sideslab of 600x225 75mm	M2	7,200.00		
8.12	Provide stone pitching for lining for drains	m2	4,000.00		
	Total Carried Forward to Summary:				
BILL 9	PASSAGE OF TRAFFIC	Units	Quantity	Unit Rate(Ksh)	Amount KSh
9.01	Allow for the passage of traffic through the works	Lump Sum	1.00		
	Total Carried Forward to Summary:				
BILL 12	NATURAL MATERIAL BASES AND SUBBASES	Units	Quantity	Unit Rate(Ksh)	Amount KSh
12.01	Provide, spread, water, process and compact natural gravel for carriageway sub base and footpath subbase and base material as directed by the Engineer.	M³	13,392.00		
12.02	Provide, lay and compact natural gravel material for base layer and as directed by the Engineer. subbase.	M³	7,560.00		
	Total Carried Forward to Summary:				


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BILL 14	CEMENT AND LIME TREATED SUBBASE AND BASES	Units	Quantity	Unit Rate(Ksh)	Amount KSh
14.01	Provide transport and spread cement for base and sub base as directed by the Engineer	Ton	533.43		
14.02	Mix the sub base and base material with the instructed cement quantity, use a pulvimixer, grade with a motor grader and compact with a road roller at OMC to achieve the desired unconfined compressive strength and to form a layer of base as specified or as instructed by the Engineer.	m3	9,072.00		
14.03	Allow for curing and protection of treated sub-base as specified or as instructed by the Engineer.	m2	60,480.00		
	Total Carried Forward to Summary:				
BILL 15	BITUMINOUS SURFACE TREATMENT	Units	Quantity	Unit Rate(Ksh)	Amount KSh
15.01	Clean and prepare surfaces of main carriageway, slip roads, shoulders, bus bays, accesses and junctions, provide, heat and spray on the same MC 30 cutback bitumen prime coat at a rate of spray in the range of 1.0 litre/m ² to 1.2 litres/m ² or as instructed by the Engineer	L	72,576.00		
15.02	Clean and prepare surfaces of main carriageway, slip roads, shoulders, bus bays, accesses and junctions, provide, heat and spray K1 – 60 as a tack coat at a rate of spray in the range of 0.5 litre/m ² to 0.8 litres/m ² or as instructed by the Engineer	L	48,384.00		
	Total Carried Forward to Summary:				
BILL 16	BITUMINOUS MIXES	Units	Quantity	Unit Rate(Ksh)	Amount KSh


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16.01	Prepare surfaces, provide, mix, lay and compact Asphaltic Concrete (AC) (Type 1) as binder course on base with bitumen and 0/20 mm aggregates on prepared surface of asphalt base layer	M ³	3,024.00		-
	Total Carried Forward to Summary:				-
BILL No 17:	Concrete works (major structures)	Units	Quantity	Unit Rate(Ksh)	Amount KSh
	Note: No haulage will be paid for material this should be included in the rates billed rates.				
17.01	Provide, place and compact concrete class 15/20 for blinding	M3	200.00		-
17.02	Provide, place and compact concrete class 25/20	M3	1,080.00		-
17.03	Vertical format class F2 finish	M2	500.00		-
17.04	Horizontal format class F2 finish	M2	100.00		-
17.05	Provide, cut, bend and fix steel reinforcement of diameter greater than 16mm	Ton	180.00		-
17.06	Provide, cut, bend and fix steel reinforcement of diameter less than or equal to 16mm	Ton	65.00		-
	Total carried forward to summary				-
BILL 20	ROAD FURNITURE REPAIR AND MAINTENANCE	Units	Quantity	Unit Rate(Ksh)	Amount KSh

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20.01	Provide and lay hot applied thermoplastic road marking compound in approved colour and shade (ASTM 9) for road marking on bituminous surface on centerline, 100 mm, edge line 150 mm wide 3.0 mm thick, using fully automatic extrusion machine and using pre-melter for melting thermoplastic material including cleaning the surface of all dirt, dust, and other foreign matter, complete with demarcation at site/pre-marking, finishing and managing the traffic movements. Marking to be done as per the specifications, detailed drawings and as instructed by the Engineer.	M2			
	(i) For edge / centre lines marking with white paint, 100 mm wide	M2	432.00		-
	(ii) For centre lines with yellow paint, 100 mm wide	M2	1,728.00		-
20.02	Supply and fix regulatory/mandatory road sign boards made up with high intensity grade retro-reflective type sheeting (ASTM 9) complete as per the drawings and Technical specifications.	N _o	10.00		-
20.03	Supply and fix cautionary/warning road sign boards made up with high intensity grade retro-reflective type sheeting (ASTM 9) complete as per the drawings and Technical Specifications	N _o	10.00		-
20.04	Supply and fix informatory road sign boards made up with high intensity grade retro-reflective type sheeting complete as per drawing and Technical specifications.				-
	(i) Area less than 1.0 m2	N _o	10.00		-
	(ii) Area more than 1.0 m2 but less than 2 m2	N _o	10.00		-


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20.05	Excavate for, provide and place 250x125mm class 25/20 precast concrete straight raised kerbs haunched in 100mm thick class 15/20 concrete base bedding and mortar joined in support to carriageaways, bus bays and junctions as directed by the Engineer	M	7,200.00		-
20.06	Excavate for, provide, lay and joint 100mm x 125mm wide precast concrete channels to radius greater than 12m and laid on 100mm thick concrete class 15/20 bed and haunch as specified	M	50,400.00		-
20.07	Provide and install reflective cat eyes as directed by the Engineer	No.	375		-
	Total Carried Forward to Summary:				-
BILL № 21:	Miscellaneous bridge works.	Units	Quantity	Unit Rate(Ksh)	Amount KSh
21.01	Provide and apply bituminous waterproof to abutments and wingwalls in two layers at a rate of 0.55L/m ² as shown in the drawings or as directed by the Engineer.	m ²	400.00		-
21.02	Provide and place as directed by the Engineer P.V.C. pipes of diameter 50mm to form weep holes in abutment and wingwalls.	m	160.00		-
21.03	Provide and place handrails to bridge deck including steel post, anchors and welding as directed by the Engineer.	M	240.00		-
	Total carried forward to summary				-
BILL 22	BILL № 22: Day Works	Units	Quantity	Unit Rate(Ksh)	Amount KSh


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Note:	Any plant employed upon Day works which have power rating lower than that specified, shall be paid for at rates lower than those in the Schedule of Day works. The reduction in the payable rate shall be in proportion to the power rating below that specified.				
22.01	Crawler Dozer with Hydraulic Ripper				
	(a) 100-135 Kw rated flywheel power	hr	10.00		-
	(b) 136-185 Kw rated flywheel power	hr	5.00		-
	(c) 186-250 Kw rated flywheel power	hr	5.00		-
22.02	Motorized rubber tyred single engine scrapers				-
	(a) Up to 16m3 heaped capacity	hr	5.00		-
	(b) 17-26 m3 heaped capacity	hr	5.00		-
22.03	Motorized rubber tyred twin engine scrapers				-
	(a) Up to 16 m3 heaped capacity	hr	5.00		-
	(b) 17-26 m3 heaped capacity	hr	5.00		-
22.04	Motor Graders with Hydraulic Ripper or Scarifier				-
	(a) 80-110 Kw rated flywheel power	hr	5.00		-
	(b) 111-120 Kw rated flywheel power	hr	8.00		-
	(c) 121-160 Kw rated flywheel power	hr	5.00		-
22.05	Tracked Excavator Cranes				-
	(a) 20-28t max working load	hr	5.00		-
	(b) 28.1-36.1t max working load	hr	5.00		-
	(c) 36.1-56t max working load	hr	5.00		-
					-
22.06	Excavators hydraulic wheeled dual purpose				-
	(a) 0.6-0.8m3 rated bucket	hr			


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	capacity		5.00		-
	(b) 0.81-1.0m ³ rated bucket capacity	hr	8.00		-
22.07	Wheeled loaders 4X4 articulated				-
	(a) 1.5-2.0 m ³ SAE rated capacity	hr	5.00		-
	(b) 2.01-3m ³ SAE rated capacity	hr	5.00		-
	(c) 3-5 m ³ SAE rated capacity	hr	5.00		-
22.08	Crawler Loaders with Hydraulic Ripper				-
	(a) 0.8-1.3m ³ SAE rated capacity	hr	5.00		-
	(b) 1.31-1.99 m ³ SAE rated capacity	hr	5.00		-
	(c) 2-2.5 m ³ SAE rated capacity	hr	5.00		-
22.09	Rollers Towed vibratory including tractor				-
	(a) 6.5-8.8 t un-ballasted weight	hr	5.00		-
	(b) 8.6-11.7 t un-ballasted weight	hr	5.00		-
22.1	Road Roller deadweight (Steel Three Wheel)				-
	(a) 6.5 -8.8 t un-ballasted weight	hr	5.00		-
	(b) 8.6-11.7 t un-ballasted weight	hr	5.00		-
22.11	Roller rubber tyred self propelled				-
	(a) up to 1 t per wheel	hr	5.00		-
	(b) 1.1 t -2.0 t per wheel	hr	5.00		-
					-
					-
22.12	Roller Vibratory single roll Rubber tyred, 8.3-10.5 t un-ballasted weight	hr	8.00		-
22.13	Vibrating plate compactor 114-200 kg operating weight	hr	5.00		-
22.14	Compressor rated by normal delivery of free air per minute complete with all tools				-
	(a) 6.0-7.4 m ³ /min	hr	5.00		-
	(b) 7.5-9.7m ³ /min	hr	5.00		-


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	(c) 9.8-25.5m ³ /min	hr	5.00		~
22.15	Mobile rubber tyred rough terrain crane 23-40t max working load	hr	5.00		-
22.16	Small dumpers 751kg-1.2t max rated payload	hr	5.00		~
22.17	Pumps(Inclusive of all hoses				~
	(a) 50-76mm delivery	hr	5.00		~
	(b) 77-101mm delivery	hr	5.00		-
22.18	Rubber tyred tractors including trailer. 50-70kw rated flywheel power	hr	5.00		-
22.19	Concrete mixers (wet capacity)				~
	(a) up to 100 litres	hr	5.00		~
	(b) 101-200 litres	hr	5.00		-
	(c) 201-300 litres	hr	5.00		-
22.2	Transit Mixer 4.5 m ³ /hour	hr	5.00		-
22.21	Concrete pump of 45 and 30 m ³ capacity	hr	5.00		-
22.22	Concrete poker vibrator	hr	5.00		~
22.23	Concrete pump of 45 and 30 m ³ capacity	hr	5.00		-
22.24	Lorries - Flatbed				~
	(a) up to 7.5t gross vehicle weight	hr	5.00		-
	(b) 7.6-12.0t gross vehicle weight	hr	5.00		~
22.25	Lorries - Tippers				~
					~
					~
	(a) up to 11t gross vehicle weight	hr	5.00		-
	(b) 11-17t gross vehicle weight	hr	5.00		-
	(c) 17.1- 25t gross vehicle weight	hr	10.00		-
22.26	Van, Pickup or similar utility vehicle				-
	(a) up to 1 t carrying capacity	hr	5.00		~


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	(b) 1.1-2.6 t carrying capacity	hr	5.00		-
22.27	Self propelled water or fuel tanker				-
	(a) 3500-4550 litre capacity	hr	5.00		-
	(b) 4551-7000 litre capacity	hr	5.00		-
	(c) 7001-12000 litre capacity	hr	5.00		-
22.28	Bitumen pressure distributor				-
	(a) 3500-4550 litre capacity	hr	5.00		-
	(b) 4551-9000 litre capacity	hr	5.00		-
22.29	Hot mix plant - 60 tonnes per hour	hr	5.00		-
22.3	Wet mix plant - 60 tonnes per hour	hr	5.00		-
22.31	Hydrostatic paver & finisher with sensor control	hr	5.00		-
22.32	Batching and mixing plant 15-20 m ³ capacity	hr	5.00		-
22.33	Concrete paver finisher with 40 HP motor	hr	5.00		-
22.34	Chip spreader	hr	5.00		-
22.35	Mechanical broom	hr	5.00		-
					-
					-
22.36	Kerb making machine	hr	5.00		-
22.37	Road marking machine	hr	5.00		-
22.38	Electric generator				-
	(a) 100 KVA	hr	5.00		-
	(b) 125 KVA	hr	5.00		-
22.39	Crusher Plant	hr	5.00		-
22.4	Pulvimixer	hr	5.00		-
22.41	LABOUR				-
	(a) Unskilled Labour	hr	15.00		-
	(b) Skilled Labour	hr	5.00		-
	(c) Artisan	hr			-

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			5.00		-
	(d) Plant Operator	hr	15.00		-
	(e) Driver	hr	15.00		-
	(f) Foreman	hr	15.00		-
	(g) Office attendants and chainmen	hr	5.00		-
	(h) Blaster (Certified)	hr	5.00		-
	MATERIALS				-
	All items of materials must be priced to comply with the Specifications.				-
22.42	Ordinary Portland Cement	tonne	2.00		-
22.43	Hydrated Lime	tonne	2.00		-
22.44	Mild Steel				-
	(a) Up to and including 16 mm diameter	tonne	2.00		-
	(b) Over 16 mm diameter	tonne	2.00		-
22.45	High Yield Steel				-
	(a) Up to and including 16mm diameter	tonne	2.00		-
	(b) Over 16mm diameter	tonne	2.00		-
22.46	Aggregates for Concrete				-
	(a) Fine	m3	15.00		-
	(b) coarse	m3	15.00		-
22.47	Shuttering Timber				-
	(a) F1 finish	m2	10.00		-
					-
					-
	(b) F2 finish	m2	20.00		-
	(b) F3 finish	m3	15.00		-
22.48	Chippings				-
	(a) Class 3 any size	m3	5.00		-
	(b) fine aggregate	m3	5.00		-


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22.49	Cutback Bitumen and emulsion				-
	(a) 80/100 penetration grade bitumen	litre	15.00		-
	(b) MC 3000 cut-back bitumen	litre	15.00		-
	(c) MC 70 cut-back bitumen	litre	15.00		-
	(d) K-160 bitumen emulsion	litre	15.00		-
22.5	Gabion mesh, size 1.0 m x 1.0 m x1.0 m	m2	5.00		-
22.51	Stone for gabions	m3	5.00		-
22.52	Dynamite stick explosives	kg	5.00		-
22.53	Explosive fuse	m	5.00		-
22.54	Detonators	No	5.00		-
	BILL 22 TOTAL CARRIED TO SUMMARY PAGE				-
BILL 23	PAVING BLOCKS	Units	Quantity	Unit Rate(Ksh)	Amount KSh
23.01	Supply, lay and compact 50mm thick precast concrete paving blocks with 49N/mm2 cube crushing strength conforming to BS 6717 Part I of 1986 or KEBS equivalent standard	m2	28,800.00		-
23.02	Provide, spread, 50mm thick quarry dust for voids and as layer above gravel	M3	1,440.00		-
	BILL 23 TOTAL CARRIED TO SUMMARY PAGE				-
BILL 25	CROSS CUTTING ISSUES	Units	Quantity	Unit Rate(Ksh)	Amount KSh
25.01	Allow a Prime Cost sum of Kshs.2,00,000.00 for preparation of Environmental and social Reports.	PC Sum	1.00	200,000.00	200,000.00
25.02	E.O. item 25.01 for Contractor's overheads and profits.	% of item	200,000.00		-
25.03	Allow for prime cost of 2,000,000.00 for Disability mainstreamin, Environmental monitoring and provision of Environmental mitigation Measures as directed by the Engineer.	PC Sum	1.00	200,000.00	200,000.00


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25.04	E.O. Item 25.03 for Contractor's overheads and profits.	% of item	200,000.00		-
25.05	Allow for prime cost of Kshs. 1,000,000.00 landscaping and beautification including planting and maintaing of trees , shrubs, and grasses as directed by the Engineer.	PC Sum	1.00	1,000,000.00	1,000,000.00
25.06	E.O. Item 25.05 for Contractor's overheads and profits.	% of item	1,000,000.00		-
25.07	Allow for the engagement of a HIV/AIDS specialist subcontractor to deal with preventive and awareness activities as per programe to be approved by the Engineer.	Mont hs	30.00		-
25.08	Allow for preparation and submission of Monthly reports on HIV/AIDS awareness and prevention action activitiess.Reports to be tabled at site meetings.	Mont hs	30.00		-
	BILL 25 TOTAL CARRIED TO SUMMARY PAGE				

GRAND SUMMARY OF BILL, OF QUANTITIES

BILL ITEM	DESCRIPTION	AMOUNT(KShs)
1	Preliminary and General items	


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4	Site Clearance and Top Soil Stripping		
5	Earth Works		
7	Excavation and Filling of Structures		
8	Culverts and Drainage Works		
9	Passage to Traffic		
12	Natural Material fo Subbase and Base		
14	Cement or Lime Treatment for Base and Subbase		
15	Bituminous Surface Treatment and Surface Dressing		
16	Bituminous Mixes		
17	Concrete Works		
20	Road Furniture		
21	Miscellaneous bridge works.		
22	Schedule of Dayworks		
23	Paving blocks		
25	ENVIRONMENTAL MITIGATION MEASURES & HIV AIDS CAMPAIGN		
(A)	SUB-TOTAL (1)		
(B)	Add 4% VARIATION OF PRICE of sub-total (1)		
(C)	Add 2.5% CONTINGENCY of sub-total (1)		
(D)	SUB-TOTAL (2) = (A+B+C)		
(E)	Add ...16% VAT of sub-total (2)		-
GRAND TOTAL CARRIED FORWARD TO FORM OF BID AS BID SUM 1 (D+E)			-

APPENDIX A1.02 TO BILL ITEM 1.02: FURNITURE AND EQUIPMENT FOR R.E.'S OFFICE					
APPENDIX A1.02 TO BILL ITEM 1.02: FURNITURE AND EQUIPMENT FOR R.E.'S OFFICE					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	1. ENGINEER'S MAIN OFFICE AND FURNITURE				

Q.
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A1.02/1.01	Executive Desk	No	2		
A1.02/1.02	Desk with lockable drawer	No	4		
A1.02/1.03	Chairs executive (swivel type)	No	2		
A1.02/1.04	Lockable steel cabinets (with 4 drawers	No	8		
A1.02/1.05	Bookshelf 2 door with drawers & shelves 2m long	Set	1		
A1.02/1.06	Bookshelf 3 door with drawers & shelves 2m long	No	4		
A1.02/1.07	Stapling machine (Ofrex) and pins	No	4		
A1.02/1.08	Paper punch	No	3		
A1.02/1.09	3m tape measures	No	4		
A1.02/1.10	Scientific calculator (Fx 951MS or above)	No	1		
A1.02/1.11	Fully equipped first aid kit	No	1		
A1.02/1.12	Waste paper basket	No	2		
A1.02/1.13	Electric heater fans	No	2		
A1.02/1.14	Padlock	No	1		
A1.02/1.15	Wall clocks battery powered	No	1		
A1.02/1.16	Filing trays	No	1		
A1.02/1.17	Chairs (standard desk type)	No	1		
A1.02/1.18	Triplicate book	No	2		
A1.02/1.19	Diary	No	1		
A1.02/1.20	Inventory Book	No	1		
A1.02/1.21	Rulers	No	4		
A1.02/1.22	Hard cover note books (4quire)	No	4		
A1.02/1.23	Survey Books (Risc and Fall)	No	4		
A1.02/1.24	Field note books	No	4		
A1.02/1.25	Rims of Conqueror printing paper	No	4		
A1.02/1.26	A4 Envelops 50No. per packet	No	4		
A1.02/1.27	B5 Envelops 50No. per packet	No	4		
A1.02/1.28	B6 Envelops 50No. per packet	No	4		
A1.02/1.29	Payment voucher books	No	4		
A1.02/1.30	Engineer's pens(Uniball)0.7mm 10No.	No	4		
A1.02/1.31	Pens (Bic Ball points) 25 in a Pkt	No	4		
A1.02/1.32	Cellotape	No	4		
A1.02/1.33	Office glue stick	No	4		
A1.02/1.34	Dictionary	No	4		
A1.02/1.35	Photocopy / Printing papers (Reams)	No			


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			4		
A1.02/1.36	Masking tape	No	4		
A1.02/1.37	Highlighters (Dozens)	No	4		
A1.02/1.38	Spring files				
	Total carried to Bill Item 1.02				-

APPENDIX B1.03 TO BILL ITEM 1.03 FURNITURE, EQUIPMENT AND REAGENTS FOR THE ENGINEER'S LABORATORY

BILL ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2. General Equipment					
B1.03/2.03	Compaction mould complete with base plate and extension collar, 101.6 mm dia x 116.43 mm high	No	2		
B1.03/2.04	2.49kg. Compaction hammer, drop regulated to 304.8mm	No	1		
B1.03/2.05	4.535kg compaction hammer, drop regulated to 457.2mm	No	1		
B1.03/2.06	Electric vibrating Kango Hammer fitted with steel tamper (BS1377) with support frame	No	1		
B1.03/2.07	Straight edge 300 mm long with handles	No	2		
B1.03/2.08	Steel Tamper (BS1377) compatible with Kango hammer	No	2		
B1.03/2.09	Compaction mould 152.4 mm. dia x 116.43 mm complete with base plate and extension collar, 101.6 mm	No	2		
B1.03/2.10	Galvanized metal tray 1m x 0.5m x 75 mm deep	No	4		
B1.03/2.11	75mm brush	No	4		
B1.03/2.12	Semi-automatic balance, 25kg Capacity accurate to 1g, including weights	No	1		
B1.03/2.13	20mm BS Sieve, 300mm diameter	No	1		
B1.03/2.14	Stop Clock	No	2		
B1.03/2.15	Thermostatically controlled electric oven 105-1100C, capacity 0.225 m ³	No	1		
B1.03/2.17	Cone penetrometer with gauge and automatically controlled test cup	No	1		
3. Density (Sand replacement method BS 1377)					
B1.03/3.02	Stainless steel tray 305mm diameter	No	4		
B1.03/3.04	Metal tray with 200mm diameter hole in the centre, 500mm x 500mm square, 50 mm deep	No	1		
B1.03/3.05	Steel pegs for fixing tray in position	No	20		
B1.03/3.07	Sand pouring cylinder, 215 mm diameter	No	1		
B1.03/3.08	Cold steel chisel 20mm x 300mm	No	4		
B1.03/3.09	Cold steel chisel 10mm x 250mm	No	4		

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B1.03/3.10	1.5kg hammer	No	2		
B1.03/3.11	Scoop for removing excavated material from hole, 250 mm long handle	No	2		
B1.03/3.12	100mm brush, soft	No	3		
B1.03/3.13	50mm brush, soft	No	3		
B1.03/3.14	Primus gas stove	No	2		
B1.03/3.16	Ditto but 200 mm diameter x 250 mm deep	No	1		
4. Density (Nuclear Density method AASHTO T238)					
B1.03/4.05	CBR load frame (electric and hand operated)	No	1		
B1.03/4.06	Stabilising bar for the above	No	1		
B1.03/4.07	Proving ring for above, 10 kN and 28 kN capacity	set	1		
B1.03/4.08	Penetration gauge range 0 - 25mm	No	2		
B1.03/4.09	CBR piston including bracket	No	2		
B1.03/4.10	Swell measurement tripod complete with guage calibrated in 0.01mm divisions	No	3		
B1.03/4.11	CBR mould, 152.4 mm dia x 178 mm high, complete with perforated base plate and extension collar 50.8 mm high that can be fitted to either side of mould	No	25		
B1.03/4.13	Perforated swell plate 150 mm dia with an adjustable centre post of rust proof metal provided with a locknut	No	25		
B1.03/4.14	2.25 kg split surcharge weight	No	4		
B1.03/4.15	Set of annular surcharge weights	No	25		
B1.03/4.16	Solid base plate for CBR mould	No	2		
B1.03/4.17	Static compaction displacer discs 1 No x 61.4 mm, 1 No x 50.8mm and 2 No x 38.8 mm thick	set	1		
B1.03/4.18	Disc lifting handle	No	1		
B1.03/4.19	Central extruder, complete with 20kN hydraulic jack and accessories	No	1		
B1.03/4.22	Swell measurement tripod complete with guage calibrated in 0.01mm divisions	No	3		
6. Relative Density of Aggregates (BS 812)					
B1.03/6.01	Wire mesh basket with apertures not greater than 6.5 mm large enough to contain 2.5 kg of aggregate	No	2		
B1.03/6.02	A stout watertight container in which the basket can be freely suspended	No	2		
B1.03/6.03	Soft absorbent cloth (tea towel)	No	20		
B1.03/6.04	Shallow tray of area not less than 0.065 m ²	No	2		
B1.03/6.05	An airtight container of similar capacity to the basket	No	2		
B1.03/6.06	Pycnometer of 1 litre capacity	No	2		

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B1.03/6.07	Semi automatic 5 kg balance accurate to 0.1g to be of size and type to permit the basket containing the sample to be suspended in water(to be supplied with weights)	No	1		
B1.03/6.08	Hairdrier (electric)	No	1		
7. Flakiness (BS 812)					
B1.03/6.10	Thickness gauge (various sizes)	No	2		
8. Sieve Analysis (BS 1377)					
B1.03/6.12	BS Sieve 300mm diameter in sizes 75, 63, 50, 37.5, 28, 20, 14,10, 6.3, 5 and 4 mm, plus lid and receiver	Set	1		
B1.03/6.13	BS Sieve 200mm diameter in sizes 2, 1, 0.6, 0.5, 0.425,0.300,0.150 and 0.075 mm, plus lid and receiver	Set	1		
B1.03/6.15	BS sieve 200mm diameter 0.425 and 0.075 mm	set	1		
B1.03/6.16	1 m x 1 m x 75mm deep galvanized metal tray	No	5		
B1.03/6.17	Riffle box with 50mm slots (BS 1377)	No	1		
9. Miscellaneous Equipment					
B1.03/9.05	Metal scoop, large (150mm wide)	No	4		
B1.03/9.06	Metal scoop, medium (100mm wide)	No	4		
B1.03/9.07	Garden trowel	No	3		
B1.03/9.09	3.5 kg hammer	No	1		
B1.03/9.10	7kg hammer	No	1		
B1.03/9.11	Rubber mallet (1kg)	No	1		
B1.03/9.15	500mm x 500mm x 10mm plate glass (BS 1377)	No	2		
B1.03/9.26	BS Sieve brush	No	2		
B1.03/9.27	Measuring cylinder set, 25 ml, 100 ml, 500 ml, 1000 ml, 2000ml	set	2		
B1.03/9.36	Vernier calipers, 150mm	No	2		
B1.03/9.38	Pestle and mortar	No	2		
B1.03/9.39	Linear shrinkage mould (BS 1377)	No	6		
B1.03/9.40	Liquid Limit Device	No	1		
B1.03/9.45	Polythene wash bottle (500 ml)	No	4		
B1.03/9.48	Maximum and minimum thermometer (BS692)	No	1		
B1.03/9.49	Rain gauge	No	1		
11. Concrete: Slump and Cube Manufacture (BS 1881)					
B1.03/11.01	Slump cone, tamping rod and base	Set	1		
B1.03/11.02	Concrete cube mould, 150mm cube	No	1		
B1.03/11.03	Soaking tank for cubes (capacity 50 No.)	No	1		
B1.03/11.04	Cube tamping bars	No	1		
12. Concrete: Cube Compression Testing					

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B1.03/12.01	Concrete compression machine to BS1610 Grade A with 300mm gauge, rectangular platens, capacity 1560 kN with load spacer	No	1		
B1.03/12.02	Safety guard for above	No	1		
B1.03/12.03	50mm distance piece	No	1		
B1.03/12.04	70mm distance piece	No	1		
17. Consumables					
B1.03/17.04	Plastic bag 900x450x1000 gauge	No	250		
B1.03/17.05	Plastic bag 450x300x1000 gauge	No	250		
B1.03/17.06	Filter paper 150mm diameter Whatman No. 5 (Boxes of 100)	No	10		
B1.03/17.07	40 ft Container	No.	1		
	Total of Appendix B1.03 Carried to Bill No.1 item 1.03				-
	APPENDIX B1.13 TO BILL ITEM 1.13- attendance upon the Engineer by the following staff				
B1.14/1.0	Assistant Engineer	M.mth	24		
B1.14/1.1	Inspector of works	M.mth	36		
B1.14/1.2	Labaratory Technician	M.mth	36		
B1.14/1.3	Survey Assistant	M.mth	24		
B1.14/1.4	Labaratory Assistant	M.mth	36		
B1.14/1.5	Environmentalst/Socialogist	M.mth	24		
B1.14/1.6	Office Assistants	M.mth	24		
B1.14/1.7	Levellers	M.mth	24		
B1.14/1.8	Secretary	M.mth	24		
B1.14/1.9	General Attendants	M.mth	36		
B1.14/1.8	Secretary	M.mth	24		
B1.14/1.9	General Attendants	M.mth	24		
	Total of Appendix B1.13 Carried to Bill No.1 item 1.13				-

APPENDIX C1.16 TO BILL ITEM 1.16 - PROVIDE AND MAINTAIN SURVEY EQUIPMENT					
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
				(KSHS)	(KSHS)
C1.16/1.01	Engineer's digital Level machine with all its supporting accessories, that meets the requirements as indicated in the special specification	No	1		
C1.16/1.02	Digital Levelling staff 5m with levelling bubble (Leica/topcon or similar approved)	No	6		
C1.16/1.03	Scientific calculators [CasioFX 570 or equivalent]	No	3		


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C1.16/ 1.05	Trimble Geo 7X Handheld or equivalent Data Collector with a powerful 1GHz ARM Cortex A8 i.MX53, 8GB flash storage, IP65 rating, and sunlight-optimized display, with the integrated dual-mode cellular modem.	N o	2		
C1.16/ 1.06	Suunto 9 Multisport GPS Watch with BARO and Wrist-Based Heart Rate (Black) On long ultra runs, with unlimited battery life for recording distance and track accurately, as GPS is a heavy drain on the battery. Must be with a FusedTrack algorithm that combines GPS and motion sensor.	N o	2		
C1.16/ 1.07	Provide a Two way Radio Communication Walkie Talkie with at least 16 Memory Channels, 50 CTCSS / 105 CDCSS, Battery Saving Features, Low Voltage Alert, VOX, Scanning, & Monitor Functions, English Voice Prompt, PC Programmable, Voice Scramble & Encryption, Emergency Alarm, High Illumination Flashlight and Transmitter Time-Out Timer (TOT) or equivalent.	N o	4		
C1.16/ 1.08	200m range laser distance measuring machine	N o	3		
C1.16/ 1.09	Bosch GWM 32 Professional Measuring Wheel or equivalent with min wheel diameter (circumference): 318.5 mm (1 m), Max. measured value: 9999.9 m: Telescopic handle, Material: Aluminium and Measurement accuracy: 1 dm/100 m	N o	2		
C1.16/ 1.10	Roll of tracing/matte film paper	N o	4		
C1.16/ 1.11	GPS System - Leica GS09 GNSS system, with at least three rovers and a controller. The controller to have colour display, touch screen & stylus, CF card slot and alphanumeric keyboard, GLONASS, RTCM/CMR, RTK unlimited, network RTK, 5Hz positioning, and raw data logging. The system to incorporate Reference line, DTM stake out, RoadRunner and Volume calculation. the system to include all accessories i.e batteries with professional charger, Min 8GB memory card, compactFlash PC card adaptor, data transfer cables, modems and antennas, poles and accessories, tripod and software.	N o	1		
	Total carried to Bill Item 1.16				


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