SILL ITEM	DESCRIPTION	AMOUNT (KSHS)
1	Preliminaries and General Items	
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 Gravel Base and Subase	
14	Lime/Cement Improved gravel Subbase and Base	
15	Bituminous Surface Treatment and Surface Dressing	
16	Bituminous Mixes	
17	Concrete Works	
20	Road Furniture	
21	Miscellaneous Bridge works	
22	Schedule of Dayworks.	
25	HIV/AIDS, Gender &Social Issues, Local Participation	
(A)	SUB-TOTAL (1)	
(B)	Add 15% VARIATION OF PRICE of sub total (1)	
(C)	Add 10% CONTIGENCIES of sub total (1)	
(D)	SUB-TOTAL (2) = (A + B + C)	
(E)	Add16% VAT of sub-total (2)	
(F)	Add 0.03% Public Procurement Capacity Building Levy of sub-total (2)	

BILL NO. 1. PF	RELIMINARIES AND GENERAL ITEMS DESCRIPTION Provide or rent accomodation for Engineer's senior and junior staff (i) Type I - 1 No.	UNIT Month	QTY 24	RATE 65,000	AMOUNT (KSHS) 1,560,000.00
1.01	(i) Type II - 3 No. (iii) Type III - 5 No. (iv) Type IV - 5 No. (v) Type V - 10 No. Total E.O item 1.01 for contractor's overhead and profit	Month Month Month Month Total Item 1.01 %	72 144 192 240 22,080,000	55,000 40,000 30,000 21,000	3,960,000.00 5,760,000.00 5,760,000.00 5,040,000.00 22,080,000.00
1.03 1.04 1.05	 Provide or rent and maintain Engineer's Representative's office as shown on the drawings or as instructed by the Engineer for use during the duration of the Contract, ownership to revert to the Contractor at the end of the Contract Provide or rent and maintain Engineer's Site Laboratory for the duration of the Contract, ownership to revert to the Contractor at the end of the Contract Provide and maintain Laboratory equipment, reagents and other items as priced in Appendix 'A' to the Bill of Quantities for use by the Engineer's representative for the 	LS LS LS	1		
1.06A 1.06B	 duration of the contract ownership to revert to the Contractor at the end of the Contract. Provide and maintain furniture , tools and other items for the Engineers office as priced in Appendix B for the duration of the contract ownership to revert to the Contractor at the end of the Contract. Provide and maintain survey equipment as priced in Appendix C for the duration of the contract ownership to revert to the Contract. 	LS	1		
1.07	 Provide with a driver, fuel and maintain one (1) new 4WD fully loaded station wagon of minimum diesel engine capacity 2400cc approved by the Engineer for his exclusive use, inclusive of the first 5000km per vehicle month. Vehicle to revert to the Contractor at the end of the project. EO item 1.08 for total aggregated mileage in excess of 5000km per vehicle month. Provide with drivers, fuel and maintain one (1) new 4WD fully loaded double cabin pick-up 	Veh Month km	24 72,000		
1.09 1.10 1.11	of minimum diesel engine capacity 2400cc approved by the Engineer for his exclusive use, inclusive of the first 5000km per vehicle month. Vehicles to revert to the Contractor at the end of the project. E.O item 1.10 for total aggregated mileage in excess of 5000 km per vehicle per month. Ditto item 1.10, but one (1) new 4WD standard double cabin pick-ups of minimum diesel engine capacity 2500cc approved by the Engineer for his exclusive use inclusive of the first 5000km per vehicle month. Vehicles to revert to the Contractor at the end of the project.	Veh Month km Veh Month	24 54,000 24		
1.12	E.O item 1.12 for total aggregated mileage in excess of 5000 km per vehicle per month. Ditto item 1.10, but two (2) new 4WD standard Single cabin pick-ups with fibre glass body and cushioned benches of minimum diesel engine capacity 2200cc approved by the Engineer for his exclusive use inclusive of the first 5000km per vehicle month. Vehicles to revert to the Contractor at the end of the project.	km veh Month	36,000 48		
1.14 1.15 1.16 1.17 1.18	 E.O item 1.12 for total aggregated mileage in excess of 5000 km per vehicle per month. Allow a Prime Cost Sum of Kshs. 9,000,000 for the RE's miscellaneous account to be spent in whole or part as directed by the RE against receipts. E.O. item 1.15 for Contractor's overheads and profits. Allow a Prime Cost Sum of Kshs 32,400,000.00 for attendance upon the Resident Engineer' staff. E.O. item 1.17 for Contractor's overheads and profits. 	km PC Sum % PC Sum %	72,000 1 0 1 0		
1.19 1.20 1.21 Bill No. 1 Tota	Provide, erect and maintain publicity signs as directed by the Engineer. Allow for lumpsum for Engineer's training E.O. item 1.20 for Contractor's overheads and profits.	No. LS %	5 1 0		22,080,000.00
BILL NO. 4 : SI	TE CLEARANCE AND TOP SOIL STRIPPING DESCRIPTION Note: No separate payments shall be made for gravel for blinding or hauling to spoil unsuitable excavation materials and the cost of such shall be included in the rates and prices Clear site on road reserve including removal of all growths, bushes, hedges, trees, stumps,	UNIT	QTY	RATE	AMOUNT (KSHS)
4.01 4.02 4.03	grub up roots, and other deleterious materials and back-fill and compact to 100% MDD(AASHTO T99) with approved material as directed by the Engineer.Strip top soil upto 0.2m in thickness along alignment or material sites including removal of all grass and other vegetation, transport to spoil and spread or stock pile for re-use as directed by the Engineer.Provide KShs 2,500,000 for the removal of structures and obstructions to be paid on dayworks basis	Ha. m ³ Prov Sum	59.94 87,912.00 1		
Bill No. 4 Tota	l Carried Forward to Grand Summary				0.00
BILL NO. 5 : E/	DESCRIPTION Note: No separate payments shall be made for grave for blinding or hauling to spoil unsuitable excavation materials and the cost of such shall be included in the rates and prices	UNIT	QTY	RATE	AMOUNT (KSHS)
5.01 5.02 5.03 5.04	 Fill in soft material including benching of shoulders and embankments and compaction to 95% MDD (AASHTO T99) in layers not exceeding 150mm E.O item 5.01 for compaction of the top 300mm subgrade to 100% MDD Ditto item 5.01 but in hard material Cut to spoil in soft material 	m ³ m ³ m ³ m ³	156,090 94,905 39,022.50 93,654.00		
5.05 5.06 5.07 5.08	Ditto item 5.04 but in hard materialProvide improved sub grade material to a thickness as shall be instructed by the Engineer and process, water and compact to 100% MDD (AASHTO T99)Compaction of top 300mm below formation level in cuts and fills to 100% MDD (AASHTO T99)Compaction of 150mm original ground below fills to 95% MDD. (AASHTO T99)	m ³ m ³ m ³ m ³	23,413.50 44,955.00 62,436.00 29,970.00		
5.09 5.10 5.11 5.12 5.13	Top-soiling prior to planting grass as directed by the Engineer Grassing as directed by the Engineer Provide Rock Fill to swampy areas as directed by Engineer Provide Filter Fabric to swamp under, over, and around rock fill Provide and Install geogrids	m ² m ² m ³ m ² m ²	39,960 39,960 2,500 5,000 5,000		
	l Carried Forward to Grand Summary XCAVATION AND FILLING OF STRUCTURES DESCRIPTION Note: No separate payments shall be made for gravel for blinding or hauling to spoil	UNIT	QTY	RATE	0.00 AMOUNT (KSHS)
7.01 7.02 7.03	 unsuitable excavation materials and the cost of such shall be included in the rates and prices Excavate to spoil for structures in soft materials. As item 7.01 but in hard material. Provide, place and compact rockfill below and around strucures. 	m ³ m ³ m ³	500.00 200.00 140.00		
7.04 7.05 7.06 7.07	 Provide and place 150mm thick stone pitching as directed by the Engineer including cement grouting . Excavate for gabions in soft material. Provide and place gabion boxes and matresses where directed by the Engineer. Rockfill to gabions. 	m ² m ³ m ² m ³	49,950.00 6,660.00 36,630.00 6,660.00		
7.08 7.09 7.10 7.11	Filter fabric behind gabion boxes and matresses.Provide and backfill approved material around new box culverts, compact to 100% MDD (AASHTO T99) in layers not exceeding 150mm.Allow for protection of structures pusuant to section 707 of the specificationsAllow for river training in soft material	m² m³ LS m³	6,660.00 300.00 1 400		
	Allow for river diversion Provide for coffer dams as directed by the Engineer I Carried Forward to Grand Summary JLVERTS AND DRAINAGE WORKS	m³ LS	0		0.00
ITEM 8.01	DESCRIPTION Note: No separate payments shall be made for gravel for blinding or hauling to spoil unsuitable excavation materials and the cost of such shall be included in the rates and prices. Excavate for inlet,outfall,mitre and catch water drains in soft material	UNIT m ³	QTY 6,000	RATE	AMOUNT (KSHS)
8.02 8.03 8.04 8.05	As per item 8.01, but for hard material Excavation in soft material for pipe culverts,headwalls, wingwalls, apron, toewalls,and drop inlets and compact as directed by the engineer As per item 8.03, but for hard material Provide,lay and joint 600mm dia. concrete pipes (precast to BS 5911 Parts 1 & 3) for access roads	m ³ m ³ m ³ m	1,500 3,409.50 852.38 1,800.00		
8.06 8.07 8.08 8.09	As for item 8.05 but 900mm dia concrete pipes (precast to BS 5911 parts 1 & 3) for cross culverts As for item 8.05 but 1200mm dia concrete pipes (precast to BS 5911 parts 1 & 3) for cross culverts Provide and place class 15/20 concrete to beds, surround and haunches Provide, place and compact class 25(20) concrete for headwalls, wingwalls, aprons, and toewalls to access and cross pipe culverts including all form work and the provision and	m m m ³ m ³	600 120 2,021 1,020.96		
8.09 8.10 8.11 8.12	toewalls to access and cross pipe culverts including all form work and the provision and placing of reinforcement as shown in the drawingsProvide and place invert block drains with two course side slabs (Provisional)Construct in concrete class 15(20) side drains scour checks as instructedProvide and place precast concrete slabs 1000mm x 600mm x 50mm and place over open lined drains in trade centres and markets	m ³ m m ³ No.	1,020.96 5,000 500 1,066		
8.13 8.14 Bill No. 8 Tota		No. m m	1,066 250 500		0.00
BILL NO. 9: P ITEM 9.01	ASSAGE OF TRAFFIC DESCRIPTION NOTE: Notwithstanding the provision of Section 9 of the Standard Specification, no extra payments shall be due as all costs shall be deemed to be included in the rates inserted herein Construct and maintain diversions in maximum lengths of 5km sections as directed by the Engineer, including 150mm wearing course gravel all signage, lighting and barriers	UNIT	QTY 25	RATE	AMOUNT (KSHS)
9.02 9.03 9.04 9.05	 Provide, spread, water and compact gravel of minimum CBR 30% as directed by the Engineer for maintenance works. Allow for the passage of traffic through and around the works Grade, water and compact existing road ahead of works Reinstatement of deviations to original state 	m³ LS km km	22,500 1 25 25		
Bill No. 9 Tota	I Carried Forward to Grand Summary NATURAL MATERIAL FOR SUBBASE AND BASE DESCRIPTION	UNIT	QTY	RATE	0.00 AMOUNT
12.01	Note: No overhaul will be paid for separately under these items as it shall be deemed to have been included in the Contractor's rates Provide gravel sub-base material, haul, spread, compact to at least 100% M.D.D (AASHTO T-180) and shape to level and tolerance. Ditto item 12.01 but for base		49,450.50 46,703.25		(KSHS)
	al Carried Forward to Grand Summary CEMENT OR LIME TREATED SUBBASE AND BASE DESCRIPTION	UNIT	QTY	RATE	0.00 AMOUNT
14.01	Note: No overhaul will be paid for separately under these items as it shall be deemed to have been included in the Contractor's rates Provide and spread lime as an improvement agent for sub-base Provide and spread lime as an improvement agent for base	Tonne	1.00 1.00		(KSHS)
14.03 14.04 14.05 14.06	 Provide and spread Cement as an improvement agent for sub-base Provide and spread Cement as an improvement agent for base Mix and process natural material with improvement agent for pavement layers as instructed by the Engineer or as specified. Curing of cement / lime treated base and sub-base layers 	Tonne Tonne m ³ m ²	2,101.65 2,778.84 96,153.75 532,800.0		
	al Carried Forward to Grand Summary BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING TO SHOULDERS	UNIT	QTY	RATE	0.00 AMOUNT
15.01 15.02 15.03	 Prepare surface of shoulders, provide, heat and spray MC 30 cutback bitumen prime coat at 0.8-1.2 Litres/m2. Prepare surface of carriageway and shoulders, provide, heat and spray 80/100 straight run bitumen as Binder for first seal on the shoulders at a rate of 1.0-1.2 Litres/m2. Provide, transport, lay and roll 14/20 mm Class 3 pre-coated with MC 30, chippings at a 	Litres Litres m ³	360,439.2 0.0 0.00		(KSHS)
15.04	rate of 60-90m2/m³Prepare surface of carriageway and shoulders, provide, heat and spray 80/100 straight run bitumen as Binder for as seal on the carriageway and shoulder at a rate of 0.8-1.0 Litres/m2.Provide, transport, lay and roll 10/14 mm pre-coated chippingsPrepare surface of carriageway and shoulders, provide, heat and spray 80/100 straight run	Litres m ³	276,000.0 3,680.00		
15.06 15.07 15.06	bitumen as Binder for as third seal on the carriageway and shoulder at a rate of 0.6-1.0 Litres/m2. Provide, transport, lay and roll 6/10 mm pre-coated chippings Provide & spray K1-60 as tack coat on carriageway, shoulders and on rumble strips rate of 0.5-0.8 l/m2	Litres m ³ Litres	0 0 266,400		
	BITUMINOUS MIXES DESCRIPTION Provide and erect Asphalt Concrete Type II on carriageway and bus bays as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	UNIT m ³	QTY 7,692.3	RATE	0.00 AMOUNT (KSHS)
16.02	Provide and erect Asphalt Concrete Type II on shoulders as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix. Provide and erect Asphalt Concrete Type I Speed bumps and Rubble strips as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	m³ m³	2,564.1 200.0		
	tal Carried Forward to Grand Summary CONCRETE WORKS DESCRIPTION BRIDGES AND BOX CULVERTS	UNIT	QTY	RATE	0.00 AMOUNT (KSHS)
17.01	ConcreteProvide, place and compact Class 15(20) concrete blinding as instructed by the EngineerProvide, place and compact concrete class 25(20) to base of wingwall, abutments, main beams, cross-beams ,deck and approach slabs as shown in drawings.Provide, place and compact concrete class 30(20) to base of wingwall, abutments, main	m³ m³	15 150		
17.03	 beams, cross-beams ,deck and approach slabs as shown in drawings. Reinforcement: Provide, cut, bend & fix into position steel reinforcement as shown in the drawings or as instructed by the Engineer High yield reinforcement steel bars to BS 4461 equal to or less than 16mm diameter bar size 	m ³	0		
17.04 17.05 17.06	 High yield bond strength reinforcement steel to BS 4461 greater than 16mm diameter bar size Formwork : Provide, erect and afterwards dismantle and remove all the formwork as specified by the Engineer Provide & fix in place vertical formwork to achieve class F1 finish As item 17.05 but horizontal 	Tonne m² m²	10 450 300		
	As item 17.05 but sloped. Vertical formwork to achieve class F3 finish al Carried Forward to Grand Summary	m² m²	50 100		0.00
ITEM 20.01 20.02	DESCRIPTION Provide Road Reserve Boundary posts Excavate for, provide & place 250 x 125mm precast concrete raised or ramped kerbs haunched in 100mm thick class 15/20 concrete base bedding and mortar joined in support to carriageway, busbays and junctions as directed by the Engineer. a) Straight kerbs	UNIT No.	QTY 334 4,200	RATE	AMOUNT (KSHS)
20.03 20.04	 a) Straight kerbs b) Kerbs radius 12m - 6m c) Ditto but radius 5m - 1m As 20.02 but for flush kerbs 100 x 125mm Provide and erect permanent road signs where instructed by the Resident Engineer and in accordance with Special Specifications Clause 2004 as follows: a) warning signs 	m m m No.	4,200 1,200 600 1,000 30		
	 b) Priority prohibitory and mandatory signs c) Standard informatory signs d) Non standard informator signs area i) Less than 1.0m² ii) More than 1.0m² but less than 5m² 	No. No. No. No.	30 20 20 14		
20.05 20.06 20.07 20.08 20.09	 Provide, deliver, paint and mark the road as specified or as directed by the Engineer, with white reflectionized thermoplastic paint from an approved supplier. As item 20.05 but for yellow reflectionized thermoplastic paint Provide and erect concrete posts for guardrails complete with spacers (size and interval) as per specifications or as directed by the Engineer Provide and erect flex-beam guardrails complete with connections as shown on the drawings or as directed by the Engineer 	m² m² No. m	7,992 3,996 700 1,500		
	Provide Edge marker posts Provide kilometre marker posts as directed by the Engineer al Carried Forward to Grand Summary MISCELLANEOUS BRIDGE WORKS	No.	100 34		0.00
ITEM 21.01 21.02 21.03	DESCRIPTION Provide 75 mm diameter weepholes and insert heavy duty PVC 100mm diameter as instructed by the Engineer Provide and fix in position hand rails 75 mm diameter on crash barriers, with hold down brackets at not more than 2.5 meters intervals Providing and placing bitumen emulsion or cutback bitumen or bitumen/rubber latex emulsion to all structural concrete in contact with fill material or cut soil.	UNIT No. m m ²	QTY 50 250 293	RATE	AMOUNT (KSHS)
21.04 21.05 21.06	 Provide and place into position elastomeric laminated rubber fixed bearings code 3710443, size 406mm x 279mm x 58mm as shown in drawings or as shall be instructed by the Engineer. As item21.04 but code 3710444, size 406mm x 279mm x 74mm free bearings. Provide and install movement joint and sealant for bridges 	No. No.	0 0 0		
21.07 21.08 21.09 21.10	 proviode and install bituminous felt bearings as shown in the drawings Provide and install vertical joint sealant for bridges As item 21.06 but horizontal Provide and place into position handrails to kerbs of bridge deck & ramps as shown on the drawing and as directed by the Engineer. 	No. m m	0 0 0 0		
21.10	 drawing and as directed by the Engineer. Provide and place into position handrails along the edge of the carriageway as per drawings and as instructed by the Engineer. Provide and place into position galvanised flexi-beam guardrails including end pieces,nuts and bolts along the approaches to the bridges as per drawings and as instructed by the Engineer. including end pieces,nuts and bolts along the approaches to the bridges as per drawings and as instructed by the Engineer. Provide and place into position galvanised flexi-beam guardrails including end pieces,nuts and bolts along the approaches to the bridges as per drawings and as instructed by the Engineer. Provide and place into position galvanised flexi-beam guardrails including end pieces,nuts 		0		
21.13 21.14 21.15 21.16	 Provide and place into position galvanised flexi-beam guardrails including end pieces, nuts and bolts along the approaches to culverts as per drawings and as instructed by the Engineer. Provide and place a 0.5m wide drainage layer of class 14/20 mm to structural concrete in contact with fill material. Provide and place as directed by the Engineer PVC pipes of diametre 75mm and length 600 mm to form weep holes to bridge abutments and wingwalls Provide and place as directed by the Engineer PVC pipes of diametre 75 mm and length 300 mm to form storm drain pipes of the bridge deck 	m m³ No. No.	0 0 0 0		
	al Carried Forward to Grand Summary SCHEDULE OF DAYWORKS DESCRIPTION	UNIT	QTY	RATE	0.00 AMOUNT (KSHS)
22.01	PLANTThe rates inserted herein are to include all operational and Maintenace costs, fuel, oil, grease, drivers/operators wages, supervision, overheads and profit. Only time actually employed upon the work will be paid for and the rates should include for idle time, travelling time and overtime, In accordance with clause 2202 (a) of the specifications.Note: All items of plant must be priced.Crawler dozers with hydraulic attachmentsto include rippera) Up to 135 kw rated flywheel power	1	20		
22.02	b) Over 136 kw rated flywheel power Motor Grader a) Up to 110kw rated flywheel power b) Over 100kw rated flywheel power	hrs hrs hrs hrs	20 8 50 8		
22.03 22.04 22.05	Vibratory Roller a) 6.5 - 8.81 tonne un-ballasted weight b) Over 8.91 tonne un-ballasted weight Hand propelled vibrating roller 650 - 1300kg Cat 950G wheel loader or equivalent	hr hr hrs hrs	20 8 8 8		
22.06 22.07 22.08 22.09	10 Tonne tipper lorry Small dumpers, 750-1000kg rated payload Dual purpose hydraulic excavator with backhoe/loader and a rated bucket capacity of upto 1m3. Articulated wheel loader with 1.5-2.0m³ SAE rated bucket capacity	hrs hrs hrs hrs	8 8 8 8 8		
22.10 22.11 22.12 22.13	50mm delivery water pump and motor Self propelled water tanker 4,500ls min. capacity with pick-up pump Concrete Mixer of 100 - 150litres Concrete poker vibrator LABOUR	hrs hrs hrs hrs	8 8 8 8		
22.14 22.15 22.16	The rates inserted herein are to include all costs of labour such asinsurance, accomodation, travelling time, over-time, use and maintenance of small tools of trade, supervision, overheads and Profit.Only the actual time engaged upon the work will be paid for. Unskilled Labour Artisans	hrs hrs	24 24 24		
ITEM	Office attendants and chainmen Watchmen (all round surveillance) al Carried Forward to next page DESCRIPTION	hrs hrs UNIT	24 24 QTY	RATE	0.00 AMOUNT (KSHS)
Brought forwa	Ad from previous page MATERIALS All materials are to comply with the Specification. The rates inserted herein are to include for delivery to the site, storage, handling, overheads and profit Ordinary Portland Cement	Ton	1		0.00
22.19 22.20 22.21 22.22	Hydrated Lime Mild Steel(any diametre) High Yield Steel (any diametre) Fine Aggregate for Concrete	Ton Ton Ton m ³	1 1 1 10		
22.22 22.23 22.24 22.25	Fine Aggregate for Concrete Coarse Aggregate for Concrete Wrot Shuttering Timber Rough shuttering timber.	m ³ m ³ m ² m ²	10 10 10 10		
22.26 22.27 22.28 22.29	Bitumen Emulsion KI-60. Straight run bitumen Grade 80/100. Kerosene 14/20 mm nominal size surface chips.	Litre Litre Litre m ³	10 10 10 10		
22.30 22.31	14/20 mm nominal size surface chips 6/10mm nominal size surface chips AC Type II Ex-plant al Carried Forward to Grand Summary	m ³ m ³ m ³	10 10 10		0.00
ITEM 25.01 25.02	ENVIRONMENTAL MITIGATION MEASURES & HIV AIDS CAMPAIGN DESCRIPTION All for a prime cost sum of KShs 5,000,000 (Five Million) for ESIA study and report, Compliance Audits and environmental monitoring. E.O for Item 25.01 for Contractor's Oveheads and Profit Allow for engagement of a HIV/AIDS specialist subcontractor to deal with prevention,	UNIT PC sum %	QTY 1 0	RATE	AMOUNT (KSHS)
25.03 25.04 25.05 25.06 25.07	 awareness activities as per programme to be approved by the Engineer Allow for the availability of male and female condoms to workers and staff strategically and socially presented for the duration of the contract Allow for preparation and submmision of monthly reports on HIV/AIDS awareness and prevention activities. Report to be tabled at site meetings., Provide, Instal and maintain HIV/AIDS awareness bill boards with approved message and graphics with maximum area 4m² fabricated as per specifications of permanent informatory sign boards Allow for video shows on HIV/AIDS related awareness and prevention matters every 	Months No. Months No. Quarterly	36 5,000 36 8 12		
25.07 25.08	Allow for production and distribution of HIV/AIDS awareness material as follows: a) T-Shirt printed with approved message and graphics b) Ditto (a) above but caps c) A1 size weather proved posters d) A3 size weather proved posters	Quarterly No. No. No. No.	12 200 200 20 200		
Bill No. 25 Tot	 d) A3 size weather proved posters e) 200x150mm stickers with HIV/AIDS awareness/prevention slogan f) Key rings with HIV/AIDS awareness/prevention slogan g) Ball point pens with HIV/AIDS awareness / prevention slogan. 	No. No. No.	200 200 200 500		0.00

MAINTENANCE	OF KIONYO -KANYAKINE - MITUNGUU ROAD	DIX A			RWC xxx
S/NO.	APPENDIX TO BI PROVIDE AND MAINTAIN FURNITURE AND EQU DESCRIPTION		NGINEER'S LABOI QTY	RATORY RATE (KSHS)	AMOUNT (KSHS)
A104/1.01 A104/1.02	1. FURNITURE Desk 2.2x0.9 m with chair and lockup drawers Desk chair (standard) Station of the state state state	No	2 15		
A104/1.03 A104/1.04 A104/1.05	Stationery cupboard, 1.2 m³, lockable Steel filing cabinet, 4 drawers, lockable Steel filing cabinet, 2 drawers, lockable	No No No	2 2 2 2		
A104/1.06 A104/1.07 A104/1.08	Bookshelf, 3 shelves 1.2 m long (to hold box files) Table - 6 m ² Two Plate electric heater	No No No	2 2 1		
A104/1.09 A104/1.10	Fire extinguisher, 10 litre capacity, CO2 type Complete first aid kit EQUIPMENT	No	4 2		
	(The following equipment shall be purpose made for use in the Engineer's laboratories and shall comply with the relevant British (BS) or American (AASHTO) Standard)				
A104/2.02 A104/2.03	2. General Equipment 2.49kg. Compaction hammer, drop regulated to 304.8mm 4.535kg compaction hammer drop regulated to 457.2mm	No	2		
A104/2.04 A104/2.05 A104/2.06	Electric vibrating Kango Hammer fitted with steel tamper(BS 1377) with support frame Straight edge 300 mm long with handles Steel Tamper (BS1377) compatible with Kango hammer	No No No	1 4 3		
A104/2.07 A104/2.08 A104/2.09	Compaction mould 152.4 mm. dia x 116.43 mm complete with base plate and extension collar, 101.6 mm Galvanized metal tray 1m x 0.5m x 75 mm deep 75mm brush	No No No	2 4 2		
A104/2.10 A104/2.11 A104/2.12	Semi-automatic balance, 25kg Capacity accurate to 1g, including weights 20mm BS Sieve, 300mm diameter Stop Clock	No No No	1 1 2		
A104/2.13 A104/2.14 A104/2.15	Thermostatically controlled electric oven 105-110°C, capacity 0.225 m ³ As above but gas heated Moisture content tins, 75 mm dia, Cadmium or aluminium plated	No No No	2 1 60		
A104/2.16	Cone penetrometer with gauge and automatically controlled test cup C/Forward to next page	No	2		
A105/3.01	B/Forward from previous page 3. Density (Sand replacement method BS 1377) Metal containers 450mm diameter	No	2		
A105/3.02 A105/3.03	Metal containers 430mm diameter Stainless steel tray 305mm diameter Metal tray with 150 mm diameter hole in the centre, 300mmx300 mm square or equivalent area, 40mm deep Metal tray with 200mm diameter hole in the centre, 500mm x 500 mm square , 50	No	2		
A105/3.04 A105/3.05 A105/3.06	Initial day with 200 mm diameter in the centre, boothan 1000 mm oquate, 500 mm deep Steel pegs for fixing tray in position Sand pouring cylinder, 150 mm diameter	No No No	2 15 2		
A105/3.07 A105/3.08 A105/3.09	Sand pouring cylinder, 215 mm diameter Cold steel chisel 20mm x 300mmm Cold steel chisel 10mm x 250mmm	No No No	2 4 4		
A105/3.10 A105/3.11 A105/3.12	1.5kg, 3.5kg hammers and 1kg rubber mallet Scoop for removing excavated material from hole, 250 mm long handle 100mm brush, soft	Set No No	1 6 3		
A105/3.13 A105/3.14 A105/3.15	50mm brush, soft Primus gas stove Calibrating can 150 mm diameter x 150 mm deep	No No No	3 1 3		
A105/3.16	Ditto but 200 mm diameter x 250 mm deep 5. CBR (AASHTO T193)	No	3		
A104/5.01 A104/5.02 A104/5.03	 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 Perforated swell plate 150 mm dia with an adjustable centre post of rust proof metal provided with a lock-nut 2.25 kg split surcharge weight 	INO	50 40 2		
A104/5.04 A104/5.05 A104/5.06	Set of annular surcharge weights Solid base plate for CBR mould Static compaction displacer discs 1 Nox 61.4 mm, 1 No x 50.8 mm and 2 Nox 38.8	No No set	1 2 1		
A104/5.07 A104/5.08	mm thick with handles Disk lifting handle Central extruder, complete with 20kN hydraulic jack and accessories Automatic CBR Proctor Compaction press, 50 tonnes capacity with an adjustable	No	2		
A104/5.09 A104/5.10	 distance between platens of 530mm-250mm, rammer weights and automatic count selector Set of guards for above press. 50 kN CBR Load frame complete with stabilising bar (electric and hand operated) 	No	1		
A104/5.11	50 kN CBR Load frame complete with stabilising bar (electric and hand operated) including proving rings for 10KN, 28KN and 50KN, piston and bracket C/Forward to next page B/Forward From previous page	No			
A104/5.12 A104/5.13	Penetration gauge range 0 - 25mm CBR piston including bracket	No	2		
A104/5.14 A104/5.15	Swell measurement tripod complete with guage calibrated in 0.01 mm divisions Soaking tank for CBR mould sufficient for 50 moulds 6. Relative Density of Aggregates (BS 812)	No	2		
A104/6.01 A104/6.02 A104/6.03	Wire mesh basket with apertures not greater than 6.5 mm large enough to contain 2.5 kg of aggregate A stout watertight container in which the basket can be freely suspended	No No	2 2 10		
A104/6.03 A104/6.04 A104/6.05 A104/6.06	Soft absorbent cloth (tea towel) Shallow tray of area not less than 0.065 m ² An airtight container of similar capacity to the basket Pycnometer of 1 litre capacity	No No No	10 2 2 4		
A104/6.06 A104/6.07 A104/6.08	Pycnometer of 1 litre capacity 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) Hot air drier (electric)	No No No	4 1 2		
A104/7.01	7. Flakiness (BS 812) Thickness gauge (various sizes)	No	2		
A104/8.01 A104/8.02	 8. Sieve Analysis (BS 1377) 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 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	2		
A104/8.03 A104/8.04 A104/8.05	Electric sieve shaker BS sieve 200mm diameter 0.425 and 0.075 mm 1 m x 1 m x 75mm deep galvanized metal tray	No set No	1 1 10		
A104/8.06 A104/9.01	Riffle box with 50mm slots (BS 1377) 9. Miscellaneous Equipment Wheel barrow	No	1		
A104/9.02 A104/9.03 A104/9.04	Dustpan and brush Shovel Pick axe with handle	No No No	3 4 4		
A104/9.05 A104/9.06 A104/9.07	Metal scoop, large (150mm wide) Metal scoop, medium (100mm wide) Garden trowel	No No No	3 4 2		
A104/9.08 A104/9.09	Steel tray 0.3m x 0.3m x 0.01m deep Palette knife 200mm long blade	No	15		
A104/9.10 A104/9.11 A104/9.12	Palette knife 100mm long blade BS sieve 450mm diameter, 37.5mm BS sieve 450mm diameter, 20mm	No No No	4 1 1 1		
A104/9.13 A104/9.14 A104/9.15	BS sieve 450mm diameter, 5mm BS sieve 450mm diameter, 0.425mm BS sieve 450mm diameter, 0.3mm	No No No	1 1 1		
A104/9.16	Page 5 C/Forward tonext page B/Forward from prevoius page BS sieve 450mm diameter, 0.075mm	No	1		
A104/9.17 A104/9.18 A104/9.19	Set of lid and receiver for metal scoop and steel trays BS Sieve brush Measuring cylinder set, 25 ml, 100 ml, 500 ml, 1000 ml, 2000 ml	No No set	2 2 2 2		
A104/9.20 A104/9.21	Glass jar capacity 5 litres with lid 200mm x 200mm x 20mm cadmium plated or aluminium tin	No	10 20		
A104/9.22 A104/9.23 A104/9.24	Electronic balance capacity 1000 g, accurate to 0.01gm. Balance 2000 g capacity accuracy to 0.1g (manual), including weights Balance 50kg capacity accurate to 10gm including weights	No No No	1 1 1		
A104/9.25 A104/9.26 A104/9.27	Still for producing distilled water Polythene or glass 20 litres storage vessel with tap at bottom Stiff broom	No No No	1 2 2		
A104/9.28 A104/9.29 A104/9.30	Vernier calipers, 150mm Vernier calipers, 250mm Pestle and mortar	No No No	2 2 2		
A104/9.31 A104/9.32 A104/9.33	Linear shrinkage mould (BS 1377) Liquid Limit Device Average least dimension gauge	No No No	6 2 2		
A104/9.34	Lockable tool box containing: 1 pr"Molegrips", 2 x 150mm screwdriver, 2 x 200 mm screwdriver, 2 x 300 mm screwdriver,(1 standard and 1 Phillips head of each) adjustable spanners 200 mm and 300 mm, 1 pair round nosed pliers, 1 pair general purpose pliers,	No	1		
A104/9.35 A104/9.36 A104/9.37	Plastic or metal bucket including lid,10 litres capacity Polythene wash bottle (500 ml) A4 size clipboard	No No No	6 5 4		
A104/9.38 A104/9.39 A104/9.40	Thermometer, range -10°C to150°C, glass (BS 593) Laboratory thermometer, range + 0°C to + 250°C (BS 593) Maximum and minimum thermometer (BS692)	No No No	2 2 2 2		
A104/9.41 A104/9.42 A104/9.43	Rain gauge Portable dial thermometer + 50°C to +250°C accurate to ± 3% Ditto with 0.75m long stem	No No No	1 1 1 1		
A104/9.44 A104/9.45 A104/9.46	Pocket thermometer + 50°C to +250°C accurate to ± 3% with 0.1 m stem 5 litre capacity steel storage containers with leak and dust proof lids for storage of bitumen samples Hotplate 200mm diameter with Simmerstat heat control unit.	No No No	2 50 2		
A104/9.46 A104/9.47	Hotplate 200mm diameter with Simmerstat heat control unit. 450mm diameter x 150mm deep metal mason's basin C/Forward to next page	No	6		
A104/11.01	B/Forward from previous page 11. Concrete: Slump and Cube Manufacture (BS 1881) Slump cone, tamping rod and base	set	2		
A104/11.02 A104/11.03 A104/11.04	Concrete cube mould, 150mm cube Soaking tank for cubes (capacity 50 No.) Cube tamping bars	No No No	30 1 10		
A104/12.01 A104/12.02	12. Concrete: Cube Compression Testing Concrete compression machine to BS1610 Grade A with 300 mm gauge, rectangular platens, capacity 1560 kN with load spacer Safety guard for above				
A104/12.02 A104/12.03 A104/12.04 A104/12.05	50mm distance piece 70mm distance piece Electro-mechanical load pacer, 100 mm or equivalent distance piece	No			
A104/12.05 A104/13.01	 13. Aggregate and Chippings Sand equivalent to AASHTO T176 including graduated plastic cylinder, rubber stopper, irrigation tube weighted foot assembly, siphon assembly, 85ml tin box (57mm dia.), 100 mm dia wide mouth funnel, stop clock, mechanical shaker and 10 	Set	1		
A104/13.02 A104/13.03 A104/13.04	litre jar Beaker 250ml Aggregate Crushing Value Apparatus, 150 mm nominal diameter, including plunger and base plate Tamping rod and metal measure for above	No No Set	2 2 4		
A104/13.04 A104/13.05 A104/13.06 A104/13.07	Tamping rod and metal measure for above Los Angeles Abrasion to ASTM standards Set of 12 abrasive charges Thermometer, 0°C to +50°C	Set No No No	4 1 2 2		
A104/13.07 A104/13.08 A104/13.09	Thermometer, 0°C to +250°C Reagent grade Silica gel, 500g container	No No	2 2 50		
A104/14.1 A104/14.2	14. Bitumen Spray Test (BS 1707) Transverse distribution of spray test bitumen distributor (depot tray test to BS 1707) or equivalent. Steel tray 20 mm deep x0.1m ² (for measuring bitumen spray rates) with purpose made detachable handle 1.5m long. 16. Bitumen Extraction Test	Set No.	1 4		
A104/16.01 A104/16.02	16. Bitumen Extraction Test A) Extractor Bottle Method BS 598 Part 2 Electronic top pan balance 4kg capacity, sensitive to 0.1gm Flat bottomed scoop	No	1 3		
A104/16.02 A104/16.03 A104/16.04 A104/16.05	Flat bottomed scoop Steel garden trowel Large steel spoon Heat resistant gloves	No No No pair	3 2 2 10		
A104/16.05 A104/16.06	Heat resistant gloves Foot pump for pressurising air water assemblies up to a maximum of 700KN/m ² and fitted with flexible hose approximately 1.2m long and connector C/Forward to next page	pair No	10 2		
A104/16.07 A104/16.08	B/Forward from previous page Steel bottle 600ml capacity with 49mm rubber stopper Steel bottle 2500ml capacity with 71mm rubber stopper	No	2		
A104/16.08 A104/16.09 A104/16.10 A104/16.11	Steel bottle 7000ml capacity with 71mm rubber stopper Flask funnel for fitting to the 700ml steel bottle with rim of funnel retaining sieve 200mm nominal diameter Bottle roller compact bench mounted unit designed to rotate 2 bottles	No No No	2 2 2 1		
A104/16.12 A104/16.13	simultaneously about longitudinal axis Pressure filter complete with cutting tool for making hole in the filter paper Filter funnel to take 200mm nominal diameter sieves	No No No	1 1 2 1		
A104/16.14 A104/16.15 A104/16.16	Centrifuge complying with BS 598 Binder recovery Volumetric flask 250ml, 500ml, 1000ml and 2000ml capacity Recovery still for Dichloromethane	No	1 1 2 1		
A104/16.17 A104/16.18	Recovery still for Dichloromethane B) Hot Extractor Method BS 598 Part 2 Hot extractor complete with wire gauze container gasket, cork lid and support assembly	No	1		
A104/16.19 A104/16.20 A104/16.21	assembly Dean and Stark receiver with condenser to suite Trichloroethylene Gyratory compactor ELE Servo Pac or equivalent with 1 x 100mm and 1 x 150mm moulds PRD Vibrating hammer compactor complete with 6 moulds, 7 base plates from ELE	No No Set	2 2 1		
A104/16.21	ELE Two (2) sets of Tamping foot 102mm diameter and 146mm diameter and shanks to fit the supplied vibratory hammer 17. Consumables		2		
A104/17.01 A104/17.02 A104/17.03	17. Consumables Paraffin wax Gunny sack Plastic bag 900x450x1000 gauge	Kg No No	50 500 500		
A104/17.03 A104/17.04 A104/17.05 A104/17.06	Plastic bag 900x450x1000 gauge Plastic bag 450x300x1000 gauge Filter paper 150mm diameter Whatman No. 5 (Boxes of 100) Filter paper 400mm diameter Whatman No. 5 (Boxes of 100)	No No No	500 500 20 20		
A104/17.06 A104/17.07 A104/17.08 A104/17.09	Filter paper 100mm diameter Whatman No. 5 (Boxes of 100)Filter paper 400mm diameter Whatman No. 54 (Boxes of 100)Filter paper 270mm diameter with 33 diameter hole at centre Whatman No. 5	No No No	20 20 10 15		
A104/17.10 A104/17.11	(Boxes of 100) Trichloroethylene (205 Litre Drum) Dichloromethane	No kg	5 200		
A104/17.12 A104/17.13 A104/17.14 A104/17.15	Cotton waste Gas cylinders (13Kg) with compatible gas burners - filled Sodium sulphate Sand for density test	kg No kg kg	50 5 45 250		
A104/17.15	Sand for density test C/Forward to next page B/Forward from previous page	kg	250		
	C/Forward to item 1.05				

APPENDIX B

APPENDIX TO BILL ITEM 1.06: PROVIDE, FURNISH AND MAINTAIN THE R.E.'S OFFICE

	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	1. ENGINEER'S MAIN OFFICE AND FURNITURE				
	Executive desk 2.2x0.9 m with six lockup drawers	No	2		
	Desk 2.2x0.9 m with chair and three lockup drawers	No	4		
	Office tables - 2.2x0.9m	No	5		
	Executive Swivel orthopeadic chair adjustable height	No	6		
	Standard office chairs	No	10		
	Typist's desk	No	1		
	Typist's chair	No	1		
	Lockable steel stationery cupboard, 1.2 m ³ , lockable	No	2		
	Medium size steel filing cabinet, 4 drawers lockable	No	2		
	Medium size steel filing cabinet, 2 lockable drawers	No	2		
	Bookshelf, 1.5 m wide 3 shelves (for box files) sliding glass door	No	2		
	Conference table with 15 chairs	No	1		
	Waste paper basket	No.	10		
	Curtains for office and laboratory - for all windows and doors	Set	2		
	Ordinary 2 hole paper punch	No	5		
	Heavy duty 2 hole paper punch	No	2		
	Computer meeting the following specifications or equivalent:				
	Personal computer with 17" screen full multimedia, 500GB hard disk, 4.0GB RAM, Core i7 processor, complete with all accessories preloaded with latest versions of windows OS, MS Office, Professional and MS Project	No	5		
	AutoCAD Civil 3D 2016 and Licences for above computers	No	1		
	Laptop PC with Intel Core i7-45IOU Processor 15.4" screen, CPU @ 2.6GHz 8GB RAM 1TB 8xDVD+/-RW approved with Microsoft Windows professional	No	4		
	Latest HP (A4) Laser Printer with accessories	No	5		
	Latest HP (A3) Laser Colour Printer with accessories	No	1		
	UPS 600 VA	No	6		
	Wall clocks, battery powered min size 350mm x 350mm	No	6		
	First Aid Kit	No	4		
	Fire Extinguisher	No	4		
	Filing Tray - set of 3no.	set	10		
	Refrigerator minimum capacity 0.2 m ³	No	1		
	Drinking water dispenser, hot/cold	No	3		
	Table - 0.8 m^2 surface area	No	1		
	Cupboard, 0.15 m ³ , lockable	No	1		
	Gas Cylinder (13Kg) with 3 gas burners	No	2		
	C/Forward			RATE	AMOUNT
5/NO.	C/Forward DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
5/NO.		UNIT	QTY		
S/NO.	DESCRIPTION				
S/NO.	DESCRIPTION B/Forward	UNIT	QTY 1		
S/NO.	DESCRIPTION B/Forward A3 Photocopier (approved make), with feeder sorting trays,				
5/NO.	DESCRIPTION B/Forward A3 Photocopier (approved make), with feeder sorting trays, scanner and print capability Reams of A4 phocopying paper Reams of A3 phocopying paper	No	1		
5/NO.	DESCRIPTION B/Forward A3 Photocopier (approved make), with feeder sorting trays, scanner and print capability Reams of A4 phocopying paper Reams of A3 phocopying paper Electronic scientific calculator, Casio fx 991ES plus or	No	1 120		
5/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approved	No No No	1 120 24		
S/NO.	DESCRIPTION B/Forward A3 Photocopier (approved make), with feeder sorting trays, scanner and print capability Reams of A4 phocopying paper Reams of A3 phocopying paper Electronic scientific calculator, Casio fx 991ES plus or	No No No No	1 120 24 6 6		
5/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approved	No No No	1 120 24 6		
5/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD	No No No No	1 120 24 6 6		
//NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.	No No No No No	1 120 24 6 6 2 2 2		
/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD	No No No No No	1 120 24 6 6 2		
5/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
5/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
//NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
×/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
×/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
S/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
S/NO.	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		
	DESCRIPTIONB/ForwardA3 Photocopier (approved make), with feeder sorting trays, scanner and print capabilityReams of A4 phocopying paperReams of A3 phocopying paperElectronic scientific calculator, Casio fx 991ES plus or equivalent approvedStapling machine Ofrex size 50 or similar with 5000 staplesHeavy duty punch and spiral binder, IBICO AG or similar approvedDigital Camera, 16.1 Megapixel(min), 1920x1080 full HD movie recording, optical steadyShot, sweep panorama, 2.7" LCD screen, minimum 5x digital zoom, multimedia card/SD 8GB memory, 12 scene selection modes, all inclusive.Provision of Mobile Phone for the Supervision Staff with the	No No No No No	1 120 24 6 6 2 2 2		

APPENDIX C

the f . <	ole prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No. No.	0 0 0 0 0		(KSHS)
the f . <	following facilities Inbuilt data logger Uploading/downloading software Data transfer cable Battery (2No) Battery charger Tool kit Two face keyboard User manual uset have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo Pollowing mandatory total station accessories must be wided per Total station instrument Aleavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism form form oble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella INo.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
 . 	Uploading/downloading software Data transfer cable Battery (2No) Battery charger Tool kit Two face keyboard User manual uset have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo Efollowing mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(preferably wooden) escopic plumbing prism pole complete with a prism and prism form b. Heavy duty telescopic tripod(preferably mooden) escopic plumbing prism pole complete with a prism and prism form b. Prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No. Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
 . 	Data transfer cable Battery (2No) Battery charger Tool kit Two face keyboard User manual ust have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo et ollowing mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(preferably wooden) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (length not less than 5m) ble prism holder set, in a casing, comprising triple prisms, mis holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
 . 	Data transfer cable Battery (2No) Battery charger Tool kit Two face keyboard User manual ust have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo et ollowing mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(preferably wooden) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (length not less than 5m) ble prism holder set, in a casing, comprising triple prisms, mis holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
 . 	Battery (2No) Battery charger Tool kit Two face keyboard User manual uust have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo e following mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(preferably wooden) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (length not less than 5m) ole prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No. Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
 . 	Battery charger Tool kit Two face keyboard User manual nust have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo cogo color	No. No.	0		
 . 	Tool kit Two face keyboard User manual nust have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo Pollowing mandatory total station accessories must be uded per Total station instrument o. Heavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism ther with target and plumbing bubble (<i>length not less than 5m</i>) ole prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella INo.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
. . 1.02 The incluide (a) 1No. (b) Telesholde (c) Tripl (d) . (e) . Engi	Two face keyboard User manual uust have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo e following mandatory total station accessories must be uded per Total station instrument o. Heavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (length not less than 5m) oble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella INo.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
. . 1.02 The incluide (a) 1No. (b) Teles holde 2.154 (c) Tripl (d) . (e) . Engin . . .	nust have the following inbuilt survey programs as a minimum Survey Staking out Resection/intersection Traverse Cogo columbing mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (<i>length not less than 5m</i>) ble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella INo.Telescopic Tripod gincer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
. 1.02 The inclusion (a) 1No. (b) Teles holdd 2.154 (c) Tripl (d) . Engitized .	Survey Staking out Resection/intersection Traverse Cogo cogo	No. No.	0		
1.02 incluing (a) 1No. (b) Telessholds (b) Triple (c) Triple (d) . (e) . Engitized . . .	Staking out Resection/intersection Traverse Cogo colowing mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (length not less than 5m) ble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
1.02 incluing (a) 1No. (b) Telessholds (b) Triple (c) Triple (d) . (e) . Engitized . . .	Resection/intersection Traverse Cogo e following mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (length not less than 5m) ble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
1.02 incluing (a) 1No. (b) Telessholds (b) Triple (c) Triple (d) . (e) . Engitized . . .	Traverse Cogo c following mandatory total station accessories must be uded per Total station instrument Image: Cogo must be uded per Total station instrument o. Heavy duty telescopic tripod(<i>preferably wooden</i>) Image: Cogo must be used of the prism and prism and prism and prism and prism below the prism and plumbing bubble (<i>length not less than 5m</i>) ole prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
1.02 incluing (a) 1No. (b) Telessholds (b) Triple (c) Triple (d) . (e) . Engitized . . .	e following mandatory total station accessories must be uded per Total station instrument b. Heavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (<i>length not less than</i> 5m) ble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
1.02 incluing (a) 1No. (b) Telessholds (b) Triple (c) Triple (d) . (e) . Engitized . . .	uded per Total station instrument b. Heavy duty telescopic tripod(<i>preferably wooden</i>) escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble (<i>length not less than 5m</i>) bele prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
 (b) Telesholds 2.150 (c) Triplprism (d) (e) (e) Engitripo . 	escopic plumbing prism pole complete with a prism and prism der with target and plumbing bubble <i>(length not less than</i> 5m) ole prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No. No.	0		
 (b) holda (c) Tripl (d) . (e) . Engitripo . 	der with target and plumbing bubble <i>(length not less than 5m)</i> ble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No.			
2.15(c)Tripl prism(d).(e).Engi tripo.	5m) ble prism holder set, in a casing, comprising triple prisms, ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No.			
(c) prisn (d) · (e) · Engi tripo	ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a		0		
(c) prisn (d) · (e) · Engi tripo	ms holder with target, tribrach and a tribrach adaptor Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a		0		
(d) · (e) · Engi tripo	Survey umbrella 1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No.			
(e) · Engi tripo	1No.Telescopic Tripod gineer's Automatic Level Wild NAK 2 or similar with a	No.			
Engi tripo	gineer's Automatic Level Wild NAK 2 or similar with a	'	1		
tripo		No.	0		
· 1.03 · ·	ood and the following specifications				
1.03	Accuracy of 0.7 mm per 1 km double run				
· ·	Standard magnification of: 32x	No.	2		
	Shortest focusing distance of 1.6m				
	Compensator setting accuracy of 0.3"				
Tota	al carried forward to next page				
FEM DES	SCRIPTION	UNIT	QTY	RATE	AMOUNT (KSHS)
Brou	ought Forward				
1.04 Hand	nd held GPS with accuracy of 1 Metre	No.	1		
	of two way radio communication with a range of 1 kilometer	set.	1		
	Leveling staff with leveling bubble I Ranging Rods I	No. No.	4		
	entific Calculators FX 912ms or equivalent	No.	3		
1.09 50m.	n. Linen Measuring Tape	No.	5		
1.1 1 M	stainless steel straight edge	No.	1		
1.11 3 m t	tape measure	No.	10		
1.12 Sledg	lge hammer 2kg weight	No.	2		
1.13 Matt		No.	2		
	gas (16'')	No.	10		
	rker Pens	No.	20		
1.16 Refle	lector Jackets	No.	30		
1.17 Leve	elling Survey Books	No.	100		
		No.	1		
1.19 Prov	vision of Geodetic GNSS receivers comprising of one base and rovers as per the specifications in Appendix D	110.			