

BILL OF QUANTITIES FOR UPGRAADING TO BITUMEN STANDARDS OF KARANJEE LOOP ROADS, ACCESS TO LIMURU GIRLS & LIMURU UNCT EQUITV), ACCESS LOOP TO ST. PAUL'S PRIMARY SCHOOL /MARAMBA TEA FACTORY - KAMWAKI/BATA LOOP - MURENGETI & ACCESS ROADS

BILL NO. 1: PRELIMINARIES AND GENERAL ITEMS					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1.01	Provide or rent accommodation for Engineer's senior and junior staff (i) Type I - 1 No.	Month	36	65,000.00	2,340,000.00
	(ii) Type II - 1 No.	Month	36	55,000.00	1,980,000.00
	(iii) Type III - 1 No.	Month	36	40,000.00	1,440,000.00
	(iv) Type IV - 2 No.	Month	72	30,000.00	2,160,000.00
	(v) Type V - 3 No.	Month	108	21,000.00	2,268,000.00
	Total				10,188,000.00
1.02	E.O item 1.01 for contractor's overhead and profit	%			
1.03	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	LS	1		
1.04	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	LS	1		
1.05	Provide and maintain Laboratory equipment, reagents and other items as priced in Appendix 'A' to the Bill of Materials for use by the Engineer's representative for the duration of the contract, ownership to revert to the Employer at the end of the Contract.	LS	1		
1.06A	Provide and maintain furniture, tools and other items for the Engineers Representative office for the duration of the Contract as priced in Appendix 'B', ownership to revert to the Employer at the end of Contract.	LS	1		
1.06B	Provide and maintain survey equipment as priced in Appendix C for the duration of the contract, ownership to revert to the Employer at the end of Contract.	LS	1		
1.07	Provide with drivers, fuel and maintain Two (2) new 4WD fully loaded Station Wagon of minimum diesel engine capacity 2800 CC 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.	Ve'h Month	36		
1.08	E.O item 1.07 for total aggregated mileage in excess of 5000 km per vehicle month.	Km	50,000		
1.09	Provide with drivers, fuel and maintain one (1) new 4WD fully loaded double cabin pick-up of minimum diesel engine capacity 2500 CC 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.	Ve'h Month	36		
1.10	E.O item 1.09 for total aggregated mileage in excess of 5000 km per vehicle month.	Km	50,000		
1.11	Ditto item 1.09, but one (1) new 4WD standard double cabin pick-up of minimum diesel engine capacity 2500 CC 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.	Ve'h Month	72		
1.12	E.O item 1.11 for total aggregated mileage in excess of 5000 km per vehicle per month.	Km	50,000		
1.13	Ditto item 1.09, but one (1) new 4WD Single cabin pick-ups with fibre glass body of minimum diesel engine capacity 2500cc 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.	Ve'h Month	36		
1.14	E.O item 1.13 for total aggregated mileage in excess of 5000 km per vehicle per month.	Km	50,000		
1.15	Allow a Prime Cost Sum of KShs. 7,500,000.00 for the RE's miscellaneous account to be spent in whole or part as directed by the RE against receipts.	PC Sum	1		
1.16	E.O. item 1.15 for Contractor's overheads and profits.	%			
1.17	Allow for Prime Cost Sum of KShs. 13,500,000.00 for attendance upon the Resident Engineer' staff.	PC Sum	1		
1.18	E.O. item 1.17 for Contractor's overheads and profits.	%			
1.19	Provide, erect and maintain publicity signs as directed by the Engineer.	No	24		
1.20	Allow for lumpsum for Engineer's training	PC Sum	0		
	Bill No. 1 Total Carried Forward to Grand Summary				10,188,000.00

BILL NO. 4 : SITE CLEARANCE AND TOP SOIL STRIPPING					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<i>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</i>				
4.01	Clear site on road reserve including removal of all growths, bushes,hedges, trees, stumps, 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.	Ha.	33		
4.02	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 on stock pile for re-use as directed by the Engineer.	m³	64,800		
4.03	Provide KShs. 7,000,000.00 for the removal of structures and obstructions as instructed by the Engineer to be paid on dayworks basis	Prov. Sum	1		
	Bill No. 4 Total Carried Forward to Grand Summary				0.00

BILL NO. 5 : EARTHWORKS					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<i>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</i>				
5.01	Fill in soft material including benching of shoulders and embankments and compaction to 95% MDD (AASHTO T99) in layers not exceeding 150mm	m³	84,000		
5.02	Extra Over Item 5.01 for compaction of the top 300 subgrade to 100% MDD.	m³	59,400		
5.03	Ditto item 5.01 but in hard material	m³	48,000		
5.04	Cut to spoil in soft material	m³	84,000		
5.05	Ditto item 5.04 but in hard material	m³	10,000		
5.06	Provide improved subgrade material as instructed by the Engineer and compaction to 100% MDD (AASHTO T99)	m³	44,100		
5.07	Compaction of top 300mm below formation level in cuts to 100% MDD (AASHTO T99)	m²	25,000		
5.08	Compaction of 150mm original ground below fills to 95% MDD (AASHTO T99)	m²	13,000		
5.09	Top-soiling prior to planting grass as directed by the Engineer	m²	47,000		
5.10	Grassing as directed by the Engineer	m²	47,000		
5.11	Provide Rock Fill to swampy areas as directed by Engineer	m³	0		
5.12	Provide Filter fabric to swampy under, over and around rock fill	m²	0		
5.13	Provide and install geogrids	m²	0		
	Bill No. 5 Total Carried Forward to Grand Summary				0.00

BILL NO. 7 : EXCAVATION AND FILLING OF STRUCTURES					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<i>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</i>				
7.01	Excavate to spoil in soft materials.	m³	9,900		
7.02	As item 7.01 but in hard material	m³	990		
7.03	Provide,place and compact rockfill below and around structures.	m³	10,000		
7.04	Provide and place 150mm thick stone pitching as directed by the Engineer including cement grouting	m²	17,000		
7.05	Excavate for gabions in soft material.	m³	240		
7.06	Provide and place gabion boxes and mattresses where directed by the Engineer.	m²	1,100		
7.07	Rockfill to gabions	m³	200		
7.08	Filter fabric behind gabion boxes and structures	m³	200		
7.09	Provide and backfill approved material around new structures, compact 100% MDD (AASHTO T99) in layers not exceeding 150mm.	m³	2,000		
7.10	Allow for protection of structures pursuant to Section 708 of the specifications	LS	1		
7.11	Allow for river training in soft material	m³	0		
7.12	Allow for river diversion	m³	0		
7.13	Provide coffer dams as directed by the Engineer.	LS	0		
	Bill No. 7 Total Carried Forward to Grand Summary				0.00

BILL NO. 8. CULVERTS AND DRAINAGE WORKS					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<i>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</i>				
8.01	Excavate for inlet, outfall,lintre and catch water drains in soft material	m³	3,000		
8.02	As per item 8.01, but for hard material	m³	300		
8.03	Excavation in soft material for pipe culverts,headwalls, wingwalls, apron,towalls, and drop inlets and compact as directed by the Engineer	m³	500		
8.04	As per item 8.03, but for hard material	m³	50		
8.05	Provide,jay and joint 600mm dia. concrete pipes (precast to BS 5911 Parts 1 & 3) for access roads	m	2300		
8.06	As per item 8.05 but 900mm dia concrete pipes (precast to BS 5911 parts 1 & 3) for cross culverts	m	180		
8.07	As for item 8.05 but 1200mm dia concrete pipes (precast to BS 5911 parts 1 & 3)for cross culverts	m	20		
8.08	Provide and place class 15/20 concrete to beds, surround and haunches	m³	1,480		
8.09	Provide, place and compact class 25(20) concrete for headwalls, wingwalls, aprons, and towalls to access and cross pipe culverts including all form work and the provision and placing of reinforcement as shown in the drawings	m³	1,000		
8.10	Provide and place invert block drains with two course side slabs	m	1,850		
8.11	Construct in concrete class 15(20) side drains scour checks as instructed	m³	50		
8.12	Provide and place precast concrete slabs 600mm x 600mm x 100mm and place over open lined drains in trade centres and markets (reinforced with A142 wire mesh reinforcement)	No.	0		
8.13	Provide subsoil filter drains fabric to isolated wet spots inclusive of artesian cloth, and 14/20mm single size aggregates as directed by the Engineer	m	0		
8.14	Remove existing pipe culverts of any diameter either for re-use or to be discarded as directed by the Engineer	m	500		
8.15	Provide and place A142 wire mesh reinforcement	m²	0		
8.15	Provide,jay and joint ducts and sleeves including 150mm concrete (C15/20 (insert size in mm) heavy duty PVC class B with 150mm surround (precast to BS 5911 Parts 1 & 3) ducts/sleeves	m	0		
	Bill No. 8 Total Carried Forward to Grand Summary				-

BILL NO. 9: PASSAGE OF TRAFFIC					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	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				
9.01	Construct and maintain diversions in maximum length of 5km sections as directed by the Engineer, including 150mm wearing course graded all signage, lightings and barriers	Km	27		
9.02	Grade, water and compact existing road; provide, spread, water and compact gravel as directed by the Engineer for maintenance ahead of works.	Km	81		
9.03	Allow for the passage of traffic through and around the works	LS	1		
	Bill No. 9 Total Carried Forward to Grand Summary				-

BILL NO. 10: GRADING AND GRAVELLING WORKS					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<i>Note: No separate payments shall be made for gravel for blinding or hauling and the cost of such shall be included in the rates and prices</i>				
10.01	Provide gravel wearing course, spread and compact to a finished thickness of 150mm to at least 95% M.D.D (AASHTO T-180) and shape to level and tolerance.	m³	23,400		
	Bill No. 10 Total Carried Forward to Grand Summary				-

BILL NO. 13 : GRADED CRUSHED STONES AND HAND PACKED STONES FOR SUBBASE AND BASE					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
13.01	Provide, Lay, spread and compact Crushed Soft Stone/Gravel for Sub-base as per Drawings and Specifications	m³	24,150		
13.02	Provide, Lay, spread and compact Graded Crushed Stone for base as per Drawings and Specifications	m³	21,735		
13.03	Provide, hand pack stones, apply granular material and compact the layer to refusal as directed by the Engineer. The excess granular material shall be thoroughly svent.	m³	0		
	Bill No. 13 Total Carried Forward to Grand Summary				0.00

BILL NO. 15: BITUMINOUS SURFACE TREATMENT & SURFACE DRESSING TO SHOULDERS					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
15.01	Prepare surface of carriageway and shoulders, provide, heat and spray MC 30 cutback bitumen prime coat at 0.8-1.2 Litres/m2.	Litres	148,000		
15.02	Prepare surface of carriageway and shoulders, provide, heat and spray 80/100 bitumen seal coat as first seal at a rate of 1-1.2 Litres/m2.	Litres	0		
15.03	Provide, spread and roll 14/20mm precoatd chippings	m²	0		
15.04	Prepare surface of carriageway and shoulders, provide, heat and spray 80/100 bitumen seal coat as second seal at a rate of 0.8-1.0 Litres/m2.	Litres	0		
15.05	Provide, spread and roll 10/14mm precoatd chippings	m²	0		
15.06	Prepare surface of carriageway and shoulders, provide, heat and spray 80/100 bitumen seal coat as third seal at a rate of 0.6-0.8 Litres/m2.	Litres	0		
15.07	Provide, spread and roll 6/10mm precoatd chippings	m²	0		
15.08	Provide & spray K1-60 as tack coat on carriageway, shoulders and on rumble strips at a rate of 0.5-0.8 l/m²	Litres	89,600		
	Bill No. 15 Total Carried Forward to Grand Summary				0.00

BILL NO. 16: BITUMINOUS MIXES					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
16.01	Provide, place and compact Asphalt Concrete Type II to a thickness of 35 mm on carriageway and bus bays as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	m³	4,508		
16.02	Provide, place and compact Asphalt Concrete Type II to a thickness of (insert layer thickness) mm on shoulders as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	m³	N/A		
16.03	Provide, place and compact Asphalt Concrete Type I (014) to a thickness of (insert layer thickness) mm on carriageway and bus bays as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	m³	N/A		
16.04	Provide, place and compact Asphalt Concrete Type I (014) to a thickness of (insert layer thickness) mm on shoulders as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	m³	N/A		
16.05	Provide, place and compact Asphalt Concrete Type I (020)/SUPER PAVE to a thickness of (insert layer thickness) mm on shoulders as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	m³	N/A		
16.06	Provide, place and compact Asphalt Concrete Type I (014) for bumps and rumble strips as directed by the Engineer at Bitumen Content of 5.5 - 7.0% by weight of total mix.	m³	0		
	Dense Bitumen Macadam				
16.09	Provide, lay and compact to a thickness of (insert thickness) mm DBM Base Course on main carriageway, bus bays, & shoulders; all in accordance with the specifications and as directed by the Engineer.	m³	N/A	N/A	
	Bill No. 16 Total Carried Forward to Grand Summary				0.00

BILL NO. 20: ROAD FURNITURE					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
20.01	Provide Road Reserve Boundary posts	No.	216		
20.02	Excavate for, provide & place 250 x 125mm precast concrete raised or ramped kerbs hunched 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 b) Kerbs radius 12m - 6m c) Ditto but radius 5m - 6m	m m m	3,000 500 300		
20.03	As 20.02 but for flush kerbs 100 x 125mm	m	3,000		
20.04	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 b) Priority prohibitory and mandatory signs c) Standard informatory signs d) Non standard informatory signs area	No. No. No. No.	20 20 20 5		
	i) More than 1.0m² but less than 5m²	No.	5		
20.05	Provide, deliver, paint and mark the road as specified or as directed by the Engineer, with white reflectorized thermoplastic paint from an approved supplier.	m²	3,080		
20.06	As item 20.05 but for yellow reflectorized thermoplastic paint	m²	1,540		
20.07	Provide and erect concrete posts for guardrails complete with spacers (size and interval) as per specifications or as directed by the Engineer	m	100		
20.08	Provide and erect flex-beam guardrails complete with connections as shown on the drawings or as directed by the Engineer	No.	100		
20.09	Provide Edge marker posts	No.	20		
20.10	Provide kilometre marker posts as directed by the Engineer	No.	54		
20.11	Installation of fencing	m	0		
20.12	Installation of gates	No.	0		
20.13	Construction of speed bumps with Concrete as directed by engineer	m³	0		
20.14	Provide and install cat-eyes as directed by the Engineer	No.	0		
20.15	Provide, plant, and nurture tree seedlings for a period not less than half the construction period of the project or as directed by the Engineer.	No.	0		
20.16	Provide and install new guard rails as directed by the Engineer.	m	0		
20.17	Provide and install new guard rail posts including anchor bolts and nuts as directed by the Engineer.	m	0		
20.18	Provide and install new hand rails as directed by the Engineer.	m	0		
					0.00

BILL NO. 22: SCHEDULE OF DAYWORKS					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PLANT				
	<i>The rates inserted herein are to include all operational and Maintenance costs, fuel, oil, grease,...</i>				
22.01	Crawler dozers with hydraulic attachments to include ripper	hrs	10		
22.02	Supply, install and connect core 135 kw rated flywheel power	hrs	4		
22.02	Motor Grader	hrs	5		
	a) Up to 110kw rated flywheel power	hrs	5		
22.03	Vibratory Roller	hrs	5		
	a) 6.5 - 8.81 tonne un-ballasted weight	hr	5		
	b) Over 8.91 tonne un-ballasted weight	hr	5		
22.04	Hand propelled vibrating roller 650 - 1300kg	hrs	5		
22.05	Cat 950G wheel loader or equivalent	hrs	5		
22.06	10 Tonne tipper lorry	hrs	5		
22.07	Small graders, 750-1000kg rated payload	hrs	5		
22.08	Dual purpose hydraulic excavator with backhoe/loader and a rated bucket capacity of upto 1m3.	hrs	5		
22.09	Articulated wheel loader with 1.5-2.0m³ SAE rated bucket capacity	hrs	5		
22.10	50mm delivery water pump and motor	hrs	5		
22.11	Self propelled water tanker 4,500ls min. capacity with pick-up pump	hrs	5		
22.12	Concrete Mixer of 100 - 150litres	hrs	5		
22.13	Concrete paker vibrator	hrs	5		
	LABOUR				
	<i>The rates inserted herein are to include all costs of labour such as insurance, accommodation, travelling time, overtime, use and maintenance of small tools of trade,Only the actual time engaged upon the work will be</i>				
22.14	Unskilled Labour	hrs	10		
22.15	Artisans	hrs	10		
22.16	Office attendants and chairmen	hrs	10		
22.17	Watchmen (all round surveillance)	hrs	10		
	TOTAL CARRIED FORWARD TO THE NEXT PAGE				-

CONTRACT NO.: RWC 684B
GRAND SUMMARY OF BILL OF QUANTITIES UPGRADING TO BITUMEN STANDARDS OF
KARANJEE LOOP ROADS, ACCESS TO LIMURU GIRLS & LIMURU (JNCT EQUITY), ACCESS
LOOP TO ST. PAUL'S PRIMARY SCHOOL / MARAMBA TEA FACTORY - KAMWAKI/BATA LOOP -

BILL 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	
10	Grading and Gravelling Works	
13	Graded Crushed Stone and Handpacked Stone for Subbase and Base	
15	Bituminous Surface Treatment and Surface Dressing	
16	Bituminous Mixes	
20	Road Furniture	
22	Schedule of Dayworks.	
25	HIV/AIDS, Gender & Social Issues, Local Participation	
26	Relocation of Services and Land Aquisition	
(A)	SUB-TOTAL (1)	
(B)	Add 15% VARIATION OF PRICE of sub total (1)	
(C)	Add 5% CONTIGENCIES of sub total (1)	
(D)	SUB-TOTAL (2) = (A + B + C)	
(E)	Add 0.03% For PPCBL of sub total (1)	
(F)	Add ...16% VAT of sub-total (2)	
TOTAL (D+ E)		