

**ANNEX 2 : BILLS OF QUANTITIES**  
**(NB: All Unit Rates should be VAT exclusive,  
calculate the VAT in the summary page)**

BILLS OF QUANTITIES					
IMPROVEMENT OF RADS TO BITUMEN STANDARDS WITHIN NAIVASHA MUNICIPALITY( 4.6 KM ). (INDUSTRIAL AREA , SITE AND SERVICE AND KABATI )					
BILL NO 1: PRELIMINARIES AND GENERAL ITEMS					
BILL ITEM	DESCRIPTION	UNIT	PLANNED CONTRACT QUANTITY	UNIT BID RATE(KShs)	PLANNED CONTRACT AMOUNT(KShs)
1.01	Allow a prime cost sum of Ksh 500000 for rent and maintenance of Engineer's representative's office as shown on the drawings or as instructed by the engineer for use during the duration of the contract.	PC Sum	1.00	500,000.00	500,000.00
1.02	E.O item 1.01 for contractor's overhead and profit	%			
1.03	Allow a prime cost sum of Ksh 2000000 for material testing and other laboratory services	PC Sum	1.00	2,000,000	2,000,000.00
1.04	E.O Item 1.03 for Contractor's overheads and profits	%			
	allow provisional sum of ksh 10000000 for street lighting	PC Sum	1.00	10,000,000	10,000,000.00
1.05	Allow a prime cost sum of Ksh 200000 for provision and maintenance of furniture, tools and other items for Engineer's representative offices as instructed by the Engineer for the duration of the contract	PC Sum	1.00	200,000.00	200,000.00
1.06	E.O Item 1.05 for the Contractor's overheads and profits	%			
1.07	Allow a prime cost sum of Ksh 300000 for provision and maintain survey equipment as instructed for the duration of the contract	PC Sum	1.00	300,000.00	300,000.00
1.08	E.O Item 1.07 for the Contractor's overheads and profits	%			
1.11	Proure deliver a supervision vehicle a new 4WD standard double cabin pick-ups of minimum diesel engine capacity 2500 -3000cc approved for the exclusive use of the Resident Engineer inclusive of the first 4000 km per vehicle month. Vehicles to revert back to the contractor at the end of the project.	V.mth	1.00	5,000,000.00	5,000,000.00

1.15	Allow a Prime Cost Sum of Ksh.3,000,000 for the RE,s miscellaneous account to be spent in whole or part as directed bythe RE against receipts	PC Sum	1.00	3,000,000.00	3,000,000.00
1.16	E.O item 1.15 for Contractor's overheads and profits	% of item			
1.17	Allow a Prime Cost Sum of Ksh. 2000,000 for attendance upon the Resident Engineer's staff	PC Sum	1.00	2,000,000.00	2,000,000.00
1.18	E.O item 1.17 for Contractor's overheads and profits	% of item			
1.19	Provide, erect and maintain publicity signs as directed by the Engineer	No	2.00		
	<b>BILL NO 1. Forward to Bill No.1 Summary</b>				

**BILL NO. 4 : SITE CLEARANCE AND TOP SOIL STRIPPING**

<b>4.01</b>	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.	5.00		
<b>4.02</b>	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	m <sup>3</sup>	20000.00		
<b>4.03</b>	Provide Ksh. 300000.00 for the removal of structures and obstructions to be paid on a dayworks basis	PC Sum	300000.00	1.00	300,000.00
<b>4.04</b>	E.O item 4.03 for Contractor's overheads and profits	%	1		
<b>Total Carried Forward to Grand Summary</b>					

<b>BILL NO 5: EARTHWORKS</b>					
5.01	Fill in soft material including benching of embankment and compact to at least 95% MDD (AASHTO T.99) in layers not exceeding 150mm	m <sup>3</sup>	1,760.00		
5.02	Ditto item 5.01 but in hard material	m <sup>3</sup>	300.00		
5.03	Cut to spoil in soft material	m <sup>3</sup>	3,000.00		
5.04	Ditto item 5.03 but in hard material.	m <sup>3</sup>	260.00		
5.05	Provide improved sub-grade material to a thickness of 100 mm compaction to 100% MDD (AASHTO T99)	m <sup>3</sup>	5,500.00		
5.06	Compaction of top 150mm below formation level in cuts to 100% MDD (AASHTO T99)	m <sup>3</sup>	4,000.00		
5.07	Compaction of original ground below fills to 95% MDD (AASHTO T99) 150mm thick	m <sup>3</sup>	2,000.00		
<b>TOTAL BILL NO 5 CARRIED TO SUMMARY</b>					

**BILL NO.7 EXCAVATION AND FILLING FOR STRUCTURES**

<b>7.01</b>	Excavate to spoil in soft material	m <sup>3</sup>	400.00		
<b>7.02</b>	As in 7.01 but in hard material	m <sup>3</sup>	100.00		
<b>7.03</b>	Provide, place and compact rockfill below structures	m <sup>3</sup>	200.00		
<b>7.04</b>	Provide and place 150mm thick stone pitching as directed by the Engineer	m <sup>2</sup>	15,600.00		
<b>7.05</b>	E.O item for cement grouting	m <sup>2</sup>			
<b>7.10</b>	Provide and backfill approved material around new box culverts/ bridges, compact 100% MDD (AASHTO T99) in layers not exceeding 150mm	m <sup>3</sup>	200.00		
<b>TOTAL BILL NO. 7 TO SUMMARY PAGE</b>					

**BILL NO.8 CULVERTS AND DRAINAGE WORKS**

Note: No separate payments shall be made for gravel for blinding or hauling to spoil unsuitable excavation materials and cost of such shall be included in the rates and prices

<b>8.03</b>	Excavate in soft material for pipe culverts, headwalls, wingwalls, apron, toewalls and drop inlets and compact as directed by the Engineer	m <sup>3</sup>	880.00		
<b>8.04</b>	As per item 8.03 but for hard material	m <sup>3</sup>	50.00		
<b>8.05</b>	Provide, lay and joint 600mm dia. Concrete pipes (precast to BS 5911 Parts 1 & 3) for access roads	m	600.00		
<b>8.06</b>	As for item 8.03 but 900mm dia. Concrete pipes (precast BS 5911 parts 1 & 3) for cross culverts	m	160.00		
<b>8.07</b>	Provide and place class 15/20 concrete to beds, surround and haunches	m <sup>3</sup>	600.00		
<b>8.08</b>	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 placing of reinforcement as shown in the drawings	m <sup>3</sup>	80.00		
<b>8.11</b>	Provide and place precast concrete slabs 600mm x 600mm x 50mm and place over open lined drains in trade centres and markets	No	520.00		
<b>TOTAL BILL NO. 8 TO SUMMARY PAGE</b>					

**BILL NO 9: PASSAGE OF TRAFFIC**

**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**

<b>9.03</b>	Allow for passage of traffic through and around the works	Lump Sum	1.00	1,000,000.00	1,000,000.00
<b>9.04</b>	Grade, water and compact existing road ahead of works.	m <sup>2</sup>	32,640.00		
<b>9.05</b>	Reinstatement of deviations to original		8,000.00		
<b>TOTAL BILL NO 9 CARRIED TO SUMMARY</b>					



**BILL NO 12: NATURAL MATERIAL FOR SUB BASE AND BASE**

**NOTE: No overhaul will be paid for these items as they shall be deemed to have been included in the Contractor's rates.**

<b>12.01</b>	Provide gravel Sub-base material, haul, spread, compact at least 100% M.D.D. (AASHTO T-180) and shape to level and tolerance	m <sup>3</sup>	6,500.00		
<b>TOTAL BILL NO. 12 CARRIED TO SUMMARY</b>					

**BILL 13. GRADED CRUSHED STONE SUBBASE AND BASE**

**NOTE: No overhaul will be paid for these items as they shall be deemed to have been included in the Contractor's rates.**

<b>13.01</b>	Provide, place, process and compact graded crushed stone for base ( 125 mm THK) as per the Engineer's Specifications	m <sup>3</sup>	3,800.00		
<b>TOTAL BILL NO. 13 CARRIED TO SUMMARY</b>					

**BILL NO 14: CEMENT AND LIME TREATMENT**

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

<b>14.01</b>	Provide and spread cement as an improvement agent for base	Ton.	250.00		
<b>14.03</b>	Curing of cement treated base and sub-base layers	m <sup>3</sup>	3,000.00		
	<b>TOTAL BILL NO 14 CARRIED TO SUMMARY</b>				

**BILL NO 15: BITUMINOUS SURFACE TREATMENTS AND SURFACE DRESSING**

NOTE: No overhaul will be paid for bitumen and chippings as these shall be deemed to have been included in the rates.

<b>15.01</b>	Prepare surface of road base and shoulders, provide, heat and spray MC 30 cutback bitumen prime coat at 0.8-1.2 litres/m <sup>2</sup>	Litres	37,000.00		
<b>15.02</b>	Provide & spray K1-60 as tack coat on carriageway, rate of 0.5 - 0.8 l/m <sup>2</sup>	Litres	37,000.00		
	<b>TOTAL BILL NO 15 CARRIED TO SUMMARY</b>				

**BILL NO 16: BITUMINOUS MIXES**

<b>16.02</b>	Prepare surfaces, provide, mix, lay and compact 50 mm Asphaltic Concrete (AC) type II as wearing course on base with bitumen and 0/20 mm aggregates on prepared surface	m <sup>3</sup>	1,900.00		
<b>TOTAL BILL NO 16 CARRIED TO SUMMARY</b>					

<b>BILL NO.17 -BRIDGES AND BOX CULVERTS</b>					
	<b>Concrete:</b>				
17.01	Provide, place and compact Class 15(20) concrete blinding as instructed by the Engineer	m <sup>3</sup>	3.00		
17.02	Provide, place and compact concrete class 25(20) to base of wingwall,abutments,main beams,cross beams,deck and approach slabs as shown in drawings	m <sup>3</sup>	9.00		
<b>Reinforcement: <i>Provide, cut, bend &amp; fix intoposition steel reinforcement as shown in the drawings or as instructed by the Engineer</i></b>					
17.03	High yield reinforcement steel bars to BS 4461 equal to or less than 16mm diameter bar size	KG	900.00		
17.04	High yield bond strength reinforcement steel bars to BS 4461 greater than 16mm diameter bar size	KG	900.00		
<b>Formwork: <i>Provide, erect and afterwards dismantle and remove all the formwork as specified by the Engineer</i></b>					
17.05	Provide & fix in place vertical formwork to achieve class F1 finish	m <sup>2</sup>	200.00		
17.06	As item 17.05 but horizontal	m <sup>2</sup>	160.00		
17.08	Vertical formwork to achieve class F3 finish	m <sup>2</sup>	40.00		
<b>TOTAL BILL NO. 17 CARRIED TO SUMMARY</b>					

<b>BILL NO 20: ROAD FURNITURE</b>					
<b>20.02</b>	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	m	3,700.00		
	b) Kerbs radius 12m - 6m	m	80.00		
	c) Ditto but radius 5m - 1m	m	30.00		
<b>20.03</b>	As 20.02 but for flush kerbs 100 x125mm	m	3,400.00		
<b>20.04</b>	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	No.	10.00		
	b) Proirity prohibitory and mandatory signs	No.	4.00		
	c) Standard infromatory signs	No.	4.00		
<b>20.05</b>	Provide,deliver,paint and mark the road as specified or as directed by the Engineer, with white reflectionized thermoplastic paint from an approved supplier	m2	1,050.00		
<b>20.06</b>	As Item 20.05 but for yellow reflectionized thermoplastic paint	m2	520.00		
<b>20.07</b>	Provide and erect concrete posts for guardrails complete with spacers (size and interval) as per specifications or as directed by the Engineer.	No.	30.00		
<b>TOTAL BILL NO. 20 CARRIED TO SUMMARY</b>					

**BILL NO.21 - MISCELLANEOUS BRIDGE WORKS**

<b>21.01</b>	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	m <sup>2</sup>	240.00		
<b>21.09</b>	Provide and place into position handrails along the edge of the carriageway as per drawings and as instructed by the engineer	m	40.00		
<b>21.14</b>	Provide and place as directed by the Engineer PVC pipes of diameter 75 mm and length 300 mm to form storm drain pipes of bridge deck	No	20.00		
<b>TOTAL BILL NO. 21 TO SUMMARY PAGE</b>					



**BILL NO 22: DAYWORKS**

<b>PLANT:</b>					
	The rates inserted herein are to include all operational and maintenance costs, fuels, oil, grease, drivers/operators wages, supervision,overheads and profits. Only time actually employed upon the works 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.				
<b>22.01</b>	Crawler dozer with hydraulic attachments to include ripper				
	a) Up to 135kw rated flywheel power	Hrs.			
	b) Over 136kw rated flywheel power hrs 5	Hrs.			
<b>22.02</b>	Motor Grader				
	a) Up to 110 kw rated flywheelpower	Hrs.			
	b) Over 100kw rated flywheel power	Hrs.			
<b>22.03</b>	Vibratory Roller				
	a) 6.5-8.81 tonne un-ballasted weight	Hrs.			
	b)Over 8.91 tonne un-ballasted weight	Hrs.			
<b>22.04</b>	Hand propelled vibrating roller 650-1300kg	Hrs.			
<b>22.05</b>	Cat 950G wheel loader or equivalent	Hrs.			
<b>22.06</b>	10 Tonne tipper lorry	Hrs.			
<b>22.07</b>	Small dumpers, 750-1000kg rated payload	Hrs.			
<b>22.08</b>	Dual purpose hydraulic excavator with backhoe/loader and a rated bucket capacity of upto 1m <sup>3</sup>	Hrs.			
<b>22.09</b>	Articulated wheel loader with 1.5-2.0m <sup>3</sup> SAE rated bucket capacity	Hrs.			
<b>22.10</b>	50mm delivery water pump and motor	Hrs.			
<b>22.11</b>	Self propelled water tanker 4500l/min. capacity with pick-up pump	Hrs.			
<b>22.12</b>	Concrete Mixer of 100-150 litres	Hrs.			
<b>22.13</b>	Concrete poker vibrator.	Hrs.			
	LABOUR:				

	<b>The rates inserted herein are all to include all costs of labour such as insurance,accomodation,travelling time,over-time,use and maintenance of small tools of trade,supervision,overheads and profit. Only the actual time engaged uponthe work will be paid for</b>				
22.14	Unskilled labour	Hrs.			
22.15	Artisans	Hrs.			
22.16	Office attendants and chainmen	Hrs.			
22.17	Watchmen (all round surveillance)	Hrs.			
	<b>MATERIALS</b>				
	<b>All materials to comply with the specifications. The rates inserted herein are to include for delivery to site, storage, handling,overheads and profit</b>				
22.18	Ordinary Portland Cement.	Ton.			
22.19	Hydrated lime	Ton.			
22.20	Mild Steel (any diameter)	Ton.			
22.21	High Yield Steel (any diameter)	Ton.			
22.22	Fine Aggregate for Concrete	m <sup>3</sup>			
22.23	Coarse Aggregate for Concrete	m <sup>3</sup>			
22.24	Wrot Shuttering Timber	m <sup>2</sup>			
22.25	Rough Shuttering Timber	m <sup>2</sup>			
22.26	Bitumen Emulsion K1-60	Litre			
22.27	Straight run bitumen Grade 80/100	Litre			
22.28	Kerosene	Litre			
22.29	14/20mm nominal size surface chips.	m <sup>3</sup>			
22.30	6/10mm nominal size surface chips.	m <sup>3</sup>			
22.31	AC Type II Ex plant	m <sup>3</sup>			
<b>TOTAL BILL NO 22 CARRIED TO SUMMARY</b>					

<b>BILL NO 25: ENVIRONMENTAL MITIGATION MEASURES &amp; HIV AIDS CAMPAIGN</b>					
<b>25.01</b>	Allow for a Prime Cost Sum of Ksh. 500000 monitoring of Environmental Mitigation Measures as directed by the Engineer	PC Sum	1.00	500,000.00	500,000.00
<b>25.02</b>	E.O item 25.01 for Contractor's overheads and profit	%			
<b>25.03</b>	Implement HIV/AIDS awareness campaign amongst the workers for the duration months 24 of the contract	Months			
<b>25.04</b>	Allow for the availability of condoms to workers and staff for the duration of 24 months of the contract	Months			
<b>25.05</b>	Allow for the engagement of specialist HIV/AIDS sub-contractor to deal with prevention and awareness activities as pr program to be approved by the R.E	Months			
<b>25.06</b>	Allow for preparation and submission of monthly reports on HIV/AIDS awareness and prevention activities. Reports to be tabled at site meetings	Months			
<b>TOTAL BILL NO 25 CARRIED TO SUMMARY</b>					

## SUMMARY

	TOTAL BILL 1			
	TOTAL BILL 4			
	TOTAL BILL 5			
	TOTAL BILL 7			
	TOTAL BILL 8			
	TOTAL BILL 9			
	TOTAL BILL 12			
	TOTAL BILL 13			
	TOTAL BILL 14			
	TOTAL BILL 15			
	TOTAL BILL 16			
	TOTAL BILL 17			
	TOTAL BILL 20			
	TOTAL BILL 21			
	TOTAL BILL 25			
<b>SUBTOTAL A</b>				
<b>ADD 5% CONTIGENCIES ( to be expended On engineer instruction )</b>				
<b>SUB TOTAL B</b>				
16% VAT				
SUBTOTAL C				
<b>GRAND TOTAL</b>				

**Contractor.....Signature.....**

**Official Stamp.....**

