

**REVISED BILL OF QUANTITIES FOR UPGRADING OF TABORA - KOGA - MPANDA  
ROAD TO BITUMEN STANDARD, LOT 1: USESULA – KOMANGA SECTION (108 KM),  
SIKONGE SPUR (2.21 KM) & SIKONGE TOWN SECTION (7.36 KM), TENDER NO.  
AE/001/2015-16/HQ/W/51- OPTION B**

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO. 1: GENERAL**

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>General Requirements and Provisions</b>				
<b>12.01</b>	<b>Land Acquisition</b>				
(a)	Arrange and pay compensation for acquisition of land for borrow pits, quarries and facilities for the Engineer and Contractor	P.S.	---		3,000,000,000
(b)	Allow for Contractor's overhead & profits as a percentage of Subitem 12.01 (a)	%	---		
SS 12.01(c)	Provision for drilling water supply bore holes, pumps storage tanks, etc.	No.	6		
<b>12.02</b>	<b>Relocation of services</b>				
(a)	Arrange and pay for acquisition of land for removal and/or alteration to services provided by agencies for electricity supply, water supply or telecommunication Services.	P.S.	---		600,000,000
(b)	Allow for Contractor's overheads & profits as a percentage of Subitem 12.02(a)	%	---		
<b>SS 12.03</b>	<b>Provision of 'as-built' drawings:</b>				
(a)	Draft 'as-built' drawings:	L.S.	---		
(b)	Final 'as-built' drawings:	L.S.	---		
<b>SS 12.05</b>	<b>Disputes Board (DB)</b>				
(a)	Provision sum to cover Employer's obligation to pay DB	P.S.			500,000,000
(b)	Allow for Contractor's overheads & profits as a percentage of Subitem 12.05(a)	%			
<b>13.01</b>	<b>Contractor's Establishment on Site and General Obligations</b>				
(a)	Sureties	L.S.	---		
(b)	Insurance of Works	L.S.	---		
(c)	Insurance of Construction Plant & Equipment	L.S.	---		
(d)	Third Party Insurance	L.S.	---		
SS 13.02 ('c)	Road project sign Board	No	3		
	<b>Engineer's Accommodation and Attendance upon the Engineer</b>				
	<i>Note: The ownership of all houses, office, laboratory including all furniture, equipment and services as well as vehicles and survey equipment provided under Items 14.01 through 14.09 shall revert to the Employer upon completion of the Contract</i>				
<b>14.01</b>	<b>Houses for the Engineer</b>				
(a)	Provide Type I house fully furnished and equipped for the Engineer (2no.)	L.S.	---		
(b)	Provide Type II house fully furnished and equipped for the Engineer (4no.)	L.S.	---		
(c)	Provide Type III house fully furnished & equipped for the Engineer (3 nos.)	L.S.	---		
(d)	Provide multiple accommodation units fully furnished and equipped for the Engineer ( 2 blocks of 4 units)	L.S.	---		
(e)	Provide fully furnished and equipped temporary accommodation and offices for the Engineer	L.S.	---		
(f)	Maintain and pay all rents and municipal services for Type I house fully furnished and equipped for the Engineer	no. x month	66		
(g)	Maintain and pay all rents and municipal services for Type II house fully furnished and equipped for the Engineer	no. x month	132		
(h)	Maintain and pay all rents and municipal services for Type III house fully furnished and equipped for the Engineer	no. x month	99		
(i)	Maintain equipped and pay all rents and municipal services for multiple accommodation unit blocks fully furnished and equipped	no. x month	66		
(j)	Maintain and pay all rents and municipal services for fully furnished and equipped temporary accommodations and offices for the Engineer	Months	3		
	<b>Carry forward</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO. 1: GENERAL**

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Brought forward</b>	---	---		
<b>14.02</b>	<b>Offices for the Engineer</b>				
(a)	Provide fully furnished and equipped offices for the Engineer	L.S.	---		
(b)	Maintain and pay all rents and municipal services for fully furnished and equipped offices for the Engineer	no. x month	33		
SS.14.02(c)	Provide Airtime for Twelve (12) nos mobile phones for the engineer's office	PS			64,800,000
(d)	Allow for Contractor's overhead & profits as a percentage of Subitem SS.14.02(c)	%			
<b>14.03</b>	<b>Wash house for the Engineer</b>				
(a)	Provide fully furnished and equipped wash house for the Engineer	L.S.	---		
(b)	Maintain and pay all rents and municipal services for fully furnished and equipped wash house for the Engineer	no. x month	36		
<b>14.05</b>	<b>FWD Station Wagon for the Engineer</b>				
(a)	Provide Three (3) vehicles for the Engineer	L.S.	---		
(b)	Operate and maintain vehicles for an average of 4500 km per month	veh.x mth	108		
(c)	Operate and maintain vehicles for travel distance in excess of average 4500 km per month	km	108,000		
<b>14.06</b>	<b>FWD Double Cab Pick-up for the Engineer</b>				
(a)	Provide six (6) vehicles for the Engineer	L.S.	---		
(b)	Operate and maintain vehicles for an average of 4500 km per month	veh.xmth	216		
(c)	Operate and maintain vehicles for travel distance in excess of average 4500 km per month	km	216,000		
<b>14.07</b>	<b>Survey equipment for the Engineer</b>				
(a)	Provide specified survey equipment for the Engineer	L.S.	---		
(b)	Maintain specified survey equipment for the Engineer	month	36		
<b>14.08</b>	<b>Laboratory for the Engineer</b>				
(a)	Provide laboratory fully furnished for the Engineer	L.S.	---		
(b)	Maintain laboratory fully furnished for the Engineer	month	36		
<b>14.09</b>	<b>Laboratory equipment for the Engineer</b>				
(a)	Provide specified laboratory equipment for the Engineer	L.S.	---		
(b)	Maintain specified laboratory equipment for the Engineer	month	36		
<b>14.10</b>	<b>Meals in Contractor's Mess hall for the Employer's Staff</b>	No.	800		
	<b>Section 1600: Overhaul</b>				
	<i>(No Separate pay item for Overhaul)</i>				
	<b>Section 1700: Environmental Protection and Waste Disposal incl. Occupational Health and Safety</b>				
SS17.01(a)	Environmental and social Mitigation Works to be carried out in accordance with approved ESIA report with TANROADS	P.S.	---		410,000,000
(b)	Allow for Contractor's overheads & profits as a percentage of Subitems SS.17.01(a)	%			
SS.17.02	Reforestation of campsite, yardsites, detours, rubble mounds etc or as to be instructed by the Engineer.	ha	140		
SS 18.01	HIV / AIDS and STI Awareness Campaign	Months	36		
SS 18.02(a)	Institute and Maintain HIV/AIDS Prevention Campaign	PS			30,000,000
(b)	Allow for Contractor's overheads & profits as a percentage of Subitems 18.02(a)	%	---		
SS 18.03(a)	HIV/AIDS Training	PS			20,000,000
(b)	Allow for Contractor's overheads & profits as a percentage of Subitems 18.03(a)	%	---		
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO. 2: DRAINAGE**

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Drains</b>				
21.01	Excavation for open drains				
(a)	Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0.0 m up to 1.5 m	cu.m.	125,000		
	(ii) Exceeding 1.5 m and up to 3.0 m	cu.m.	100		
(b)	Extra over Subitem 21.01(a) for excavation in rock, irrespective of depth	cu.m.	3,100		
21.03	Excavation for subsoil drainage systems				
(a)	Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0.0 m up to 1.5 m	cu.m.	432		
	(ii) Exceeding 1.5 m and up to 3.0 m	cu.m.	48		
21.04	Impermeable backfilling to subsoil drainage systems	cu.m.	80		
21.06(a)	Natural permeable filter material in subsoil drainage systems by crushed stone obtained from approved sources on the site, 14mm nominal size.	cu.m.	400		
21.08(b)	Pipes in subsoils subsoil drainage systems of slotted, corrugated, unplasticised PVC pipes, 125/112 mm dia.	m	800		
21.12(a)	Concrete outlet structures for subsoil drainage pipes	no.	4		
21.13	Concrete caps for subsoil drain pipes	no.	4		
21.16	Test flushing of pipe subsoil drains	no.	2		
21.17	Excavation for the clearing of existing drainage systems:				
(a)	Manholes and inlet and outlet structures	cu.m.	10		
(b)	Culvert barrels	cu.m.	100		
21.19	Synthetic-fibre filter fabric, 150 g/sq.m.	sq.m.	1160		
	<b>Prefabricated Culverts</b>				
22.01	Excavation				
(a)	Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0.0 m up to 1.5 m	cu.m.	13,000		
	(ii) Exceeding 1.5 m and up to 3.0 m	cu.m.	1,600		
	(iii) Exceeding 3.0 m	cu.m.	100		
(b)	Extra over Subitem 22.01(a) for excavation in rock, irrespective of depth	cu.m.	310		
22.02	Backfilling				
(a)	Using excavated material	cu.m.	6,000		
(b)	Using imported selected material	cu.m.	7,500		
22.03	Reinforced concrete pipe culverts and underground drainage pipes on Class A bedding				
(a)					
	(i) 600 mm diameter	m	734		
	(ii) 900 mm Diameter	m	260		
22.03(b)	Reinforced concrete pipe culverts and underground drainage pipes on Class B bedding				
	(i) 900 mm diameter	m	1,500		
22.07	Cast in-situ concrete and formwork				
a)	In Class A Bedding Screeds and the encasing for Pipes Including Form Work	cu.m.	984		
(c)	Concrete Class 30 in inlet and outlet structures, excluding formwork but including Class U2 surface finish	cu.m.	902		
(d)	Formwork of concrete under Subitem 22.07(c)	sq.m.	4,317		
(f)	Precast concrete end unit for access culvert, including reinforcement in accordance with Drawing				
	(i) 600 mm diameter	no.	194		
	(ii) 900 mm Diameter	no.	62		
(g)	Blinding Concrete Class 15	Cum	116		
	<b>Carry forward</b>				

BILL OF QUANTITIES (Option B - AC 12.5)

BILL NO. 2: DRAINAGE cont'

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Brought forward</b>	---			
22.10	Steel reinforcement				
(b)	High-tensile steel bars	ton	83		
22.12	Removing existing concrete				
(a)	Plain concrete and masonry	cu.m.	770		
(b)	Reinforced concrete	cu.m.	260		
22.14	Removing and stacking existing pipes (all Types & Sizes )	m	1043		
22.23	Service Ducts				
(a)	300mm diameter PVC pipes	m	660		
22.24	Duct Marker Blocks	No	33		
	<b>Concrete Kerbing, Channelling, Chutes and Lining</b>				
23.01(a)	Precast, TYPE 2 concrete Class 30 kerbs, including Class 15 concrete bedding	m	3,225		
23.01(b)	Precast, TYPE 1 concrete Class 30 kerbs, including Class 15 concrete bedding		2868		
23.05	Inlet /outlet, transition and similar concrete structure for slope drains				
(a)	Inlet transition from kerb & outlet unit from Slope Drains as shown on the Drawings in Concrete Class 25 including formwork, Surface Finish and Reinforcement	Nos.	100		
23.07	Trimming of excavations for concrete-lined open drains				
(a)	In soft materials	sq.m.	43092		
23.08	Concrete lining for open drains:				
(a)	Cast in-situ Class 20 concrete lining for open drains	cu.m.	5103		
(b)	Class U2 surface finish to cast in-situ concrete lining	sq.m.	43092		
23.09	Formwork to cast in-situ concrete lining for open drains, Class F2 surface finish				
(c)	To ends of slabs	sq.m.	1616		
23.13	Polyethylene sheeting (0.15 mm thick) for concrete-lined open drains	sq.m.	43092		
23.16	Slope drain of 300mm diameter PVC pipe	m	720		
	<b>Asphalt and Concrete Berms</b>				
24.01(a)	Asphalt berm placed where there are no guardrail	m	125		
	<b>Pitching, Stonework and Protection against Erosion</b>				
25.01(b)	Grouted stone pitching, 300 mm thick	sq.m	396		
25.04	Concrete Pitching and Block Paving				
a)	Cast in-situ Concrete Pitching (Class 20, 150 mm thick ) for Cattle	Sqm	1500		
d)	Prefabricated Concrete Paving Blocks (60mm thick)	Sqm	600		
25.07	Foundation trenches for stone pitching, riprap and erosion checks	cu.m.	119		
25.08	Reinforced concrete erosion checks incl. reinforcement and formwork	cu.m.	8		
	<b>Gabions</b>				
26.01	Foundation trench excavation and backfilling				
(a)	In solid rock (material which require blasting)	cu.m.	52		
(b)	In all other classes of material	cu.m.	208		
26.02	Surface preparation for bedding of gabions	sq.m.	900		
26.03	Gabions				
(c)	Galvanised gabion mattresses, 0.30 m & 0.50 m thickness, 80 x 100 mm mesh	cu.m.	260		
26.04	Synthetic-fibre filter fabric, 210 g/sq.m.	sq.m.	900		
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO. 3: EARTHWORKS & PAVEMENT LAYERS OF GRAVEL OR CRUSHED STONE**

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Clearing, Grubbing and Removal of Topsoil</b>				
31.01(a)	Clearing and grubbing	ha	250		
31.01(b)	Removal of topsoil	cu.m.	245,800		
31.02	Removal and grubbing of large trees and tree stumps				
(a)	Girth exceeding 1.0 m up to including 2.0 m	no.	1,500		
(b)	Girth exceeding 2.0 m up to including 3.0 m	no.	300		
(c)	Girth exceeding 3.0 m in steps of 1.0 m of girth	no.	100		
31.03	Applying approved pesticides to ant and termite nests	litres	300		
	<b>Breaking up of Existing Pavements</b>				
33.01	Excavate material from existing pavements:				
(b)	Bituminous material	cu.m.	125		
	<b>Earthwork</b>				
36.01	Excavations:				
(a)	Common excavation to spoil	cu.m.	104,000		
(b)	Rock excavation	cu.m.	25,450		
36.02	Fill and improved subgrade layers:				
(a)	Improved subgrade layer as specified in the Drawings to require minimum G15 quality material	cu.m.	261,000		
(b)	Improved subgrade layer as specified in the Drawings to require minimum G7 quality material	cu.m.	281,000		
(c)	Fill as specified in the Drawings to require minimum G3 quality material	cu.m.	1,400,000		
(d)	Fill or improve subgrade layer using rocks	cu.m.	55,000		
(f)	Side Fill	cu.m.	1,200		
	<b>Pavement Layers of Natural Gravel Materials</b>				
37.03	Natural gravel for gravel wearing course and unpaved shoulders:				
(b)	Natural gravel class GW used for gravel wearing course	cu.m.	54,000		
37.04	Maintenance of existing gravel roads:				
(a)	Shaping existing gravel roads without scarification of the surface	m <sup>2</sup>	259,600		
(b)	Scarification, mixing, watering and compaction	m <sup>2</sup>	64,900		
	<b>Stabilisation</b>				
38.02	Chemical Stabilisation, payment for full cost of providing:				
(b)	Stabilised Layer Material (C1)	cu.m	301,000		
38.03	Chemical Stabilisator Agents:				
(b)	Ordinary Portland Cement for C1	Tonne	26,000		
	<b>Crushed Aggregate for Base Course</b>				
39.01	Crushed aggregate for base course				
(b)	CRR for base course	cu.m.	195,000		
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO. 4B: BITUMINOUS LAYERS AND SEALS, OPTION B (AC-SP12.5 )**

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Priming and Curing Membranes</b>				
41.01(b)	Prime Coat				
	Prime coat, MC-70 cutback bitumen	ltr	1,230,000		
41.03	Aggregate for Blinding	cu.m	3,000		
	<b>Asphalt Concrete</b>				
42.02(a)	Asphalt Concrete, SP 12.5 using PG 70-10 Performance Grade Bitumen	cu.m	58,000		
42.02(b)	Bitumen, PG 70-10 Performance Grade for asphalt concrete surfacing	tonne	6,600		
42.02 (c)	Active Filler: Cement	tonne	1392		
42.03	Tack Coat of 47% Stable Grade Bitumen Emulsion	ltr.	5,000		
42.04	Additives, Sasobit or Similar	kg	13,100		
	<b>Section 4200 B (Rigid Pavement)</b>				
42.01 B	Non Reinforced Concrete Pavement for Truck parking, Bus Bay and Weigh Bridge Location	Cum	7,400		
42.02 B	<b>Joints</b>				
(a)	Dowel bars, installed in Concrete	MT	147		
(b)	Tie bars, installed in concrete	MT	74		
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**
**BILL NO. 5: ANCILLARY ROADWORKS**

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Marker and Kilometre Posts</b>				
51.01	Edge marker posts	no.	404		
51.02	Kilometre posts	no.	25		
51.03	Road reserve marker posts	no.	4,620		
	<b>Guardrails</b>				
52.02(a)	Galvanised guardrails on steel posts	m	2,025		
52.04(a)	End sections including foundation in the ground, 11.43 m long	no.	16		
52.05 (b)	Additional guardrail steel posts	no.	10		
52.06	Reflective plates	no.	675		
	<b>Road Signs</b>				
54.01(a)	Warning signs				
	(i) 900 mm side length	no.	8		
	(ii) 1200 mm side length	no.	30		
54.01(b)	Regulatory and prohibitory signs				
	(i) 600 mm diameter	no.	9		
	(ii) 900 mm diameter	no.	41		
	(iii) Give way sign	no.	68		
54.03	Route direction guidance signs	sq.m.	112		
	<b>Road Marking Paint</b>				
55.01(g)	Kerb markings, yellow and black colour	sq.m.	430		
	<b>Thermo-Plastic Road Marking Paint</b>				
55.03(a)	White lines, broken or unbroken, 2 mm thickness				
	(i) Centreline marking, broken or unbroken, 100 mm wide	m	45,000		
	(ii) Giveway line and continuity line, 200mm wide	m	180		
	(iii) Stop lines, 300 mm wide	m	30		
	(iv) Pedestrian crossing lines, 600 mm wide	m	650		
55.03(b)	Yellow rumble edge line, 100mm wide, 2.5 mm thickness with 50mm wide and 7 mm high ribs at 500 mm centres	m	240,000		
55.03(d)	White lettering and symbols	sq.m.	200		
55.03(f)	Traffic island markings, white and yellow colour	sq.m.	50		
55.04(a)	Variation in rate of white thermo-plastic paint	ltr.	26		
55.04(b)	Variation in rate of yellow thermo-plastic paint	ltr.	120		
55.04(d)	Variation in rate of retro-reflective beads	kg	115		
55.05	Roadstuds, 100 x 100 mm ROADTEC, K-Lite or similar aluminium raised road marker	no.	100		
55.06	Setting out and premarking the lines (excluding traffic island markings, lettering and symbols)	m	357,000		
	<b>Rumble Strips, Speed Humps and Raised Pedestrian Crossings</b>				
55.10(a)	Rumble strips	m	390		
55.10(b)	Speed humps (extra over Subitems 37.02, 37.04, 38.02, 38.03, 39.01, 41.01 and 45.01 for forming speed hump)	m	26		
55.10(c)	Raised slab pedestrian crossing by full cost payment of subbase, crushed aggregate base course and reinforced concrete	m	13		
<b>Carry forward to Grand Summary</b>					



BILL OF QUANTITIES (Option B - AC 12.5)

BILL NO. 5: ANCILLARY ROADWORKS Cont.

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	Brought forward				
	<b>WEIGH-BRIDGE STATION</b>				
56.03	Supply, install and commission (2 Nos) static weighbridge scales including training of operators.	L.S			
SS56.04	<b>Construct all buildings including fencing the compounds and including electrical installation, water supply plumbing installation, waste water plumbing installation as shown in Drawings or as directed by the Engineer.</b>				
(a)	Weigh bridge staff house type 2 completed (2 Nos) as detailed in the Drawings and furnished as for Engineers House Type II.	L.S			
(b)	Weigh bridge staff house type 3 completed (3 Nos) as detailed in the Drawings and furnished as for Engineers House Type III.	L.S			
(c)	Weigh bridge office building completed as detailed in the Drawings and furnished.	L.S			
(d)	Generator house building including cabling for supplying electricity from the generator	L.S			
(e)	Public Toilets block (2 Nos.) complete with all furnishings and Pits	L.S			
(f)	Guard houses (4 Nos) complete with all furnishings	L.S			
(g)	Chain link fencing around parking area and staff quarters compound including concrete fencing poles, excavation backfilling, completed as shown on the drawing.	m	2,200		
(h)	Gates (6 No.) to parking area and office complete with columns and pad locks as shown on the drawings.	L.S			
(i)	Gate (1 No.) to staff housing compound complete with columns and pad locks as shown on the drawings.	L.S			
(j)	Supply and install a 25Kva, 0.8 power factor, 220/400V 3 PHASE, 1,500 RPM, 50 Hz standby Generator including a 36A automatic changeover switch	L.S			
SS56.05	<b>Electricity Supply</b>				
(a)	Allow for supply and installation of electricity transformer including service lines from Tanzania Electricity Supply Company(TANESCO) - if available	P.S			10,000,000
(b)	Allow for Contractor's overhead and profit as a percentage of Sub-item 56.05(a)	%			
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO. 5: ANCILLARY WORKS cont'**

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Brought forward</b>	---			
	<b>Landscaping and Grassing</b>				
57.01(a)	Machine trimming	sq.m.	10,000		
57.03	Preparing areas for grassing				
(c)	Topsoiling within the road reserve using following materials:				
	i) Topsoil obtained from within the road reserve or borrow areas (including all haul)	cu.m.	50,000		
	ii) Topsoil obtained from other sources by the Contractor (including all haul)	cu.m.	1,000		
(d)	Topsoiling of borrow pits, using topsoil obtained from borrow areas or from the road reserve (including all haul)	cu.m.	30,000		
(e)	Providing and applying chemical fertiliser and/or soil-improvement material:				
	ii) Super-phosphate	ton	0.5		
	iii) 25:5:5 NPK	ton	0.5		
	<b>Grassing</b>				
57.04(b)	Supply and laying of grass sodding	sq.m.	1,000		
57.04(c)	Hydroseeding				
	i) Providing an approved seed mixture for hydroseeding	kg	8,000		
	ii) Hydroseeding	ha	200		
57.08(a)	Anti-erosion compound:				
	(i) Hydropam (PAM) at 5 kg/ha	kg	100		
	(ii) Additional mulch at 500 kg/ha	kg	1,000		
57.13	Soils analysis of topsoil taken from the Site	No.	1		
<b>Carry forward to Grand Summary</b>					

## BILL OF QUANTITIES (Option B - AC 12.5)

## BILL NO. 6: STRUCTURES

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Foundations for Structures</b>				
61.02(a)	Common excavation in soft material situated within the following successive depth ranges:				
	i) 0 m up to 2 m	cu.m.	6,000		
	ii) 2 m up to 4 m	cu.m.	2,000		
	iii) 4 m and above	cu.m.	200		
61.02(b)	Extra over Subitem 61.02(a) for excavation in rock irrespective of depth	cu.m.	125		
61.04	Backfill to excavations utilising:				
(a)	Material from the excavations	cu.m.	4,000		
(b)	Imported material	cu.m.	3,100		
	<b>Falsework, Formwork and Concrete Finish</b>				
62.01(a)	Formwork to provide Class F1 surface finish to concealed surfaces	sq.m.	5,000		
62.01(b)	Formwork to provide Class F2 surface finish to exposed formed surfaces	sq.m.	6,000		
	<b>Steel Reinforcement for Structures</b>				
63.01(a)	(ii) High yield stress steel reinforcement bars	ton	245		
	<b>Concrete for Structures</b>				
64.01(a)	Cast in-situ Class 15 concrete for blinding for new box culverts	cu.m.	200		
64.01(b)	Cast in-situ Class 30 concrete for reinforced concrete for new box culverts	cu.m.	2,800		
	<b>Carry forward to Summary</b>				

BILL OF QUANTITIES (Option B - AC 12.5)

BILL NO. 7: Special Tests

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Special Tests</b>				
71.01	Special Tests Requested by the Employer including Oversight Quality Control				
(a)	Tests	PS			100,000,000
(b)	Contractor's Overhead and Profits	%			
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

## BILL NO. 8: Street Lighting

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
<b>SS 81.01</b>	<b>Section SS8101 Solar Street Lighting at Truck Parking, Weigh Bridge and Town Locations</b>				
(a)	Supply, Install and Commission street lights and Parking yard lights complete with all necessary accessories. Solar street lights 40W with inbuilt battery mounted on 8m high hot dipped galvanized steel pole (100mm dia.) of circular cross section continuously with base plate and fixing bolts as THORN or other approved Standard.	No.	1,400		
(b)	Excavate and cast poles foundations size 500x500x1000mm using Class A concrete and 16mm diameter high yield reinforcement.	No.	1,400		
(c)	Excavate and construct a (400x400x1000) mm concrete guards post.	No.	40		
(d)	Provide (1 No.) Inverter system 8KVA	LS			
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BIII NO. 9.1: LABOUR**

(Note : All items in this Bill No. 9.1 are PROVISIONAL)

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Labour</b>				
91.01	Unskilled labour	h	1,000		
91.02	Skilled labour	h	1,000		
91.03	Carpenter	h	100		
91.04	Stone mason	h	100		
91.05	Fitter	h	100		
91.06	Pipe layer	h	100		
91.07	Painter	h	100		
91.08	Surveyor	h	100		
91.09	Foreman	h	100		
91.10	Watchman	h	100		
91.11	Heavy plant operator (> 3 ton)	h	100		
91.12	Light plant operator (< 3 ton)	h	100		
Carry forward to Grand Summary					

## BILL OF QUANTITIES (Option B - AC 12.5)

## BILL NO. 9.2: MATERIALS

(Note : All items in this Bill No. 9.2 are PROVISIONAL)

Item	Description	Unit	Quantity	Rate (TZS)	Amount(TZS)
	<b>Materials</b>				
92.01	Ordinary Portland cement	ton	5		
92.02	Coarse crushed aggregate	ton	50		
92.03	Fine aggregate (sand)	ton	50		
92.04	High yield stress steel bars	ton	3		
92.05	Mild steel reinforcement	ton	1		
92.06	Timbering for trenches	sq.m.	100		
92.07	Formwork	sq.m.	100		
92.08	Cutback bitumen MC-70	ltr.	1,000		
92.09	Bitumen, PEN 80/100	ltr.	100		
92.10	Granular material for subbase, Class G45	cu.m.	100		
92.11	Crushed stone base material	cu.m.	100		
92.12	Road marking paint, white or yellow	ltr.	100		
92.13	Road studs, white/white 100 x 100 mm ROADTEC or similar	no.	100		
	<b>Carry forward to Grand Summary</b>				

**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO.9.3: EQUIPMENT**

(Note : All items in this Bill No. 9.3 are PROVISIONAL)

Item	Description	Unit	Quantity	Rate (TZS)	Amount (TZS)
	<b>Equipment</b>				
93.01	Bulldozer, CAT D4 or equivalent, with blade and ripper	h	100		
	Make/model:				
93.02	Bulldozer, CAT D7 or equivalent, with blade and ripper	h	100		
	Make/model:				
93.03	Bulldozer, CAT D8 or equivalent, with blade and ripper	h	100		
	Make/model:				
93.04	Wheeled excavator, CAT 315 or equivalent, bucket capacity ~1 m3	h	100		
	Make/model:				
93.05	Wheeled excavator, CAT 330 or equivalent, bucket capacity ~2 m3	h	100		
	Make/model:				
93.06	Track Loader, CAT 953 or equivalent, ~2 m3 bucket capacity	h	100		
	Make/model:				
93.07	Track Loader, CAT 973 or equivalent, ~3 m3 bucket capacity	h	100		
	Make/model:				
93.08	Wheel loader, CAT 908 or equivalent, ~1 m3 bucket capacity	h	100		
	Make/model:				
93.09	Wheel loader, CAT 966 or equivalent, ~4 m3 bucket capacity	h	100		
	Make/model:				
93.10	Wheel loader, CAT 980 or equivalent, ~5 m3 bucket capacity	h	100		
	Make/model:				
93.11	Backhoe loader	h	100		
93.12	Motorgrader, CAT 14 or equivalent, complete with scarifier	h	100		
	Make/model:				
93.13	1 ton pick-up truck	h	100		
93.14	3 ton flat bed truck	h	100		
93.15	10 ton tipper truck	h	100		
93.16	15 ton tipper truck	h	100		
93.17	10 ton vibrating roller	h	100		
	Make/model:				
93.18	10 - 12 ton smooth wheeled static roller	h	100		
	Make/model:				
93.19	16-18t smooth wheeled static roller	h	100		
	Make/model:				
93.20	Heavy grid or sheepsfoot roller	h	100		
	Make/model:				
93.21	Pneumatic roller, 15 ton when fully ballasted	h	100		
	Make/model:				
93.22	Small hand propelled vibrating roller	h	100		
93.23	Wacker (or equivalent) hand compactor	h	100		
93.24	Vibrating plate compactor	h	100		
Carry forward					



**BILL OF QUANTITIES (Option B - AC 12.5)**

**BILL NO. 9.3: EQUIPMENT cont'**

(Note : All items in this Bill No.9.3 are PROVISIONAL)

Item	Description	Unit	Quantity	Rate (TZS)	Amount (TZS)
	<b>Brought forward</b>	---			
93.25	Water tanker, min. 9,000 litre capacity, with pick-up pump	h	100		
93.26	Bitumen distributor, min. 4,000 litre capacity	h	100		
	Make/model:				
93.27	Mechanical bitumen hand-spray	h	100		
93.28	Concrete mixing plant, 60 m3/hour, complete with weight batcher	h	100		
	Make/model:				
93.29	Concrete mixer	h	100		
93.30	Concrete vibrator (poker type)	h	100		
93.31	Compressor, 120 litre/minute, complete with all tools	h	100		
93.32	Sludge pump, hand operated	h	100		
93.33	50mm delivery water pump and motor	h	100		
93.34	75mm delivery water pump and motor	h	100		
93.35	Agricultural tractor	h	100		
93.36	Rotary broom	h	100		
93.37	Road marking machine for thermoplastic paint	h	100		
93.38	Mechanical chip spreader unit, self-propelled	h	100		
93.39	Pulvimixer	h	100		
93.40	Generator, 135 kW	h	100		
93.41	Generator, 15 kW	h	100		
<b>Carry forward to Grand Summary</b>					

SUMMARY OF SPECIFIED PROVISIONAL SUMS (Option B - AC 12.5)		
BILLNO.	DESCRIPTION	TOTAL AMOUNT
1	GENERAL	
12.01	<b>Land Acquisition</b>	
(a)	Arrange and pay compensation for acquisition of land for borrough pits, quarries and facilities for Engineer and Contractor.	3,000,000,000
12.02	Relocation of services	
(a)	Arrange and pay for acquisition of land for removal and/or alteration to services provided by agencies for electricity supply, water supply or telecommunication Services.	600,000,000
SS12.05	Disputes Board (DB)	
(a)	Provision sum to cover Employer's obligation to pay DB	500,000,000
SS.14.02(c)	Provide Airtime for Twelve (12) nos. Mobile phones for the Engineers Office.	64,800,000
SS.17.01(a)	Environmental and social MitigationWorks to be carried out in accordance with approved ESIA report with TANROADS	410,000,000
SS.18.02	HIV / AIDS and STI Pevention Campaign	30,000,000
SS.18.03	HIV/AIDS Training	20,000,000
SS56.05	<b>Electricity Supply</b>	
(a)	Allow for supply and installation of electricity transformer including service lines from Tanzania Electricity Supply Company(TANESCO) - if available	10,000,000
71.010	Special Tests Requested by the Engineer	100,000,000
TOTAL SPECIFIED PROVISION SUMS (TShs)		4,734,800,000 -

GRAND SUMMARY OF BILL OF QUANTITIES, OPTION A (DBSD)		
BILLNO.	DESCRIPTION	TOTAL AMOUNT (TZS)
1	GENERAL	
2	DRAINAGE	
3	EARTHWORKS AND PAVEMENT LAYERS OF GRAVEL OR CRUSHED STONE	
4	BITUMINOUS LAYERS AND SEALS	
5	ANCILLARY ROADWORKS	
6	STRUCTURES	
7	SPECIAL TESTS	
8	Street Lighting	
9.1	DAYWORKS - Labour	
9.2	DAYWORKS - Materials	
9.3	DAYWORKS - Equipment	
A	TOTAL OF BILLS (A)	
B	SPECIFIED PROVISIONAL SUMS INCLUDED IN TOTAL OF BILLS (B)	4,734,800,000
C	TOTAL OF BILLS LESS PROVISIONAL SUMS (C)=(A)-(B)	
D	PROVISIONAL SUM FOR PHYSICAL CONTINGECIES (D)=7.5% OF (C)	
E	SUBTOTAL (E)=(C) + (D)	
F	PROVISIONAL SUM FOR VARIATION OF PRICE (F)=7.5% OF (E)	
G	SUBTOTAL (G)=(E) + (F)	
H	TOTAL OF TAXES, DUTIES, FEES, ROYALTIES AND LEVIES	
I	SUBTOTAL (I)=(A) + (D) + (F) + (H)	
J	VAT (J)=18% OF (I)	
GRAND TOTAL (I+J) CARRIED TO LETTER OF BID		