

**MPUNGULELWENI AR ROADS
BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1200	<u>1200: GENERAL REQUIREMENTS AND PROVISIONS</u>				
B12.04	Renumeration of the Project Liason Officer and members of the Project Liason committee				
	(a) Project Liason Officer	Prov Sum	1.00	30,000.00	30,000.00
	(b) Project Liason Committee	Prov Sum	1.00	30,000.00	30,000.00
	(c) Contractor's handling costs,profit and all other charges in respect of subitems B12.04 (a), (b) and (c)				
	(a) Project Liason Officer	%	30,000.00		-
	(b) Project Liason Committee	%	30,000.00		-
B12.30	Training				
	(a) Technical and entrepreneurial skills	Prov Sum	1.00	20,000.00	20,000.00
	(b) Generic and management skills	Prov Sum	1.00	20,000.00	20,000.00
	(c) Training venue	Lump Sum	1.00		
	(b) Contractor's handling costs,profit and all other charges in respect of subitems B12.30 (a) and (b)				
	(a) Technical and entrepreneurial skills	%	20,000.00		
	(b) Generic and management skills	%	20,000.00		
B12.31	Construction Sign Board (3000mm x 3000mm) as per Umzimvubu Local Municipality	Lump Sum	1.00		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1300	<u>1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS</u>				
13.01	Contractor's general obligations:				
	(a) Fixed obligations	L.Sum	1.00		
	(b) Value-related obligations	L.Sum	1.00		
	(c) Time-related obligations	Month	6.00		
13.02	(a) Protection and re-location of services	Prov Sum	1.00	30,000.00	30,000.00
	(b) Handling cost and profit in respect of item B13.02(a)	%	30,000.00		-
	NB : The combined total tendered for sub items (a), (b) and (c) shall not exceed 15% of the Tender Sum				
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1400	<u>1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL</u>				
B14.01	Provision of site offices and accommodation with all furniture, fittings and fixtures.				
	(a) Office buildings				
	(i) Office units complete (16m2 floor area)	No	1.00		
	(ii) Toilet unit (TU) complete (8m2 floor area)	No	1.00		
14.03	(b) Prime cost items and items paid for in a lump sum				
	(i) The provision of a cellular phone including the cost of	No.	2.00		
	(ii) Cost of calls and other charges	Month	6.00		
	(iii) Handling costs and profit in respect of item respect of subitem 14.03(b)(i) above	%	27,000.00		
14.04	Car ports, as specified at offices	No	2.00		
14.07	Rented, hotel and other accommodation				
	(a) Provisional sum for providing rented housing, hotel or other accommodation as described in subclause 1403(c)(ii)	Prov Sum	1.00	60,000.00	60,000.00
	(b) Handling costs and profit in respect of subitem 14.07(a)	%	60,000.00		
14.08	Services				
	The provision of services as scheduled in Clause 1406 Item 14.08				
	(a) Services at offices				
	(i) Fixed costs	L.Sum	1.00		
	(ii) Running costs	Month	6.00		
14.10	Provision of photostat facilities	Month	6.00		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1500	<u>1500: ACCOMMODATION OF TRAFFIC</u>				
15.01	Accommodating traffic and maintaining temporary-diviations	km	4.00		
15.02	Earthworks for temporary deviations				
	(a) Shaping of temporary deviations	km	4.00		
15.03	Temporary traffic control facilities				
	(a) Flagmen	man-day	781.20		
	(b) Portable STOP and GO-RY signs	No	4.00		
	(d) Amber flicker lights	No	4.00		
	(f) Provision of all road signs (R- and TR- series, TW-series)	Lump	1.00		
	(h) Delineators (DTG 50J)				
	(i) singles	No	80.00		
	(l) Movable barricades/road sign combination	No	4.00		
	(j) Traffic cones (750mm high)	No	100.00		
15.03	(m) Two-way communication devices				
15.04	Relocation of traffic control facilities	Lump sum	1.00		
15.06	Watering of temporary deviations	Kl	3,013.20		
15.07	Blading by road grader of				
	(a) Temporary deviations	Km - pass	4.00		Rate Only
15,10"	Accommodating traffic where the road is constructed in half widths	km	2.00		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1700	<u>1700: CLEARING AND GRUBBING</u>				
17.01	Clearing and grubbing	ha	1.24		
17.02	Removal and grubbing of large trees and tree stumps				
	(a) Girth exceeding 1 m up to and including 2 m	No	15.00		
	(b) Girth exceeding 2 m up to and including 3 m	No	15.00		
17.03	Re-clearing of surfaces (on the written instructions of the engineer only)	ha	0.37		
17.04	Clearing and grubbing at inlets and outlets of hydraulic structures	m ²	60.00		
17.05	Cleaning out of hydraulic structures:				
	(a) Pipes with an internal diameter up to and including 900 mm	m ³	89.02		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2200	PREFABRICATED CULVERTS				
22.01	Excavation				
	(a) Excavating soft material situated within the following depth ranges below the level surface level				
	(i) 0m up to 1,5m	m ³	636		
	(ii) Exceeding 1,5m and up to 3,0m	m ³	252		
	(b) Extra over subitem 22.01(a) for excavation in hard material irrespective of depth	m ³	444		
22.02	Backfilling				
	(a) Using the excavated material	m ³	360		
	(b) Using imported selected material	m ³	180		
	(c) Extra over subitem 22.02(a) and (b) for soil cement backfilling	m ³	90		
22.03	Concrete pipe culvert				
	(c) On Class B bedding				
	(i) 600 mm dia class 100D	m			
	(ii) 900 mm dia class 100D	m	115		
	(iii) Provisional Amount for a Box Culvert	Prov Sum	1.00	4,704,590.64	RATE ONLY 4,704,590.64
22.07	Cast in situ concrete and formwork				
	(a) In Class A bedding, screeds and encasing of pipes, Class 15Mpa/19 concrete	m ³	12		
	(c) In inlet and outlet structures, skewed ends, catchpits, manholes thrust and anchor blocks, excluding formwork but including class U2 surface finish (25MPa / 19)	m ³	76		
	(d) Formwork for concrete under subitem 22.07(a & c) above	m ²	264		
22.10	Steel reinforcement				
	(b) High-tensile steel bars	t	0.9		
	(c) Welded steel mesh (ref 315)	kg	1140		
22.13	Removing and re-laying existing pipes				
	(i) 600 mm	m	49		
22.14	Removing and disposing of existing pipes				
	(i) 600 mm to 900mm	m	49		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3100	BORROW MATERIALS				
31.01	Excess overburden (provisional)	m ³	1250		
31.03	Finishing-off borrow areas	ha	0.3		
TOTAL CARRIED FORWARD					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3300	MASS EARTHWORKS				
33.01	Cut and borrow to fill, including freehaul up to 1,0km				
	(e) Pioneer Layer (as specified in subclause 3307©)	m ³	525		
33.04	Cut to spoil, including free haul up to 1.0km. obtained from from :				
	(a) Soft excavation	m ³	525		
	(b) Intermediate excavation	m ³	263		
	(c) Hard Excavation	m ³	263		
33/16.02	Overhaul on material hauled in excess of 1,0km	m ³ -km	2625		
TOTAL CARRIED FORWARD					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
34.00	<u>3400: PAVEMENT LAYERS OF GRAVEL MATERIAL</u>				
B34.01	Pavement layers constructed from gravel taken from cut or borrow including free haul up to 1,0km (h) Gravel wearing course compacted to (iii) 95% Mod AASHTO Density: G7 Subbase 150mm layer thick (ii) 97% Mod AASHTO density: G5 Base 150mm layer thick	m³ m³	3348 3348		
34.02	Extra over item 34.01 for excavation of material in (a) Intermediate material	m³	1339		
34.07	Extra over for temporarily blading the material to windrow	m³			
B34.14	Wet blading (a) 6m road width (riding surface) (b) 7m road width (riding surface)	km km			
B34.15	Dry blading (a) 6m road width (riding surface) (b) 7m road width (riding surface)	km km			
B34.16	Accessibility grading (a) 6m road width (riding surface) (b) 7m road width (riding surface)	km km			
B34.17	Heavy Road Bed Preparation The unit of measurement shall be the kilometre of full width of gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road. The tendered rate shall include full compensation for ripping, adding water, shaping and trimming by motor grader, and providing for the necessary compaction effort to achieve the required specification, as well as all labour required to remove large stones and keeping drainage clear of gravel spillage. (a) 6m road width (riding surface) (b) 7m road width (riding surface)	km km	3.3		
B34.19	Heavy Maintenance (a) 6m road width (riding surface) (b) 7m road width (riding surface)	km km			
B34.20	Patch Gravelling gravelling in short lengths up to 300m (Min depth 150mm) to 95% Mod AASHTO (a) Material from Borrow (b) Crushed Material	m³ m³			
B34.21	Light Road Bed Preparation (b) 7m road width (a) 6m road width (riding surface)	km km			
34/16.02	Overhaul on material hauled in excess of 1,0km (ordinary overha	m³-km	16740		
TOTAL CARRIED FORWARD					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5200	GABIONS				
52.01	Foundation trench excavation and backfilling: (b) In all other classes of materials	m ³	202		
52.02	Surface preparation for bedding the gabions				
52.03	Gabions (a) 1,0m wide by 1,0m wide (i) by 1,0m long mesh 80mm	m ³	80		
	(c) Galvanised gabion mattresses (i) 0,6m diaphragm spacing, 6,0m long by 2,0m wide. by 0,3m deep mesh 80mm	m ³	55		
52.04	Filter fabric (a) Grade 2 Bidum or similar approved (Needlepunch type)	m ²	197		
B52.05	Dismantle and remove gabion structures	m ³	20		
TOTAL CARRIED FORWARD TO SUMMARY					-

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
54.00	5400: GUARDRAILS				
54.01	Guardrails on timber posts				
	(a) Galvanized	m	100.00		
54.04	End treatments				
	(a) End wings	No	4.00		
54.06	Reflective plates	No	50.00		
54.08	Renovating guardrail material				
	(a) Guardrails and end treatments	m	25.00		
	(b) Posts	No	3.00		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
55.00	<u>5500: FENCING</u>				
B55.04	Moving existing fences and gates				
	(a) Fences and gates:				
	(iv) Security fences and gates	Prov.sum	1.00	50,000.00	50,000.00
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
59.00	<u>5900: FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS</u>				
59.01	Finishing road and road reserve				
	(b) Single carriageway road	km	3.10		
59.02	Treatment of old roads and temporary deviations	km	3.10		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
81.00	<u>8100: TESTING MATERIALS AND WORKMANSHIP</u>				
81.02	Other special tests requested by the engineer	Prov.sum	1.00	50,000.00	50,000.00
	(b) Overheads on item 81.02	%	50,000.00		
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
12000	Environmental Management Programme (EMPR)				
B1200.0	Contractor's compliance with EMPR	Month	6		-
TOTAL CARRIED FORWARD TO SUMMARY					

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B13000	OCCUPATIONAL HEALTH AND SAFETY				
B13001	Preparation of Principal Contractor's site specific Health and Safety Plan	L/sum	1.00		
B13002	Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	L/sum	1.00		
B13003	Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	month	6.00		
B13004	Provision of personal protective equipment (PPE):				
	(a) Reflective vests	No	25.00		
	(b) Reflective Sun Hat	No	25.00		
	(c) Hard hats	No	25.00		
	(d) Protective foot wear (pairs)	No	25.00		
	(e) Earplugs (pairs)	No	25.00		
	(f) Dust masks	No	25.00		
	(h) High visibility overalls to SARTSM Chapter 13 Level 3	No	25.00		
	(i) Ear Defenders SABS approved	No	25.00		
B13005	Provision of full time Construction Health and Safety Officer:				
	(a) To manage the Principal Contractor's H&S obligations on site (1 No. required)	month	6.00		
B13006	Costs of medical certificates and medical surveillance:				
	(a) Initial (baseline) medical, including audiometric and lung function testing	No	25.00		
	(b) Annual or Periodic examinations	No			
	(c) Exit examinations	No	25.00		
B13007	Environmental monitoring:				
	(a) Air quality monitoring	No	20.00		RATE ONLY
	(b) Compliance with Amendment of the Occupational Exposure Control Limit for Silica in Table 1 of the Hazardous Chemical Substances	No	20.00		RATE ONLY
	(c) Air sampling in situ	No	20.00		RATE ONLY
	(d) Analysing sample	No	20.00		RATE ONLY
	(e) Tests on workers	No	200.00		RATE ONLY
B13008	Establishment of noise zones	No	10.00		RATE ONLY
B13009	Payment for Health and Safety Representatives at meetings	hr	12.00		
B13010	Provision of First Aid Boxes	No	2.00		
B13011	Transportation of workers	month	6.00		
B13012	Submission of the Occupational Health and Safety File	L/sum	1.00		
B13013	Construction Work Permit Board	L/sum	1.00		
TOTAL CARRIED FORWARD TO SUMMARY					

MPUNGEELENI ROADS SUMMARY OF BILL OF QUANTITIES

SCHEDULE A : ROADWORKS

1200	GENERAL REQUIREMENTS AND PROVISIONS	
1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS	
1400	HOUSING, OFFICES AND LABORATORIES FOR ENGINEER'S AND SITE PERSONEEL	
1500	ACCOMODATION OF TRAFFIC	
1700	CLEARING AND GRUBBING	
2200	PREFABRICATED CULVERTS	
3100	BORROW MATERIALS	
3300	MASS EARTHWORKS	
3400	PAVEMENT LAYERS OF GRAVEL MATERIAL	
5200	GABIONS	
5400	GUARDAILS	
5500	FENCING	
5600	ROAD SIGNS	
5900	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS	
8100	TESTING MATERIALS AND WORKMANSHIP	
B12000	ENVIRONMENTAL MANAGEMENT PROGRAMME	
B13000	OCCUPATIONAL HEALTH & SAFETY	
TOTAL SCHEDULE A		

C2.4 CALCULATION OF TENDER SUM

TOTAL SCHEDULE A : ROADWORKS

TENDER (CONTRACT) SUM

1) CONTINGENCIES @ 10% (This amount is under the sole control of the employer)

SUBTOTAL

2) CONTRACT PRICE ADJUSTMENT @ 0%

SUBTOTAL

3) SPECIAL MATERIALS RISE AND FALL @ 0%

SUBTOTAL

ADD 15% VAT

TENDER (CONTRACT) PRICE CARRIED TO FORM OF OFFER OF ACCEPTANCE (Page C.3)

Note: Tender Sum is the value of the offered total of the prices exclusive of VAT, contingencies, CPA and special materials but including contractual variations.