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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

C.2.2.2 : BILL OF QUANTITIES**SECTION 1 PRELIMINARY AND GENERAL ITEMS****PART 0102 C1.2 GENERAL REQUIREMENTS AND PROVISIONS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Environmental Management</u>				
1	C1.2.1.1 PS.C1.2.1.1	Monitoring of compliance with and reporting on the EMP	months	6		
2	C1.2.1.2 PS.C1.2.1.2	Dedicated environmental officer	months	6		
		<u>Programming and Reporting</u>				
3	C1.2.2.3 PS.1.1 PS.C1.2.2.3	Submission of a Scheme 2 Initial Programme	Lump sum	1		
4	C1.2.2.4 PS.C1.2.2.3	Submission of a Scheme 2 Full Programme	Lump sum	1		
5	C1.2.2.5 PS.C1.2.2.5	Reviewing and updating a Scheme 2 programme every month	months	6		
		<u>Other Documentation</u>				
6	C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation, including reporting on local labour	months	6		
		<u>Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours</u>				
7	C1.2.3.1	Grass cutting	ha	0.115		
8	C1.2.3.4	Collection of rubbish / litter	km	1.15		
		<u>Stakeholder Management & Liaison</u>				
9	C1.2.4 PS.24	Stakeholder Management and Liaison	months	6		
		<u>Health and Safety</u>				
10	C1.2.5.1 PS.10	Health and safety plan	Lump sum	1		
11	C1.2.5.2 PS.10	Implementation of health and safety plan	months	6		
12	C1.2.6.1	Work adjacent to properties: Survey of adjacent properties	no	15		
13	C1.2.6.2	Preventive and/or mitigation measures	PC Sum	25000	1.00	25 000.00
14	C1.2.6.3	Handling cost, profit and all other charges in respect of item C1.2.6.2	%	25000		
		<u>Community Liaison Officer</u>				
15	PS.25	Allow for CLO to be appointed	PC Sum	130000	1.00	130 000.00

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 0102 C1.2 GENERAL REQUIREMENTS AND PROVISIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
16	PS.25	Handling costs and profit in respect of PS.25	%	130000		
		<u>Additional Security</u>				
17	PS.11	Provision of security on site to guard against any disruption of the works throughout the duration of the contract	months	6		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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PART 0103 C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>The Contractor's General Obligations</u>				
1	C1.3.1.1 PS.C1.3.1	Fixed obligations	Lump sum	1		
2	C1.3.1.2 PS.C1.3.1	Value-related obligations	Lump sum	1		
3	C1.3.1.3 PS.C1.3.1	Time-related obligations	months	6		
4	C1.3.2 PS.C1.3.2	Contract sign boards (as per drawing)	no.	1		
5	PS.17	Submission of As-Built Data	sum	1		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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PART 0104 C1.4 FACILITIES FOR THE ENGINEER

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Services at Site Offices, Laboratories and Site Accommodation</u>				
1	PS.19	Allowance for Progress Photographs every month, digital and aerial	PC Sum	50000	1.00	50 000.00
2	PS.19	Handling costs and profit in respect of item above	%	50000		
3	PS.21	Allowance for the additional survey required by the Engineer	PC Sum	50000	1.00	50 000.00
4	PS.21	Handling costs in respect of item above	%	50000		
5	PS.23	Allowance for Laboratory Acceptance testing as required by the Engineer	PC Sum	50000	1.00	50 000.00
6	PS.23	Handling costs in respect of item above	%	50000		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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PART 0105 C1.5 ACCOMMODATION OF TRAFFIC

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C1.5.1.1 PS.1.3	Accommodation of pedestrian and non-motorised traffic	months	6		

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 0105 C1.5 ACCOMMODATION OF TRAFFIC

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	C1.5.2 PS.1.3	Accommodation of vehicular traffic	months	6		
		<u>Temporary Traffic Control Facilities</u>				
3	C1.5.7.1(a)	Delineators including mounting bases and ballast: Single sided, reversible left or right (1200mm x 250mm)	no	20		
4	C1.5.7.1(b)	Delineators including mounting bases and ballast: Double sided, reversible left or right (1200mm x 250mm)	no	20		
5	C1.5.7.3	Flagmen	man-day	160		
6	C1.5.7.4	Traffic controllers	man-day	100		
7	C1.5.7.5 (c)	(c) Illuminated road sign – R & TR series (900mm)	no	6		
8	C1.5.7.9	Cleaning of traffic control facilities	months	6		
9	C1.5.8 PS.1.3.4	Traffic safety officer	months	6		
		<u>Traffic Safety Officer: Penalties</u>				
10	A1.5.3.7 PS.1.4	(a) Fixed Penalty per occurrence, R2000 per day	RateOnly	0		RATE ONLY
11	A1.5.3.7 PS.1.4	(b) Time-Related Penalty, R1000 per hour	RateOnly	0		RATE ONLY
12	C1.5.7.2	Traffic cones, minimum height 750 mm	no	10		
		<u>Provision of Safety Equipment for Visitors</u>				
13	C1.5.11.1	Provision of reflective safety vests for visitors	no	5		
14	C1.5.11.2	Provision of hard hats for visitors	no	5		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 2 DAY WORKS**PART 0102 C1.2 GENERAL REQUIREMENTS AND PROVISIONS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C1.2.8.1(a)	Personnel: (a) Unskilled labourer	hour	20		
2	C1.2.8.1(b)	Personnel: (b) Semi-skilled labourer	hour	20		
3	C1.2.8.1 (c)	Personnel: (c) Skilled labourer	hour	10		
4	C1.2.8.2€	Construction equipment : (e) Tractor loader backhoe	hour	10		
5	C1.2.8.4(a)	Materials - Procurement of materials	PC Sum	40000	1.00	40 000.00
6	C1.2.8.4(b)	(b) Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%	40000		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 3 SITE CLEARANCE**PART 0106 C1.6 CLEARING AND GRUBBING**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Clearing</u>				
1	C1.6.1.1	Clearing with machines and some hand labour where necessary	ha	0.4		
2	C1.6.1.2	Clearing with hand labour only when labour enhanced work is specified	ha	0.122		
		<u>Grubbing</u>				
3	C1.6.2.1	Grubbing with machines and some hand labour where necessary	ha	0.4		
4	C1.6.2.2	Grubbing with hand labour when labour enhancement work is specified or it is not practical to use a machine	ha	0.4		
		<u>Removal and Grubbing of Large Trees and Tree Stumps</u>				
5	C1.6.3.1	Girth equal to or exceeding 1,0 m up to and including 2,0 m	no	2		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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PART 0107 C1.7 LOADING AND HAULING

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Hauling material for use in the Works</u>				
1	C1.7.2.1(a)	Hauling material for use in the Works and off-loading it on the site of the Works: (a) Soil, gravel, crushed stone and pavement layer material	m3 * km	150		
		<u>Hauling material to spoil</u>				
2	C1.7.2.2(a) PS.C1.7.2.2	Hauling material to spoil in sites designated by the Contractor: (a) Cleared and grubbed material (organic matter and all other unsuitable or waste material)	m3	300		
3	C1.7.2.2(b) PS.C1.7.2.2	Hauling material to spoil in sites designated by the Contractor: (b) Soil and gravel material	m3	100		
4	C1.7.2.2(c) PS.C1.7.2.2	Hauling material to spoil in sites designated by the Contractor: (c) Boulders and hard material	m3	100		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 4 SERVICES**PART 0201 C2.1 GEN REQMENTS AND TRENCHING SERVICE**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Location, Identification, Protection and Relocation of Existing Services</u>				
1	C2.1.1.1	Contractor's obligation	Lump sum	1		
		<u>Relocation of Services by Others:</u>				
		<u>Water</u>				
2	C2.1.1.2 PS.3	Permanent services relocation or protection work by others: Water	PC Sum	30000	1.00	30 000.00
3	C2.1.1.3 PS.3	Handling costs and profit in respect of item C2.1.1.2 above	%	30000		
		<u>Electricity</u>				
4	C2.1.1.2 PS.6	Permanent services relocation or protection work by others: Electricity	PC Sum	100000	1.00	100 000.00
5	C2.1.1.3 PS.6	Handling costs and profit in respect of item C2.1.1.2 above	%	100000		
		<u>Proving By Hand</u>				
6	C2.1.2.5 PS.2.2	Using hand excavation to locate, expose and verify services, Depth of 0.0m to 1.5m. (Prov)	m3	20		
7	C2.1.2.5 PS.2.2	Using hand excavation to locate, expose and verify services, Depth of 1.5m to 2.0m (Prov)	m3	10		
		<u>Cable Ducts</u>				
8	C2.1.6.1(a) PS.C2.1.6	Trench excavation (in soft material): Trenches up to 1,0 m wide (a) Up to 1,0 m deep	m3	20		
9	C2.1.6.1(b) PS.C2.1.6	Trench excavation (in soft material): Trenches up to 1,0 m wide (b) Over 1,0 m and up to 2,0 m deep	m3	10		
10	C2.1.6.2(a) PS.C2.1.6	Trenches over 1,0 m and up to 2,0 m wide: (a) Up to 1,0 m deep	m3	20		
11	C2.1.6.2(b) PS.C2.1.6	Trenches over 1,0 m and up to 2,0 m wide: (b) Over 1,0 m and up to 2,0 m deep	m3	10		
12	C2.1.7.1	Extra over item for excavating in hard material irrespective of depth	m3	10		

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 0201 C2.1 GEN REQMENTS AND TRENCHING SERVICE

Item	Clause	Description	Unit	Quantity	Rate	Amount
13	C2.1.11.1(a) PS.C2.1.6	Backfilling of trenches: Backfill compacted to 93 % (100 % for sand) of MDD (areas subject to traffic loads) using material: (a) From the excavated trench material	m3	40		
14	C2.1.11.1(b) PS.C2.1.6	Backfilling of trenches: Backfill compacted to 93 % (100 % for sand) of MDD (areas subject to traffic loads) using material: (b) From other excavations on Site	m3	10		
15	C2.1.11.1(d) PS.C2.1.6	Backfilling of trenches: Backfill compacted to 93 % (100 % for sand) of MDD (areas subject to traffic loads) using material: (d) From sources provided by the Contractor	m3	10		
16	C2.1.14.2	Extra over items C2.1.11, C2.1.12 and C2.1.13 for additional compaction of backfill:Compaction increased from 93 % of MDD to 95 % of MDD	m3	10		
17	C2.1.17.2	Removal and disposal of spoil material from trench excavations:To spoil sites or dumping areas provided by the Contractor	m3	0		
18	C2.1.19.1	Dealing with surface water	Lump sum	1		
19	C2.1.19.2	Dealing with subsurface water	Lump sum	1		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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PART 0204 C2.4 ENERGY AND OTHER SERVICES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.6.2	Street lighting	PC Sum	40000	1.00	40 000.00
2	PS.20	Handling costs and profit in respect of Street lighting	%	40000		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 5 DRAINAGE**PART 0302 C3.2 CULVERTS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Excavation:</u> <u>Pipes</u>				
1	C3.2.1.1(a) PS.C2.1.6 PS.C3.2.1.1	Excavation for culvert structures for pipes: in all material situated within the following depth ranges below the surface level: (a) 0 m to 1,5 m	m3	255		
2	C3.2.1.1(b) PS.C2.1.6 PS.C3.2.1.1	Excavation for culvert structures for pipes: in all material situated within the following depth ranges below the surface level: (b) Exceeding 1,5 m and up to 3,0 m	m3	80		
3	C3.2.1.4 PS.C2.1.6	Extra over sub-item C3.2.1.1 for excavation in hard or boulder material,irrespective of depth	m3	10		
		<u>Backfilling:</u> <u>Pipes</u>				
4	C3.2.2.1	Backfilling: Using the excavated material	m3	150		
5	C3.2.2.2(a)	Backfilling: Using imported selected material: (a) From commercial sources (Using granular material)	m3	60		
6	C3.2.3.3 PS.C3.2.3.2	Concrete pipe culverts, Spigot and Socket: On Class C bedding (450mm diameter concrete Class 100D)	m	250		
7	C3.2.8	Concrete backfill or encasement for culverts (Grade 20/26)	m3	5		
		<u>Excavation:</u> <u>Manholes, Inlets and Headwalls</u>				
8	C3.2.1.1(a) PS.C2.1.6	Excavation for culvert structures for Manholes Inlets and Headwalls: in all material situated within the following depth ranges below the surface level: (a) 0 m to 1,5 m	m3	40		
9	C3.2.1.1(b) PS.C2.1.6	Excavation for culvert structures for Manholes Inlets and Headwalls: in all material situated within the following depth ranges below the surface level: (b) Exceeding 1,5 m and up to 3,0 m	m3	5		
10	C3.2.1.4 PS.C2.1.6	Extra over sub-item C3.2.1.1(b) for excavation in hard or boulder material,irrespective of depth	m3	5		

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 0302 C3.2 CULVERTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Backfilling:</u> <u>Manholes, Inlets and Headwalls</u>				
11	C3.2.2.1	Backfilling: Using the excavated material	m3	15		
12	C3.2.2.2(a)	Backfilling: Using imported selected material: (a) From commercial sources	m3	5		
		<u>Headwalls</u>				
13	PS.C3.2.9	Inlets and outlets to culverts: Headwalls, Type A, for 450mm pipes	no	3		
		<u>Manholes and Inlets</u>				
14	PS.C3.2.15.2	Manhole: Type A with a heavy duty concrete cover; Depth: Exceeding 0,0m and up to 1,5m	no	6		
15	PS.C3.2.15.2 PS.C3.2.15.2	Manhole: Type A with a heavy duty concrete cover; Depth: Exceeding 1,5m and up to 2,0m	no	2		
16	PS.C3.2.15.2	Inlet: Type S2, heavy duty concrete cover; Depth: Exceeding 0,0m and up to 1,5m	no	2		
17	PS.C3.2.15.2	Inlet: Type S2, heavy duty concrete cover; Depth: Exceeding 1,5m and up to 2,0m	no	1		
18	PS.C3.2.15.2	Inlet: Type D3, heavy duty concrete cover; Depth: Exceeding 0,0m and up to 1,5m	no	2		
		<u>Compaction</u>				
19	C3.2.24.1	Compaction of bedding for inlets, outlets, manholes and catchpits: Preparation and compaction of in situ bedding material to 90 % of MDD (depth 150mm)	m3	20		
20	C1.7.2.2(c) PS.C1.7.2.2	Hauling material to spoil and off-loading it at a designated spoil area: (c) Boulders and hard material	m3	25		
		<u>Chutes</u>				
21	C3.3.6.1	Prefabricated concrete chutes (minimum size 0.4m wide x 0.15m depth)	m	20		

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 0302 C3.2 CULVERTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Driveways</u>				
22	PS..26	Construction of affected driveways to original or better conditions. (Rate is to include excavation, preparation of subbase, provision and compaction of granular base material, supply of all materials, shuuttering, formwork, expansion joints, reinforcing Mesh REF 193 and weedkiller) The driveway is to be constructed with a 100mm thick x 3.0m wide concrete pavement with a 150mm - 250mm concrete lip above the final road level ege to cater for stormwate drainage.	no	10		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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PART 0303 C3.3 CONCRETE KERBING AND CHANNELING

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Kerb and Channel / Fillet for Roadway</u>				
1	C3.3.2.1, PS.C3.3.2.1	Prefabricated kerbing, cast in-situ channeling: Type D Barrier Kerb, Fig. 6, with 150mm channel, Drawing 38577	m	565		
2	C3.3.2.1, PS.C3.3.2.1	Prefabricated kerbing, cast in-situ channeling: Type F Mountable Kerb, Fig. 6, with 150mm channel, Drawing 38577	m	185		
3	C3.3.3.1, PS.C3.3.2.1	Extra over items 1 and 2 for concrete kerbing and channeling on curves of radii more than or equal to 2,0 m but less than 25 m	m	20		
4	C3.3.3.1	Extra over items 1 and 2 for concrete kerbing or concrete kerbing and channeling on curves of radii more than or equal t40,0 m but less than 200 m	m	50		
5	C3.3.4	Extra over item C3.3.2 for drop kerbs and channel / Fillet at pedestrian crossings and driveways (Drawing 38579)	m	15		
		<u>Sidewalk Edge Restraint</u>				
6	C3.3.2.1, PS.C3.3.2.1	Prefabricated kerbing (edge restraint, Figure 12 kerb including 100mm x 100mm haunching)	m	430		

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 0303 C3.3 CONCRETE KERBING AND CHANNELING

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Scoops</u>				
7	C13.4.11	Cast in situ concrete for Pedestrian / Vehicular Scoop (Grade 20/13)	m3	5		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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PART 1206 C12.6 MECH STABILISED FILL AND GABIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Reno Mattress and Gabions for Headwalls</u>				
1	C12.6.14.1(a)	Foundation trench excavation: Excavating all material for gabions and reno mattress situated within the following depth ranges (a) 0 m to 1,5 m	m3	60		
2	C12.6.14.1(b)	Foundation trench excavation: Excavating all material for gabions and reno mattress situated within the following depth ranges (b) Exceeding 1,5 m and up to 3,0 m	m3	165		
3	C12.6.15	Surface preparation for bedding the reno mattress	m2	40		
4	C12.6.16.2	Reno mattress: PVC coated gabion boxes (2.0mx1.0mx0.3m)	m3	10		
5	C12.6.17, PS.C12.6.17	Geotextile (Filtertation and separation for use with reno mattress, min Grade 7)	m2	40		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 6 EARTHWORKS**PART 0402 C4.2 CUT MATERIALS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Excavation to Stockpile or Fill</u>				
1	C4.2.3.1 PS.C4.2	Excavating of materials in cuttings for use in the works, material obtained from: Soft excavation	m3	450		
2	C4.2.3.4 PS.C4.2	Excavating of materials in cuttings for use in the works, material obtained from: Hard excavation (other than by blasting)	m3	100		
3	C4.2.4.1 PS.C4.2	Excavating of materials in box cuts for use in the works, material obtained from: Soft excavation	m3	180		
4	C4.2.4.4 PS.C4.2	Excavating of materials in box cuts for use in the works, material obtained from: Hard excavation (other than by blasting)	m3	50		
5	C1.7.2.2(b) PS.C1.7.2.2	Hauling material to spoil in sites designated by the Contractor: (b) Soil and gravel material	m3	1440		
6	C1.7.2.2(c) PS.C1.7.2.2	Hauling material to spoil in sites designated by the Contractor: (c) Boulders and hard material	m3	200		
7	C1.7.2.1(a)	Hauling material for use in the Works and off-loading it on the site of the Works: (a) Soil, gravel, crushed stone and pavement layer material	m3 * km	140		
8	C1.7.1.1	Loading from stockpile using machines and some hand labour where necessary	m3	230		
		<u>Excavation to Spoil</u>				
9	C4.2.9.1 PS.C4.2	Excavate material to spoil in sites designated by the Contractor, material obtained from: Soft excavation, overburden and unsuitable material	m3	170		
		<u>Finishing of Banks</u>				
10	C4.2.12.1(a)	Finishing the side slopes of Cuttings: (a) In soft material	m2	1310		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

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UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

PART 0403 C4.3 EXISTING ROAD MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Saw-cut</u>				
1	C4.3.4.1(a)	Saw-cutting existing materials within the following average depth ranges: Asphalt: (a) Up to 50 mm	m	20		
2	C4.3.9.2 PS.C4.2	Excavating material by using conventional road construction equipment to stockpile: Crushed stone and macadam materials	m3	5		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 0404 C4.4 COMMERCIAL MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Import Fill Material</u>				
1	C4.4.2.1(g)	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers: Pavement layer material:Type G7	m3	120		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 0502 C5.2 FILL

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Processing and Compaction</u>				
1	C5.2.2.1(a)	Fill construction: Normal fill material (G7) in compacted layer thicknesses of 200 mm and less: (a) Compacted to 95 % of MDD	m3	120		
2	C5.2.3	Side-cut to fill compacted to 93 % of MDD in compacted layer thicknesses of 200 mm and less	m3	50		
3	C5.2.11.1	Finishing-off fill slopes	m2	1565		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 7 LAYERWORKS**PART 0404 C4.4 COMMERCIAL MATERIALS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Import Layerworks</u>				
1	C4.4.2.1(b)	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers: Pavement layer material:Type G2	m3	460		
2	C4.4.2.1(f)	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers: Pavement layer material:Type G5	m3	445		
3	C4.4.2.1(g)	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers: Pavement layer material:Type G7	m3	100		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 0501 C5.1 ROADBED

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C5.1.1.2	Roadbed construction and compaction to 95 % of MDD	m3	440		
		<u>Removal of Unsuitable (Undercut)</u>				
2	C5.1.4.1(a)	Removal of unsuitable material to spoil: In layer thicknesses of 200 mm and less (a) Stable material	m3	70		
3	C5.1.4.2(a)	Removal of unsuitable material to spoil: In layer thicknesses exceeding 200 mm (a) Stable material	m3	140		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 0503 C5.3 ROAD PAVEMENT LAYERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C5.3.1	Compiling and implementing M&U plans for the construction of all the pavement layers.	no	1		
		<u>Processing and Compaction</u>				
2	C5.3.2.1(k)	Construction of layers: Upper subbase (G2) layer compacted to 98 % of MDD	m3	460		
3	C5.3.2.1(j)	Construction of layers: Lower subbase (G5) layer compacted to 95 % of MDD	m3	445		

Part Continued on next page

UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 0503 C5.3 ROAD PAVEMENT LAYERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
4	C5.3.2.1(b)	Construction of layers: Upper selected subgrade layer (G7) compacted to 95 % of MDD	m3	100		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 0901 C9.1 ASPHALT LAYERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Bond Coat (Tack)				
1	C9.1.3.1 PS.C9.1	Application of bond coat: Stable –grade 30 % net bitumen emulsion as specified. Applied with a calibrated distributor	l	2320		
		Asphalt Surface				
2	C9.1.5.1(e) PS.C9.1	New construction (paver laid) (a) Stone skeletal mix – continuously graded (SA-S14) (40mm layer)	m2	2900		
3	C8.1.1.2	Prime coat: MC -30 cut-back bitumen. 0.8l/m2	l	2320		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 1203 C12.3 GROUND IMPROVEMENT

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C12.3.20 PS.C12.3.20	Importing dump rock for subgrade improvement, 300mm thick	m3	75		
2	PS.C12.3.20	Supply and place minimum grade 5 geofabric to dumprock layer.	m2	630		
3	PS.27	Povision of clean coarse sand as a filter over dumprock layer. Sand layer thickness to be 200mm thick	m3	50		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 8 ANCILLARY ROAD WORKS**PART 1104 C11.4 ROAD RESTRAINT SYSTEMS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.4.1.1(c)	Erecting of guardrails at 3,81 m spacing: Complete galvanized system compliant to SANS 1350: (c) on CONCRETE post (Drawing 38580)	m	140		
2	C11.4.1.2(b)	Terminal sections for 3,81 guardrails comprising of: (b) Bullnoses to SANS 1350	no	8		
3	C11.4.5.1	"Additional guardrail posts for 3,81 m systems: Concrete"	no	4		
4	C11.4.6.2	Reflective Plastic plates	no	25		
5	C11.4.4.1	Extra over C11.4.1 for horizontally curved guard rails factory bent to a radius of less than 45m	m	25		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 1105 C11.5 FENCING

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Wire Mesh Fence - Drawing 38583</u>				
1	C11.5.1.3	Diamond mesh	m2	110		
2	C11.5.1.9(a)(i)	Straining posts, stays and anchors:(a) Vertical (Concrete straining post)	no	5		
3	C11.5.2 PS.C11.5.4.1	New gates (Vehicular)	no	2		
4	C11.5.10.1	Disposal of existing fencing materials: Security Fences	m	35		
5	C11.5.3.1(d)	"Moving existing fences:(d) Security fences"	km	0.2		
6	C11.5.4.1(d)	"Dismantling existing fences:(d) Security fences"	km	0.2		
7	C11.5.9	Repairing existing fences : To match existing fencing on site as and when required	km	0.1		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 1106 C11.6 ROAD SIGNS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.6.1.3(a)	Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class I retro-reflective material, where the sign board is constructed from: Prepainted galvanized steel plate: (a) Area 0 to 0,5 m2	m2	2		

Part Continued on next page

UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

Part Continued **PART** 1106 C11.6 ROAD SIGNS

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	C11.6.3.1	Road sign supports:Steel tubing (75m diameter), Galvanised	m	15		
3	C11.6.5.1	Excavation and backfilling for road sign supports:Excavating soft material and backfilling	m3	2		
4	C11.6.5.4	Extra over item C11.6.5.1 for hard material excavation	m3	2		
5	C13.4.11	Cast in situ concrete for road sign footings as directed by the Engineer (Grade 20/19)	m3	2		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 1107 C11.7 ROAD MARKINGS AND ROAD STUDS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.7.1.4 PS.C.11.7.1	White lettering and symbols (Thermoplastic)	m2	4.5		
		<u>Broken and Unbroken Lines</u>				
2	C11.7.1.1 PS.C11.7.1	Thermoplastic Road marking, broken or unbroken (White, 100mm wide)	km	0.01		
3	C11.7.1.1 PS.C11.7.1	Thermoplastic Road marking, broken or unbroken (White, 200mm wide)	km	0.01		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 1108 C11.8 LANDSCAPING AND PLANTING PLANTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.8.3.3(a)	Preparing the areas for grassing: (a) Topsoil obtained from within the road reserve or borrow areas	m3	150		
2	C11.8.3.3(b)	Preparing the areas for grassing: (b) Topsoil obtained from commercial sources by the Contractor	m3	25		
3	C11.8.4.3(a)	Hydroseeding: (a) Providing an approved seed mixture for hydroseeding	kg	20		
4	C11.8.4.3(c)	(c) Hydroseeding	ha	0.2		
5	C11.8.6	Watering the already planted grass, trees and shrubs during the growing season	kl	5		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

R

PART 1109 C11.9 FINISHING ROAD AND ROAD RESERVE

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.9.1.2	Single carriageway road	km	0.58		

<u>PART</u>		1109	C11.9 FINISHING ROAD AND ROAD RESERVE			
Item	Clause	Description	Unit	Quantity	Rate	Amount
TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES					R	

UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

SECTION 9 RETAINING WALLS**PART 1206 C12.6 MECH STABILISED FILL AND GABIONS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Gabions</u>				
1	C12.6.14.1(a)	Foundation trench excavation: Excavating all material for gabions situated within the following depth ranges (a) 0 m to 1,5 m	m3	55		
2	C12.6.14.1(b)	Foundation trench excavation: Excavating all material for gabions situated within the following depth ranges (b) Exceeding 1,5 m and up to 3,0 m	m3	165		
3	C12.6.15	Surface preparation for bedding the gabions	m2	175		
4	C.12.6.16.2	Gabions and mattresses: PVC coated gabion boxes (1.0m x 0.5m x 0.5m)	m3	20		
5	C.12.6.16.2	Gabions and mattresses: PVC coated gabion boxes (1.0m x 1.0m x 1.0m)	m3	110		
6	C12.6.16.2	Gabions and mattresses: PVC coated gabion boxes (1.0m x 1.0m x 1.5m)	m3	125		
7	C12.6.17, PS.C12.6.17	Geotextile (Filtertation and separation for use with gabions, min Grade 7)	m2	750		
		<u>Segmented Block walls (Geolock or similar approved)</u>				
8	C12.6.2	Excavation for wall base foundation	m3	5		
9	C12.6.3	Concrete for wall base foundation (25/26)	m3	5		
10	C12.6.7	Metallic reinforcing mesh (Mesh Ref. 245)	m2	15		
11	C12.6.12.2	Facings (Geolock wall as per drawing for wall 0-2m): For concrete block wall facing	m2	15		
12	C12.6.13	Drainage (50mm weepholes installed inclusive of all elements as per drawing)	no	6		
13	C12.6.11	Backfill (compacted to 95%MDD)	m3	10		
14	C12.6.17	Geotextile (Drainage A3)	m2	150		
15	C12.6.3	Concrete for wall Top blocks of wall (25/26)	m3	5		
16	C3.1.9.1	Pipes in subsoil drainage systems: U-PVC pipes and fittings, normal duty, complete with couplings (state size and whether or not perforated or slotted)	m	10		

Part Continued PART 1206 C12.6 MECH STABILISED FILL AND GABIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
17	C3.3.6.2	Precast concrete chutes (catchwater drain, minimum 300mm wide by 150mm deepm as per drawing) Item to include all materials, formation, backfill and installation.	m	15		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES R

UPGRADING OF TRK 76832 IN MPUMALANGA AREA, WARD 06_OUTER WEST

C.2.2.3 : SUMMARY OF BILL OF QUANTITIES**Section**

1	PRELIMINARY AND GENERAL ITEMS		R	<u> </u>
0102	C1.2 GENERAL REQUIREMENTS AND PROVISIONS	R		<u> </u>
0103	C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND	R		<u> </u>
0104	C1.4 FACILITIES FOR THE ENGINEER	R		<u> </u>
0105	C1.5 ACCOMMODATION OF TRAFFIC	R		<u> </u>
2	DAY WORKS		R	<u> </u>
0102	C1.2 GENERAL REQUIREMENTS AND PROVISIONS	R		<u> </u>
3	SITE CLEARANCE		R	<u> </u>
0106	C1.6 CLEARING AND GRUBBING	R		<u> </u>
0107	C1.7 LOADING AND HAULING	R		<u> </u>
4	SERVICES		R	<u> </u>
0201	C2.1 GEN REQMENTS AND TRENCHING SERVICE	R		<u> </u>
0204	C2.4 ENERGY AND OTHER SERVICES	R		<u> </u>
5	DRAINAGE		R	<u> </u>
0302	C3.2 CULVERTS	R		<u> </u>
0303	C3.3 CONCRETE KERBING AND CHANNELING	R		<u> </u>
1206	C12.6 MECH STABILISED FILL AND GABIONS	R		<u> </u>
6	EARTHWORKS		R	<u> </u>
0402	C4.2 CUT MATERIALS	R		<u> </u>
0403	C4.3 EXISTING ROAD MATERIALS	R		<u> </u>
0404	C4.4 COMMERCIAL MATERIALS	R		<u> </u>
0502	C5.2 FILL	R		<u> </u>
7	LAYERWORKS		R	<u> </u>
0404	C4.4 COMMERCIAL MATERIALS	R		<u> </u>
0501	C5.1 ROADBED	R		<u> </u>
0503	C5.3 ROAD PAVEMENT LAYERS	R		<u> </u>
0901	C9.1 ASPHALT LAYERS	R		<u> </u>
1203	C12.3 GROUND IMPROVEMENT	R		<u> </u>
8	ANCILLARY ROAD WORKS		R	<u> </u>
1104	C11.4 ROAD RESTRAINT SYSTEMS	R		<u> </u>
1105	C11.5 FENCING	R		<u> </u>
1106	C11.6 ROAD SIGNS	R		<u> </u>
1107	C11.7 ROAD MARKINGS AND ROAD STUDS	R		<u> </u>
1108	C11.8 LANDSCAPING AND PLANTING PLANTS	R		<u> </u>
1109	C11.9 FINISHING ROAD AND ROAD RESERVE	R		<u> </u>
9	RETAINING WALLS		R	<u> </u>
1206	C12.6 MECH STABILISED FILL AND GABIONS	R		<u> </u>

Section

SUB TOTAL	R	
ADD VAT (15%) - (only if a registered VAT Vendor)	R	
TOTAL CARRIED TO FORM OF OFFER AND ACCEPTANCE (C.1.1)	R	