

SUMMARY OF BILL OF QUANTITIES

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SUB TOTAL			R	
ADD VAT (15%) - (only if a registered VAT Vendor)			R	
TOTAL CARRIED TO FORM OF TENDER			R	

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 PS.9	Monitoring of compliance with and reporting on the EMP	months	6		
		<u>Programming and Reporting</u>				
2	C1.2.2.3 PS.1 PS.C1.2.2.3	Submission of a Scheme 2 Initial Programme	Lump sum	1		
3	C1.2.2.4 PS.1 PS.C1.2.2.3	Submission of a Scheme 2 Full Programme	Lump sum	1		
4	C1.2.2.5 PS.C1.2.2.5	Reviewing and updating a Scheme 2 programme every month	months	6		
		<u>Other Documentation</u>				
5	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>Stakeholder Management & Liaison</u>				
6	C1.2.4 PS.12	Stakeholder Management and Liaison	months	6		
		<u>Health and Safety</u>				
7	C1.2.5.1 PS.10	Health and safety plan	Lump sum	1		
8	C1.2.5.2 PS.10	Implementation of health and safety plan	months	6		
		<u>Community Liaison Officer</u>				
9	PS.13	Allow for 1 CLO's to be appointed	PC Sum	100000	1.00	100,000.00
10	PS.13	Handling costs and profit in respect of PS.12	%	100000		
		<u>Additional Security</u>				
11	PS.15	Provision of security on site to guard against any disruption of the works throughout the duration of the contract	months	6		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL ITEMS**R**

PART0103C1.3 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	50000		
2	C1.3.1.3 PS.C1.3.1	Time-related obligations	months	6		
3	C1.3.2 PS.C1.3.2	Contract sign boards (as per drawing)	no.	1		
4	PS.18.3	Submission of As-Built Data	sum	1		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL ITEMS

R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

SECTION 2 SITE CLEARANCE**PART 0106 C1.6 CLEARING AND GRUBBING**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Clearing				
1	C1.6.1.1 PS.C6.1.1	Clearing with machines and some hand labour where necessary	m2	3840		
		Grubbing				
2	C1.6.2.1 PS.C6.1.1	Grubbing with machines and some hand labour where necessary	m2	3840		
		Removal				
3	C1.6.4.1 PS.C1.6.4.1	Removal of structures: Demolition of brickwork of Manholes and inlets. Depth 0.0m to 1.0m	m3	1.2		

TOTAL CARRIED TO SECTION 2 SUMMARY: SITE CLEARANCE

R

PART 0107 C1.7 LOADING AND HAULING

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Hauling material to spoil				
1	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	384		

TOTAL CARRIED TO SECTION 2 SUMMARY: SITE CLEARANCE

R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

SECTION 3 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 PS.2 PS.18.1	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	100000	1.00	100,000.00
3	C2.1.1.3 PS.3	Handling costs and profit in respect of item C2.1.1.2 above	%	100000		
		<u>Electricity</u>				
4	C2.1.1.2 PS.6	Permanent services relocation or protection work by others: Electricity	PC Sum	50000	1.00	50,000.00
5	C2.1.1.3 PS.6	Handling costs and profit in respect of item C2.1.1.2 above	%	50000		
		<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	30		
7	C2.1.7.1	Extra over item for excavating in hard material irrespective of depth	m3	5		
8	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	30		

TOTAL CARRIED TO SECTION 3 SUMMARY: SERVICES

R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

SECTION 4 DRAINAGE**PART 0301 C3.1 DRAINS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C3.1.4.1(a)	Excavation and disposal of material for subsoil drainage systems: in all material situated within the following depth ranges below the surface:(a) 0 m to 1,5 m	m3	22		
2	C3.1.7.2	Crushed stone obtained from commercial sources (13.2mm stone chips)	m3	8.3		
3	C3.1.8.2	Natural sand from commercial sources (Clean coarse sand)	m3	17		
4	C3.1.9.1	Pipes in subsoil drainage systems: U-PVC pipes and fittings, normal duty, complete with couplings (110 dia. and perforated)	m	35		
5	C3.1.11 PS.C12.11	Geotextiles (Drainage grade, A3.)	m2	70		
6	C3.1.14.3	PVC Caps for subsoil drain pipes for subsoil drain pipes	no	2		
7	C3.1.20	Breaking into existing drainage structures and install subsoil drain pipe	no	1		
8	C3.1.22	Test flushing of subsoil drain pipe systems	no	1		

TOTAL CARRIED TO SECTION 4 SUMMARY: DRAINAGE

R

PART 0302 C3.2 CULVERTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Excavation: Pipes				
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	85		
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	688		
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	38		
		Backfilling: Pipes				
4	C3.2.2.1	Backfilling: Using the excavated material	m3	546		

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
5	C3.2.3.2 PS.C3.2.3.2	Concrete pipe culverts, Spigot and Socket: On Class B bedding (450mm diameter concrete Class 100D) <u>Excavation:</u> <u>Manholes, Inlets and Headwalls</u>	m	402		
6	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	26		
7	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	3		
8	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 <u>Backfilling:</u> <u>Manholes, Inlets and Headwalls</u>	m3	1.5		
9	C3.2.2.1	Backfilling: Using the excavated material <u>Headwalls</u>	m3	117		
10	PS.C3.2.9	Inlets and outlets to culverts: Headwalls, Type A, for 375mm and 450mm pipes <u>Manholes and Inlets</u>	no	2		
11	PS.C3.2.15.2	Manhole: Type A with a heavy duty concrete cover; Depth: Exceeding 0,0m and up to 1,5m	no	4		
12	PS.C3.2.15.2	Inlet: Type S1, heavy duty concrete cover; Depth: Exceeding 0,0m and up to 1,5m	no	5		
13	PS.C3.2.15.2	Inlet: Type S1, heavy duty concrete cover; Depth: Exceeding 1,5m and up to 2,0m	no	1		
14	PS.C3.2.15.2	Inlet: Type D3, heavy duty concrete cover; Depth: Exceeding 0,0m and up to 1,5m <u>Compaction</u>	no	1		
15	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	138		

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
16	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	38		
17	C3.2.16.2	Brickwork (Engineering bricks): 230 mm thick	m2	0		

TOTAL CARRIED TO SECTION 4 SUMMARY: DRAINAGE

R

PART 0303 C3.3 CONCRETE KERBING AND CHANNELING

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	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	480		
2	C3.3.2.1, PS.C3.3.2.1	Prefabricated kerbing, cast in-situ fillet: Type F Mountable Kerb, fig. 6, with 150mm channel, Drawing 38577	m	480		
3	C3.3.3.1, PS.C3.3.2.1	Extra over items C3.3.1 and C3.3.2 for concrete kerbing and channeling / fillet on curves of radii more than or equal to 2,0 m but less than 25 m	m	80		
4	C3.3.4	Extra over item C3.3.2 for drop kerbs and channel / Fillet at pedestrian crossings and driveways (Drawing 38579)	m	27		
		Scoops				
5	C13.4.11	Cast in situ concrete for Pedestrian / Vehicular Scoop (Grade 20/13)	m3	4.2		
		Open Drains				
6	C3.3.6.2	Cast in situ concrete chutes (V Drain, as per drawing) Item to include formation, backfill and compaction, Concrete, reinforcement and formwork	m	35		

TOTAL CARRIED TO SECTION 4 SUMMARY: DRAINAGE

R

PART 1206 C12.6 MECH STABILISED FILL AND GABIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Reno Mattress and Gabions for Headwalls				
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	1.2		
2	C12.6.15	Surface preparation for bedding the reno mattress	m2	4		

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
3	C12.6.16.2	Reno mattress: PVC coated gabion boxes (2.0mx1.0mx0.3m)	m3	1.2		
4	C12.6.17, PS.C12.6.17	Geotextile (Filtertation and separation for use with reno mattress, min Grade 7)	m2	4.5		

TOTAL CARRIED TO SECTION 4 SUMMARY: DRAINAGE R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

SECTION 5 EARTHWORKS**PART 0402 C4.2 CUT MATERIALS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C4.2.4.1 PS.C4.2	Excavating of materials in box cuts for use in the works, material obtained from: Soft excavation	m3	10		
2	C4.2.4.3 PS.C4.2	Excavating of materials in box cuts for use in the works, material obtained from: Boulder excavation class B	m3	19		
3	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	98		
		Excavation to Spoil				
4	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	977.01		
5	C4.2.9.3 PS.C4.2	Excavate material to spoil in sites designated by the Contractor, material obtained from: Boulder excavation class B	m3	19		
6	C4.2.9.4 PS.C4.2	Excavate material to spoil in sites designated by the Contractor, material obtained from: Hard excavation (other than by blasting)	m3	98		
		Finishing of Banks				
7	C4.2.12.1(a)	Finishing the side slopes of Cuttings: (a) In soft material	m2	615.25		

TOTAL CARRIED TO SECTION 5 SUMMARY: EARTHWORKS

R

PART 0502 C5.2 FILL

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C5.2.11.1	Finishing-off fill slopes	m2	560		

TOTAL CARRIED TO SECTION 5 SUMMARY: EARTHWORKS

R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

SECTION 6 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	373		
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	439		
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	439		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

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	439		
2	C5.1.4.2(a)	Removal of unsuitable material to spoil: In layer thicknesses exceeding 200 mm (a) Stable material	m3	60		
3	C5.1.5.1	In-place treatment of roadbed in hard material: by ripping	m3	30		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

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	373		
3	C5.3.2.1(j)	Construction of layers: Lower subbase (G5) layer compacted to 95 % of MDD	m3	439		
4	C5.3.2.1(b)	Construction of layers: Upper selected subgrade layer (G7) compacted to 95 % of MDD	m3	439		

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
5	C5.3.2.1(m)	Sidewalk Sidewalk selected layer (G2) compacted to 98 % of MDD	m3	4.5		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

R

PART 0901 C9.1 ASPHALT LAYERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C9.1.1.2(a) PS.C9.1	Asphalt Mix Designs Sand skeletal mixes: Continuously graded base or surfacing (SA-S14).	Lump sum	3500		
2	C9.1.3.1 PS.C9.1	Bond Coat (Tack) Application of bond coat: Stable –grade 30 % net bitumen emulsion as specified. Applied with a calibrated distributor	l	1366		
3	C9.1.5.1(e) PS.C9.1	Asphalt Surface New construction (paver laid) (a) Stone skeletal mix – continuously graded (SA-S14) (50mm layer)	m2	2484		
4	C8.1.1.2	Prime coat: MC -30 cut-back bitumen. 0.8l/m2	l	1988		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

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	60		
2	PS.C12.3.20	Supply and place minimum grade 5 geofabric to dumprock layer.	m2	220		
3	C12.3.19 PS.C12.3.20	Importing G7 quality material from approved sources, to be applied over dumprock layer.	m3	22		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

SECTION 7 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	30		
2	C11.4.1.2(a)	Terminal sections for 3,81 guardrails comprising of: (a) End wings to SANS 1350	no	2		
3	C11.4.4.1	Extra over C11.4.1 for horizontally curved guard rails factory bent to a radius of less than 45m	m	10		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

R

PART 1105 C11.5 FENCING

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.5.4.1(d)	Dismantling existing fences: (d) Security fences	m	144		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

R

PART 1106 C11.6 ROAD SIGNS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.6.1.3(b)	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: (b) Area exceeding 0,5 m2 but not 2,0 m2	m2	2		
2	C11.6.3.1	Road sign supports: Steel tubing (75m diameter), Galvanised	m	4		
3	C13.4.11	Cast in situ concrete for road sign footings as directed by the Engineer (Grade 20/19)	m3	1.8		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

R

PART 1107 C11.7 ROAD MARKINGS AND ROAD STUDS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C11.7.1.4 PS.C11.7.1	<u>Lettering and Symbols</u> White lettering and symbols	m2	8		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

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	117		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

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	0.44		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

R

GRAVEL TO ASPHALT UPGRADE OF TRK 87122, INANDA, WARD 108

SECTION 8 RETAINING WALLS**PART 1206 C12.6 MECH STABILISED FILL AND GABIONS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Segmented Block walls (Geolock or similar approved)</u>				
1	C12.6.2	Excavation for wall base foundation	m3	26		
2	C12.6.3	Concrete for wall base foundation (25/26)	m3	8		
3	C12.6.7	Metallic reinforcing mesh (Mesh Ref. 245)	m2	36		
4	C12.6.12.2	Facings (Geolock wall as per drawing for wall 0-2m): For concrete block wall facing	m2	58		
5	C12.6.13	Drainage (50mm weepholes installed inclusive of all elements as per drawing)	no	16		
6	C12.6.11	Backfill (compacted to 95%MDD)	m3	20		
7	C12.6.17	Geotextile (Drainage A3)	m2	92		
8	C12.6.3	Concrete for wall Top blocks of wall (25/26)	m3	1.4		
9	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	45		
10	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	50		

TOTAL CARRIED TO SECTION 8 SUMMARY: RETAINING WALLS**R**

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SECTION 6 LAYERWORKS

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TOTAL CARRIED TO FINAL SUMMARY		

BILL OF QUANTITIES SECTION SUMMARY**SECTION 7 ANCILLARY ROAD WORKS**

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TOTAL CARRIED TO FINAL SUMMARY			

SECTION 8 RETAINING WALLS

PART	1206	C12.6 MECH STABILISED FILL AND GABIONS	
TOTAL CARRIED TO FINAL SUMMARY			