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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	9		
2	C1.2.2.4 PS.C1.2.2.3	Submission of a Full Contract Programme	Lump sum	1		
3	C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	months	9		
		<u>Stakeholder Management & Liaison</u>				
4	C1.2.4 PS.20	Stakeholder Management and Liaison	months	9		
		<u>Health and Safety</u>				
5	C1.2.5.1 PS.9	Health and safety plan	Lump sum	1		
6	C1.2.5.2 PS.9	Implementation of health and safety plan	months	9		
		<u>Community Liaison Officer</u>				
7	PS.12	Allow for 1 CLO's to be appointed	PC Sum	200000	1.00	200,000.00
8	PS.12	Handling costs and profit in respect of PS.12	%	200000		
		<u>Additional Security</u>				
9	PS.11	Provision of security on site to guard against any disruption of the works throughout the duration of the contract	months	9		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL ITEMS**R****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	C1.3.1.3 PS.C1.3.1	Time-related obligations	months	9		
3	C1.3.2 PS.C1.3.2	Contract sign boards (as per drawing)	no.	1		
4	PS.17	Submission of As-Built Data	sum	1		

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

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

PART 0104 C1.4 FACILITIES FOR THE ENGINEER

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C1.4.3.31	Rain gauge	no	1		
2	PS.16 PS.18 PS.20	Allowance for the additional survey required by the Engineer	PC Sum	15000	1.00	15,000.00
3	PS.16 PS.18 PS.20 CL.6.6.2 (GCC 2015)	Handling costs in respect of item above	%	15000		
4	PS.14.2 PS.17 PS.19	Cost of Samples and Contractor's Preliminary and Site Control Testing	sum	1		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL ITEMS

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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	9		
2	C1.5.2 PS.1.3	Accommodation of vehicular traffic	months	9		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL ITEMS

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Clearing				
1	C1.6.1.1	Clearing with machines and some hand labour where necessary	m2	2500		
2	C1.6.1.2	Clearing with hand labour only when labour enhanced work is specified	m2	500		
		Grubbing				
3	C1.6.2.1	Grubbing with machines and some hand labour where necessary	m2	2500		
4	C1.6.2.2	Grubbing with hand labour when labour enhancement work is specified or it is not practical to use a machine	m2	200		
		Removal and Grubbing of Large Trees and Tree Stumps				
5	C1.6.3.1	Girth equal to or exceeding 1,0 m up to and including 2,0 m	no	4		
6	C1.6.3.2	Girth exceeding 2,0 m up to and including 3,0 m	no	2		
7	C1.6.3.3	Girth exceeding 3,0 m	no	1		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

Part Continued **PART** 0106 C1.6 CLEARING AND GRUBBING

Item	Clause	Description	Unit	Quantity	Rate	Amount
8	C1.6.4.1 PS.C1.6.4.1	Removal Removal of structures: Demolition of unreinforced concrete.	m3	50		

TOTAL CARRIED TO SECTION 2 SUMMARY: SITE CLEARANCE

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PART 0107 C1.7 LOADING AND HAULING

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C1.7.2.2(a)	Hauling material to spoil and off-loading it at a designated spoil area:(a) Cleared and grubbed material (organic matter and all other unsuitable or waste material)	m3 * km	250		

TOTAL CARRIED TO SECTION 2 SUMMARY: SITE CLEARANCE

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SECTION 3 SERVICES**PART** 0201 C2.1 GEN REQMENTS AND TRENCHING SERVICE

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C2.1.1.1	Location, Identification, Protection and Relocation of Existing Services Contractor's obligation	Lump sum	1		
2	C2.1.2.5 PS.2.2	Proving By Hand Using hand excavation to locate, expose and verify services, Depth of 0.0m to 1.5m. (Prov)	m3	400		
3	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	150		
4	C2.1.6.1(a) PS.C2.1.6	Cable Ducts Trench excavation (in soft material): Trenches up to 1,0 m wide (a) Up to 1,0 m deep	m3	100		
5	C2.1.11.1(a)	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	50		

TOTAL CARRIED TO SECTION 3 SUMMARY: SERVICES

R

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

PART 023A C2.3A WET SERVICES - SEWERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C2.3.9.1(a)	Raising manholes: (a) State manhole type and drawing reference and height raised.To be finalised on site with Engineer.	no	2		
2	C2.3.9.2(a)	Lowering manholes:(a) State manhole type and drawing reference and height lowered.Measured and paid per number actually completed.	no	2		

TOTAL CARRIED TO SECTION 3 SUMMARY: SERVICES

R

PART 023B C2.3B WET SERVICES - WATER MAINS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C2.3.21.1(a)	Supply and lay water mains complete with couplings:State for each water main the pipe material type, class, coupling type and the class of bedding etc.(a) State diameter-Ridermain. To be confirmed by the Employer's Agent Rep prior to installation.	m	150		
2	C2.3.23.1(a)	Extra over item C2.3.21 for supplying and fixing water main valves:State for each water main valve the type, class etc.(a) State diameter	no	2		
3	C3.2.2.2(a)	Backfilling: Using imported selected material:(a) From commercial source G9	m3	120		
4	C2.3.29.2(a)	Bedding for water mains (Class B and C) and fill blanket compacted to 90 % of MDD (100 % for sand):Bedding using selected granular material : € From commercial source-Clean course River sand	m3	85		

TOTAL CARRIED TO SECTION 3 SUMMARY: SERVICES

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C3.1.1.1(a)	Excavation for open drains: Excavating all material situated within the following depth ranges below the surface level using conventional methods: (a) 0 m to 1,5 m	m3	350		
2	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	100		
3	C3.1.1.1(b)	(b) Exceeding 1,5 m and up to 3,0 m	m3	50		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

Part Continued **PART** 0301 C3.1 DRAINS

Item	Clause	Description	Unit	Quantity	Rate	Amount
4	C3.1.7.2	Crushed stone obtained from commercial sources (13.2mm stone chips)	m3	150		
5	C3.1.8.2	Natural sand from commercial sources (Clean coarse sand)	m3	150		
6	C3.1.9.1	Supply and Lay 110mm Kaytech rigid Geopipe (or approved equivalent) plastic subsoil pipe approved equivalent) geofabric for subsoil drains	m	100		
7	C3.1.11 PS.C12.11	Provision of drainage grade Kaytech A2 (or approved equivalent) geofabric for subsoil drains	m2	400		
8	C3.1.20	Breaking into existing drainage structures and install subsoil drain pipe	no	2		
9	C3.1.22	Test flushing of subsoil drain pipe systems	no	1		
10	C3.1.21.2	Clearing of existing subsoil drains: Hydro jetting	m	20		

TOTAL CARRIED TO SECTION 4 SUMMARY: DRAINAGE

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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	150		
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	100		
3	C3.2.1.1(c) 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 3,0 m and up to 4,5 m	m3	50		
4	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	50		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Backfilling:</u> <u>Pipes</u>				
5	C3.2.2.1	Backfilling: Using the excavated material	m3	100		
6	C3.2.3.2 PS.C3.2.3.2	Concrete pipe culverts, Spigot and Socket: On Class B bedding (450mm diameter concrete Class 100D)	m	20		
7	C3.2.3.2 PS.C3.2.3.2	Concrete pipe culverts, Spigot and Socket: On Class B bedding (600mm diameter concrete Class 100D)	m	50		
		<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	100		
		<u>Headwalls</u>				
9	PS.C3.2.9	Inlets and outlets to culverts: Headwalls, Type A, for 450mm pipes	no	1		
10	PS.C3.2.9	Inlets and outlets to culverts: Headwalls, Type A, for 600mm pipes	no	1		
		<u>Manholes and Inlets</u>				
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	1		
12	PS.C3.2.15.2	Inlet: Type S2, heavy duty concrete cover; Depth: Exceeding 0,0m and up to 1,5m	no	2		
		<u>Compaction</u>				
13	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	10		
		<u>Chutes</u>				
14	C3.3.6.1	Prefabricated concrete chutes (minimum size 0.3m wide x 0.15m depth).item to include all materials,formation,backfill & installation.	m	300		
		<u>Alterations to Existing</u>				
15	PS.C3.2.30	Raise/Lower manhole in paved area by :- 0 to 250mm	no	2		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
16	C3.2.16.2	Brickwork (Engineering bricks): 230 mm thick	m2	35		
17	C3.2.19.2	Accessories: Inlet Covers frames: Type S2, Heavy Duty Concrete.	no	1		

TOTAL CARRIED TO SECTION 4 SUMMARY: DRAINAGE

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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 F mountable Kerb, fig. 6, with 150mm channel, Drawing 38577	m	400		
2	C3.3.2.1, PS.C3.3.2.1	Prefabricated kerbing, cast in-situ channeling: Type D Barrier Kerb, fig.6, with 300mm fillet, Drawing 38577	m	150		
3	C3.3.2.2	Cast in situ kerbing-channeling	m3	2		
4	C3.3.3.1, PS.C3.3.2.1	Extra over items C3.3.1 and C3.3.2 for concrete kerbing and channeling on curves of radii more than or equal to 2,0 m but less than 25 m	m	30		
5	C3.3.3.2, PS.C3.3.2.1	Extra over items C3.3.1 and C3.3.2 for concrete kerbing and channeling on curves with radii less than 2,0 m	m	30		
6	C3.3.4	Extra over item C3.3.2 for drop kerbs and channel / Fillet at pedestrian crossings and driveways (Drawing 38579)	m	30		
		<u>Sidewalk Edge Restraint</u>				
7	C3.3.2.1, PS.C3.3.2.1	Prefabricated kerbing (edge restraint, Figure 12 kerb including 100mm x 100mm haunching)	m	100		
		<u>Clearing</u>				
8	C3.3.16	Demolition and removal of existing kerbs and/or channel	m3	20		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Open Drians				
9	C3.3.6.2	Cast in situ concrete (Grade 25/19) chutes (V Drain, 1000mm wide and 100mm thickness) including all excavation, trimming and preparation of foundation, bedding preparation, formwork, Ref 193 welded mesh reinforcement, concrete placing, compaction, finishing, curing, construction and expansion joints, joint sealant, backfilling, compaction, disposal of surplus material and all labour, plant and materials necessary to complete the work.	m	150		
10	C3.3.6.2	Cast in situ concrete (Grade 25/19 thickness) (600mm wide, 100mm thickness) including all excavation, trimming and preparation of foundation, bedding preparation, formwork, Ref 193 welded mesh reinforcement, concrete placing, compaction, finishing, curing, construction and expansion joints, joint sealant, backfilling, compaction, disposal of surplus material and all labour, plant and materials necessary to complete the work. including formwork, reinforcement, expansion joints and finishing.	m	500		
11	C3.3.6.2	Cast in situ concrete between road verge and v - drain (Grade 25/19) - Rate to include all preparation, plant, labour, excavation, formation, shuttering, materials, expansion joints and Ref 193 reinforcing mesh and sealant to joints.	m	50		
12	C3.3.8.3(a)	Stone pitched lining, 200 mm thick, comprising grouted stone pitching including all mortar, jointing and ancillary work.	m2	250		

TOTAL CARRIED TO SECTION 4 SUMMARY: DRAINAGE

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C4.2.1.1	Compiling and implementing M&U plans for the cuttings exceeding 3 000 m3 up to 10 000 m3	no	1		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

Part Continued **PART** 0402 C4.2 CUT MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Excavation to Stockpile or Fill</u>				
2	C4.2.3.1 PS.C4.2	Excavating of materials in cuttings for use in the works, material obtained from: Soft excavation	m3	400		
3	C4.2.3.3 PS.C4.2	Excavating of materials in cuttings for use in the works, material obtained from: Boulder excavation class B	m3	150		
4	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		
5	C4.2.4.1 PS.C4.2	Excavating of materials in box cuts for use in the works, material obtained from: Soft excavation	m3	400		
6	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	50		
7	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	10		
8	C1.7.1.1	Loading from stockpile using machines and some hand labour where necessary	m3	600		
		<u>Removal of Unsuitable (Undercut)</u>				
9	C4.2.7.1	Removal of unsuitable stable cut material to spoil: In layer thicknesses of 200 mm and less	m3	800		
10	C4.2.7.2	Removal of unsuitable stable cut material to spoil: In layer thicknesses exceeding 200 mm	m3	250		
		<u>Excavation to Spoil</u>				
11	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	4500		
12	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	450		
13	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	200		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

Part Continued **PART** 0402 C4.2 CUT MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Finishing of Banks				
14	C4.2.12.1(a)	Finishing the side slopes of Cuttings: (a) In soft material	m2	1200		
15	C4.2.12.1(b)	Finishing the side slopes of Cuttings: (b) In boulder material class A and B	m2	350		

TOTAL CARRIED TO SECTION 5 SUMMARY: EARTHWORKS

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PART 0403 C4.3 EXISTING ROAD MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Saw-cut				
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	C4.3.4.1(b)	Saw-cutting existing materials within the following average depth ranges:Asphalt:(b) Exceeding 50 mm and up to 100 mm.	m	20		
3	C4.3.9.2 PS.C4.2	Excavating material by using conventional road construction equipment to stockpile: Crushed stone and macadam materials	m3	30		
4	C4.3.9.4 PS.C4.2	Excavating material by using conventional road construction equipment to stockpile: Natural gravel and sand materials.	m3	30		
5	C4.3.18.1 PS.C4.2	Excavate non-compliant or excess pavement layer material to spoil in sites designated by the Contractor, material consisting of: Asphalt material	m3	30		

TOTAL CARRIED TO SECTION 5 SUMMARY: EARTHWORKS

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PART 0404 C4.4 COMMERCIAL MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Import Fill Material				
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	450		
2	C4.4.2.1(l)	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers: Pavement layer material:Type G9	m3	150		

TOTAL CARRIED TO SECTION 5 SUMMARY: EARTHWORKS

R

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

PART 0502 C5.2 FILL

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C5.2.1.1	Compiling and implementing M&U plans: For fills more than 3000 m3 <u>Processing and Compaction</u>	no	1		
2	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	150		
3	C5.2.3	Side-cut to fill compacted to 93 % of MDD in compacted layer thicknesses of 200 mm and less	m3	50		
4	C5.2.11.1	Finishing-off fill slopes	m2	100		

TOTAL CARRIED TO SECTION 5 SUMMARY: EARTHWORKS

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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	600		
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	450		
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	700		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

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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 <u>Removal of Unsuitable: Undercut</u>	m3	1000		
2	C5.1.4.1(a)	Removal of unsuitable material to spoil: In layer thicknesses of 200 mm and less (a) Stable material	m3	750		
3	C5.1.4.2(a)	Removal of unsuitable material to spoil: In layer thicknesses exceeding 200 mm (a) Stable material	m3	250		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

Part Continued **PART** 0501 C5.1 ROADBED

Item	Clause	Description	Unit	Quantity	Rate	Amount
4	C5.1.5.1	In-place treatment of roadbed in hard material: by ripping	m3	150		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

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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		
		Processing and Compaction				
2	C5.3.2.1(k)	Construction of layers: Upper subbase (G2) layer compacted to 98 % of MDD	m3	600		
3	C5.3.2.1(j)	Construction of layers: Lower subbase (G5) layer compacted to 95 % of MDD	m3	650		
4	C5.3.2.1(b)	Construction of layers: Upper selected subgrade layer (G7) compacted to 95 % of MDD	m3	700		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

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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-S10).	Lump sum	1		
		Bond Coat (Tack)				
2	C9.1.3.1 PS.C9.1	Application of bond/tack coat: Stable –grade 30 % net bitumen emulsion as specified. Applied with a calibrated distributor	l	3500		
		Asphalt Surface				
3	C9.1.5.1(e) PS.C9.1	40 mm Asphalt Surfacing: Stone skeletal mix, continuously graded (SA-S10), paver laid and compacted, including supply, manufacture, transport, laying, compaction, joints, tie-ins, trimming and testing, complete in accordance with COTO requirements.	t	450		

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

Part Continued **PART** 0901 C9.1 ASPHALT LAYERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
4	C8.1.1.2	Prime coat: MC -30 cut-back bitumen. 0.8l/m ² at a nominal residual binder application rate of 0.8 l/m ² , including supply, heating, spraying and protection of the primed surface, complete in accordance with COTO requirements.	l	3500		

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	m ³	450		
2	C3.1.11 PS.C12.3.20	Supply and place minimum grade 5 geofabric to dumprock layer(minimum Grade 5 non-woven geotextile, Bidim A3 or approved equivalent) beneath dump rock subgrade improvement layer, including supply, delivery, surface preparation, laying, overlaps, anchoring, trimming and all incidentals, complete as per drawings. Measurement shall be the actual area installed and accepted by the Engineer. No separate payment shall be made for wastage, damage, replacement or excessive overlaps.	m ²	400		
3	C12.3.20 PS.C12.3.20	Importing dump rock for subgrade improvement, 500mm thick	m ³	100		
4	C12.3.19 PS.C12.3.20	Importing G5 quality material from approved sources, to be applied over dumprock layer.	m ³	500		

TOTAL CARRIED TO SECTION 6 SUMMARY: LAYERWORKS

R

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	50		
2	C11.4.1.2(a)	Terminal sections for 3,81 guardrails comprising of: (a) End wings to SANS 1350	no	2		
3	C11.4.6.2	Reflective Plastic plates	no	20		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

R

Upgrading of Gravel Tracks to Asphalt Surface in Thornwood Dassenhoek-Pinetown South Ward 14

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	50		
2	C11.5.1.9(a)(i)	Straining posts, stays and anchors:(a) Vertical (Concrete straining post)	no	5		

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(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	10		
2	C11.6.3.2	Road sign supports:Timber (100mm diameter)	m	15		
3	C11.6.5.1	Excavation and backfilling for road sign supports:Excavating soft material and backfilling	m3	4		
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	3		

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
		<u>Lettering and Symbols</u>				
1	C11.7.1.4 PS.C11.7.1	White lettering and symbols - Thermoplastic	m2	30		
		<u>Transverse Lines and Painted Islands</u>				
2	C11.7.1.7 PS.C11.7.1	Transverse lines, painted island and arrestor bed markings (White)	m2	20		
		<u>Broken and Unbroken Lines</u>				
3	C11.7.1.1 PS.C11.7.1	Road marking, broken or unbroken (White, 100mm wide)	m	400		

TOTAL CARRIED TO SECTION 7 SUMMARY: ANCILLARY ROAD WORKS

R

SECTION 8 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	50		
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	20		
3	C12.6.15	Surface preparation for bedding the gabions	m2	100		
4	C12.6.16.2	Gabions and Reno mattresses: PVC coated gabion boxes (1.0mx1.0mx2.0m) Gabion retaining walls shall comprise PVC coated gabion baskets, nominal basket size 1.0 m × 1.0 m × 2.0 m with 0.5 m deep top baskets where required, complete with diaphragms, lacing wire, stone fill and Grade 7 geotextile. Wall configuration and batter shall be as detailed on the drawings.	m3	150		
5	C12.6.16.4	Gabions and mattresses: PVC-coated gabion mattresses 300 mm thick, complete with diaphragms, lacing wire, stone fill, assembly, placement, tying, shaping and all incidentals, including geotextile measured separately, complete as per drawings.	m3	200		
6	C12.6.17, PS.C12.6.17	Geotextile (Grade 7 non-woven needle-punched geotextile, Bidim A4 or approved equivalent) for filtration and separation behind and beneath gabion baskets and Reno mattresses, including supply, delivery, laying, overlaps, anchoring and all incidentals, complete as per drawings. Measurement shall be the actual area installed and accepted by the Engineer. No payment shall be made for wastage, damage, replacement or excessive overlaps.	m2	300		
		<u>Segmented Block walls (Geolock or similar approved)</u>				
7	C12.6.2	Excavation for wall base foundation	m3	50		
8	C12.6.3	Concrete for wall base foundation (25/26)	m3	20		

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
9	C12.6.7	Metallic reinforcing mesh (Mesh Ref. 245)	m2	100		
10	C12.6.12.2	Facings (Geolock wall as per drawing for wall 0-2m): For concrete block wall facing	m2	50		
11	C12.6.13	Drainage (50mm weepholes installed inclusive of all elements as per drawing)	no	10		
12	C12.6.11	Backfill (compacted to 95%MDD)	m3	30		
13	C12.6.3	Concrete for wall Top blocks of wall (25/26)	m3	1		

TOTAL CARRIED TO SECTION 8 SUMMARY: RETAINING WALLS R

SUMMARY OF BILL OF QUANTITIES**Section**

1	PRELIMINARY AND GENERAL ITEMS		R	_____
0102	C1.2 GENERAL REQUIREMENTS AND PROVISIONS	R	_____	
0103	C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND	R	_____	
0104	C1.4 FACILITIES FOR THE ENGINEER	R	_____	
0105	C1.5 ACCOMMODATION OF TRAFFIC	R	_____	
2	SITE CLEARANCE		R	_____
0106	C1.6 CLEARING AND GRUBBING	R	_____	
0107	C1.7 LOADING AND HAULING	R	_____	
3	SERVICES		R	_____
0201	C2.1 GEN REQMENTS AND TRENCHING SERVICE	R	_____	
023A	C2.3A WET SERVICES - SEWERS	R	_____	
023B	C2.3B WET SERVICES - WATER MAINS	R	_____	
4	DRAINAGE		R	_____
0301	C3.1 DRAINS	R	_____	
0302	C3.2 CULVERTS	R	_____	
0303	C3.3 CONCRETE KERBING AND CHANNELING	R	_____	
5	EARTHWORKS		R	_____
0402	C4.2 CUT MATERIALS	R	_____	
0403	C4.3 EXISTING ROAD MATERIALS	R	_____	
0404	C4.4 COMMERCIAL MATERIALS	R	_____	
0502	C5.2 FILL	R	_____	
6	LAYERWORKS		R	_____
0404	C4.4 COMMERCIAL MATERIALS	R	_____	
0501	C5.1 ROADBED	R	_____	
0503	C5.3 ROAD PAVEMENT LAYERS	R	_____	
0901	C9.1 ASPHALT LAYERS	R	_____	
1203	C12.3 GROUND IMPROVEMENT	R	_____	
7	ANCILLARY ROAD WORKS		R	_____
1104	C11.4 ROAD RESTRAINT SYSTEMS	R	_____	
1105	C11.5 FENCING	R	_____	
1106	C11.6 ROAD SIGNS	R	_____	
1107	C11.7 ROAD MARKINGS AND ROAD STUDS	R	_____	
8	RETAINING WALLS		R	_____
1206	C12.6 MECH STABILISED FILL AND GABIONS	R	_____	

Section

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