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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
		Health and Safety				
1	C1.2.5.1	Prepare, submit, maintain and implement a Health and Safety Plan in accordance with the Occupational Health and Safety Act, Construction Regulations and Contract Requirements, complete	Lump sum	1		
2	C1.2.5.2	Implementation, maintenance and monitoring of the approved Health and Safety Plan for the duration of the Contract, in accordance with the Occupational Health and Safety Act and Construction Regulations	months	15		
		Environmental Management				
3	C1.2.1.1	Monitoring compliance with and reporting on the Environmental Management Programme (EMP), including inspections, record keeping, corrective actions, reporting and liaison with the Engineer, complete for the duration of the Contract	months	15		
		Programming and Reporting				
4	C1.2.2.4	Preparation, submission, updating and resubmission of the Full Contract Programme, including resource loading, cash flow projections, method statements,4programme updates and revisions as required by the Engineer, complete	Lump sum	1		
		Other Documentation				
5	C1.2.2.6	Preparation and submission of all information, returns, records and reports required in terms of the Contract Documentation, including reporting on local labour, labour statistics, progress reports, procurement reports and all associated administration, complete for the duration of the Contract	months	15		

Part Continued on next page

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Stakeholder Management & Liaison (CLO)				
6	C1.2.4 C1.2.3	Stakeholder Management and Liaison, including Community Liaison Officer (CLO), stakeholder engagement, liaison with local communities, labour liaison, public communication, meeting attendance, reporting and all associated administration for the duration of the Contract	months	15		
7		Surveying and setting out of the Works, including establishment and maintenance of benchmarks, control points, levels, profiles, checking of dimensions, as-built surveys and all associated survey requirements for the duration of the Contract	PC Sum	30000	1.00	30,000.00
8		Handling Costs and Profit in respect of sub-item 1.0102.7 for Surveying and Setting Out of the Works	%	30000		
9		Submission of As-Built Drawings by the Contractor. Prepare and submit complete as-built drawings and records for the Works as constructed, including all surveys, measurements, drafting, revisions and submissions required by the Contract	sum	1		

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

PART 0103 C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND

Item	Clause	Description	Unit	Quantity	Rate	Amount
		The Contractor's General Obligations				
1	C1.3.1.1	Fixed obligations	Lump sum	1		
2	C1.3.1.3	Time-related obligations	months	15		

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

SECTION 2 SITE CLEARANCE

PART 0106 C1.6 CLEARING AND GRUBBING

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C1.6.1.1	Clearing with machines and some hand labour where necessary, including the removal of grass, shrubs, bushes, rubbish, debris, vegetation and other obstructions from the surface, complete	m2	8180		
2		Disconnect, dismantle, remove and load existing metal containers onto trucks using a suitable crane and transport to the designated collection point for Metro Water. The item shall include all labour, crane hire, trucking, loading, off-loading, handling, making good disturbed areas, and all ancillary operations required for the complete removal of the containers from site.	PC Sum	50000	1.00	50,000.00
3		Handling Costs and Profit in respect of sub-item 2.0106.7 for Removal of Containers	%	50000		

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

SECTION 3 DRAINAGE

PART 0302 C3.2 CULVERTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Excavation: **Pipes**				
1	C3.2.1.1(a)	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	260		
2	C3.2.1.1(b)	(b) Exceeding 1,5 m and up to 3,0 m	m3	585		
		Backfilling: **Pipes**				
3	C3.2.2.2(a)	Backfilling: Using imported selected material: (a) From commercial sources (Using granular material) - G7 material or better	m3	300		
4	C3.2.2.2(a)	Backfilling: Using imported selected material:(a) From commercial source(Clean course River Sand)	m3	170		
		Concrete Pipes: Spigot and Socket Type				
5	C3.2.3.2	Supply and Install Concrete pipe culverts, Spigot and Socket: On Class B bedding (450mm diameter concrete pipe Class 100D)	m	340		
6	C3.2.3.2	Supply and Install HDPE 6m length pipe culverts smooth interior, couplers with rubber rings: On Class B bedding (450mm diameter SN8 HDPE)	m	150		
		Compaction				
7	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	170		
		Manholes and Inlets				
8	C3.2.16.2	Construct Brickwork Manholes and Inlets Type A - in engineering bricks, 230 mm thick, built in Class I cement mortar, complete, including all materials, labour, bonding, jointing, cutting and fitting (Refer to standard drawing no.38571 & 38572 & 38573)	m2	450		

Part Continued on next page

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
9	C3.2.18	Benching in manholes, formed in 20 MPa concrete, finished smooth to the required profile around channels, complete	m3	20		
10	C3.2.19.1	Supply and Install Manhole inlet frames and inlet splays (Refer to standard drawing no.38571 & 38572 & 38573) - Heavy Duty Concrete	no	30		
11	C3.2.19.4	Supply and Install Manhole covers and lids (Refer to standard drawing no.38571 & 38572 & 38573) - Heavy Duty Concrete	no	28		
12	C3.2.7.2	Cast in situ concrete and formwork: In complete in situ floor slabs for rectangular culverts, manholes and catchpits including formwork, joints and Class U2 surface finish (class of concrete indicated) (installed at a standard depth of 1,0 m)	m3	12		
13	C3.2.19.1	Supply and Install compression moulded Heavy duty polymer type 2B ventilated cover and lid.	no	10		
14	C3.2.19.4	Supply and Install Type 2B ventilated cast iron cover, lid and frame.	no	10		

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

SECTION 4 BULK EARTHWORKS

PART 0402 C4.2 CUT MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Excavation to Stockpile or Fill				
1	C4.2.3.1	Excavating of materials in cuttings and stockpile for use in the works, material obtained from: Soft excavation	m3	1665		
2	C1.7.1.1	Loading from stockpile using machines and some hand labour where necessary	m3	1665		
		Excavation to Spoil				
3	C4.2.8.1	Excavate material to spoil in sites designated by the Employer, material obtained from:Soft excavation, overburden and unsuitable material and stockpile	m3	500		
		Rock Fragmentation				
4	C4.2.3.4	Breaking down and removal of oversize material, hard rock and boulders Class A (20t Excavator or similar and Mechanical Hammer)	m3	50		

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
		Import Fill Material				
1	C4.4.1.1(c)	Commercial materials from commercial source for fill shortfall material - Type G7 material	m3	600		

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

SECTION 5 KERBING

PART 0303 C3.3 CONCRETE KERBING AND CHANNELING

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Kerbs and Channel / Fillet				
1	C3.3.2.1,	Prefabricated kerbing, cast in-situ channeling / fillet: Type B Barrier Kerb, fig. 6, with 600x50mm concrete base of 25Mpa as per standard Drawing 38577	m	1800		
2	C3.3.16	Demolition and removal of existing kerbs and/or channels, including breaking out, loading, hauling, disposal of material and making good, complete	m3	20		

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

SECTION 6 LAYERWORKS AND SURFACING

PART 0404 C4.4 COMMERCIAL MATERIALS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Import Layerworks- Roadworks				
1	C4.4.2.1(d)	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers: Pavement layer material:Type G4	m3	640		
2	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	665		
		Import Layerworks - Sidewalk				
3	C4.4.2.1(d)	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers: Sidewalk layer material:Type G4	m3	80		

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
		Processing and Compaction - Roadworks				
1	C5.3.2.1 (c)	(c) Upper selected subgrade layer G7 (300mm in 2 layers of 150mm) compacted to 95 % of MDD	m3	1265		
2	C5.3.2.1(k)	(k) Upper subbase gravel layer G4 (unstabilised), (150mm) compacted to 97 % of MDD	m3	770		

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

PART 0801 C8.1 PRIME COAT

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C8.1.1.2	Prime coat using MC-30 cut-back bitumen applied at 0.6 litres per square metre, including supply, heating, spraying and all ancillary costs complete	m2	4100		

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
1	C9.1.5.1(a)	Private Plant Asphalt Sa-S14. Bitumen content % as per mix design entered at time of use.	t	510		

Part Continued on next page

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	C9.1.3.1	Tack coat using approved stable grade bituminous binder applied at a rate of 0.3 litres per square metre, including supply, heating where necessary, spraying and all ancillary costs complete	m2	4100		
		Sidewalk				
3	C9.1.5.1(a)	Private Plant Asphalt Sa-S10. Bitumen content % as per mix design entered at time of use.	m2	820		
4	C9.1.5.1(a)	Private Plant Asphalt Sa-S10. Bitumen content % as per mix design entered at time of use.	m2	100		

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

PART 1304 C13.4 CONCRETE

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Concrete Vehicular Scoops and Accesses				
1	C13.3.3	Concrete residential vehicular access hardening,100 mm thick, using 25 MPa concrete, including placing, finishing, curing, joints and all incidentals complete	m3	25		

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

SECTION 7 REINSTATEMENTS

PART 1301 C13.1 FOUNDATIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Boundary Wall Foundations				
1		Foundation concrete blinding placed and compacted beneath foundations complete in accordance with the Specifications	m3	15		
2		Excavation for structures in all materials : Depth 0 m to 1.5 m	m3	95		
3		Concrete footings, 20 MPa strength, cast in foundations, complete including mixing/supply, placing, vibrating, compacting and finishing.	m3	90		
		Boundary Walls				
4		Supply and install 230 mm brickwork in Class 1 cement mortar, including all labour, materials, cutting, bonding, joints and incidentals complete	m2	700		
5		Supply and install 190 mm concrete blockwork boundary wall constructed in cement mortar, complete including3all materials, labour, cutting, bonding, jointing and incidentals	m2	25		
6		Weepholes comprising 50 mm diameter uPVC pipe, cut to 0.5 m length and built into wall complete	no	200		
7		110 mm diameter perforated uPVC subsoil drain,laid behind retaining wall including geotextile wrap, drainage stone surround, fittings and complete installation	m	300		
		Gabion Structures				
8		Supply, assemble, fill and install gabion baskets, galvanized and PVC-coated where specified, including rock fill, lacing wire, tying, placing, alignment and all incidentals complete	m3	300		
		Retaining Wall Structures				
9		Supply and install L500 retaining wall blocks or approved equivalent, including geotextile filter fabric (Bidim A7 or approved equivalent), placement, alignment, cutting, backfill interface and all incidentals necessary to complete the retaining wall	m2	20		

Part Continued on next page

Part Continued **PART 1301 C13.1 FOUNDATIONS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
10	C13.1.7.1	Backfill to excavations utilising approved material from excavation, placed in layers and compacted to the specified density	m3	700		
11	C13.1.7.2	Backfill to excavations utilising approved material from stockpile, placed in layers and compacted to the specified density	m3	300		
12		Cement bag finish to exposed external faces of wall, including preparation of surfaces, application of cement slurry/mortar, rubbing to a uniform finish and all labour, materials and incidentals complete	m2	100		
		Ancillary Work on Property Boundary				
13		Raise or lower existing gates including gates, rails and posts, complete with excavation, reinstatement, realignment, refixing, concreting, making good and all incidentals	no	10		

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

C.2.2.3 : 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		
2	SITE CLEARANCE			R
0106	C1.6 CLEARING AND GRUBBING	R		
3	DRAINAGE			R
0302	C3.2 CULVERTS	R		
4	BULK EARTHWORKS			R
0402	C4.2 CUT MATERIALS	R		
0404	C4.4 COMMERCIAL MATERIALS	R		
5	KERBING			R
0303	C3.3 CONCRETE KERBING AND CHANNELING	R		
6	LAYERWORKS AND SURFACING			R
0404	C4.4 COMMERCIAL MATERIALS	R		
0503	C5.3 ROAD PAVEMENT LAYERS	R		
0801	C8.1 PRIME COAT	R		
0901	C9.1 ASPHALT LAYERS	R		
1304	C13.4 CONCRETE	R		
7	REINSTATEMENTS			R
1301	C13.1 FOUNDATIONS	R		

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