

STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

C.2.2.2 : BILL OF QUANTITIES

SECTION 1 PRELIMINARY AND GENERAL

PART 0102 C1.2 GENERAL REQUIREMENTS AND PROVISIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Environmental Management</u>				
1	C1.2.1.1	Monitoring of compliance with and reporting on the EMP	months	18		
2	PS.C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	months	18		
		<u>Stakeholder Liaison</u>				
3	PS.12 / PS.C1.2.4	Allow for a CLO to be appointed	PR Sum	70000	1.00	70,000.00
4		Handling cost and profit in terms of the above item 3	%	70000		
		<u>Safety</u>				
5	C1.2.5.1	Health and safety plan	Lump sum	1		
6	C1.2.5.2	Implementation of health and safety plan	months	18		
7	C1.2.6.2	Preventive and/or mitigation measures	PC Sum	50000	1.00	50,000.00
8	C1.2.6.3	Handling cost, profit and all other charges in respect of item C1.2.6.2	%	50000		
		<u>Site security</u>				
9	PS.11	Provision of security on site to guard against any disruption of the works throughout the duration of the Contrat	months	18		

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
1	C1.3.1.1 / PS.C1.3.1	The Contractor's general obligations:Fixed obligations	Lump sum	1		
2	C1.3.1.2	Value-related obligations	Lump sum	1		
3	C1.3.1.3	Time-related obligations	months	18		

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.C1.5	Accommodation of traffic	months	18		
2	C1.5.7.3	Flagmen	man-day	3		

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
3	C1.5.12.1	Additional traffic accommodation facilities ordered by the Engineer:Provision of additional traffic accommodation facilities	PC Sum	20000	1.00	20,000.00
4	C1.5.12.2	Handling cost, profit and all other charges in respect of item C1.5.12.1	%	20000		

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

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

SECTION 2 SITE CLEARENCE

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	0.5		
2	C1.6.1.2	Clearing with hand labour only when labour enhanced work is specified	ha	0.2		
		<u>Grubbing</u>				
3	C1.6.2.1	Grubbing with machines and some hand labour where necessary	ha	0.5		
4	C1.6.3.1	Removal and grubbing of large trees and tree stumps:Girth equal to or exceeding 1,0 m up to and including 2,0 m	no	30		
5	C1.6.3.2	Girth exceeding 2,0 m up to and including 3,0 m	no	5		
		<u>Removal of buildings and structures</u>				
6	C1.6.4.1	Demolition and Removal of brickwork walls and precast concrete slabs	m3	90		

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>Loading</u>				
1	C1.7.1.1 / PS.C1.7	Loading from stockpile using machines and some hand labour where necessary	m3	500		
2	C1.7.1.3 / PS.C1.7	Loading by hand only from stockpile or heaps when labour enhancement work is specified or it is not possible to use machines	m3	500		
		<u>Hauling</u>				
3	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	600		
4	C1.7.2.1(b)	(b) Boulders and hard material	m3 * km	100		

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

Part Continued **PART** 0107 C1.7 LOADING AND HAULING

Item	Clause	Description	Unit	Quantity	Rate	Amount
5	C1.7.2.2(a) / PS.C1.7.2.2	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	1000		
6	C1.7.2.2(b) / PS.C1.7.2.2	(b) Soil and gravel material	m3 * km	100		
7	C1.7.2.2(c) / PS.C1.7.2.2	(c) Boulders and hard material	m3 * km	50		

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

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

SECTION 3 **RETAINING WALLS MAINTENANCE**

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

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Segmented block walls (Geolock)</u>				
1	C12.6.2	Excavation for wall base foundation	m3	20		
2	C12.6.3	Class C12/15-20 Concrete for wall base foundation	m3	20		
3	C12.6.4.2	High tensile reinforcing steel in wall base foundation	t	0.5		
4	C12.6.10.2	Supply and install sliders between Terrace blocks to close off the gap.	m	1000		
5	C12.6.12.2 / PS.C12.6.12.2	Supply and install TB 300 interlocking blocks or similar approved for concrete block wall facing	m2	500		
6	C12.6.12.2 / PS.C12.6.12.2	Supply and install TB500 interlocking blocks for concrete block wall facing	m2	500		
7	C12.6.11	Backfill and compact to 93% MOD AASHTO suitable material from contractor's own source.	m3	100		
		<u>Gabion boxes and mattresses</u>				
8	C12.6.14.1(a)	Foundation trench excavation: Excavating all material situated within the following depth ranges below the surface level(a) 0 m to 1,5 m	m3	100		
9	C12.6.14.2	Extra over item 8 for excavation in hard material, irrespective of depth	m3	50		
10	C12.6.15	Surface preparation for bedding the gabions	m2	100		
11	C12.6.16.2 / PS.C12.6.16	Supply and install Galvanised and PVC coated gabion boxes (1x1x1m)	m3	50		
12	C12.6.16.2 / PS.C12.6.16	Supply and install Galvanised and PVC coated gabion boxes (1x1x1.5m)	m3	50		
13	C12.6.16.3 / PS.C12.6.16	Supply and install Galvanised and PVC coated gabion boxes (1x1x2m)	m3	100		
14	C12.6.16.4 / PS.C12.6.16	Supply and install Galvanised and PVC-coated gabion mattresses (0.3x1x3m)	m3	20		
15	C12.6.17 / PS.C12.6.17	Geotextile (Drainage grade A3)	m2	100		
16	C12.6.11	Backfill and compact to 93% MOD AASHTO suitable material from Contractor's own source.	m3	90		

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

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES
PART 1301 C13.1 FOUNDATIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Excavation requested by the Engineer</u>				
1	C13.1.3.1.(a)	Excavating in all material situated over 1.5m in increments of 0.5m depth	m3	10		
2	C13.1.7.1	Backfill to excavations utilising: Material from excavation	m3	20		
3	C13.1.7.2	Backfill to excavations utilising: Imported material from Contractor's own source.	m3	20		

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

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PART 1304 C13.4 CONCRETE

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C13.3.1.1(a)	Class C12/15-20 concrete for Blinding C12/15-20	m3	30		
2	C13.3.1.1(b)	Class C20/25-20 concrete for other parts of structure	m3	50		
3	C13.4.5.1	Curing and surface protection of cast in situ concrete, as and where specifically required.	m2	20		

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

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PART 1308 C13.8 ANCILLARY STRUCTURAL ELEMENTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C13.8.9	Supply and install 450 x 450 x 60 mm Precast concrete units (Class C20/25-20 or higher)	no	300		

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

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PART 1310 C13.10 PAINTING OF MINOR STRUCTURES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C13.10.1.1	Sealing and priming all concrete and brick retaining walls	m2	500		
2	C13.10.1.1	Painting on concrete and brick surfaces: Undercoat and finishing layer	m2	500		

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

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PART 1401 C14.1 ACCESS FOR BRIDGE REHABILITATION

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>Temporary access structures and work platforms</u>				
1	C14.1.1.1(a)(1) / PS.C14.1.1	Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor): (a)(1) Rehabilitation to vertical faces of retaining wall structures	no	10		

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES
Part Continued PART 1401 C14.1 ACCESS FOR BRIDGE REHABILITATION

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	C14.1.1.1(a)(2) / PS.C14.1.1	(a)(2) Rehabilitation and refurbishment of bridge soffits	no	10		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES
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PART 1404 C14.4 SURFACE AND STRUCTURAL REPAIR

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C14.4.1 / PS.C14.4 /PS.C14.4.1	Cementitious mortar of Class C25/30-20 to concrete cracks, damage, spalling and surface weathering	l	800		
2	C14.4.2 / PS.C14.4 /PS.C14.4.2	Epoxy mortar	l	800		
3	C14.4.4.1	Curing of repair surfaces by coating the surface with Pro-Struct 520 approved equivalent	m2	100		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES
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PART 1405 C14.5 ANCHORING OF REINFORCEMENT, GROUTI

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C14.5.2 / PS.C14.4	Preparation of 1 x 1 m2 contact surfaces for grouting with non-shrink grout to damaged retaining walls	no	20		
2	C14.5.3.2 / PS.C14.5.3	Grouting for Gap filling using non-shrink grout to prepared contact surfaces	l	100		
3	C14.5.5 / PS.C14.5.5	Surface preparation and surface sealing for crack injection to retaining wall surfaces	m	50		
4	C14.5.6 / PS.C14.5.6	Crack injection adhesive to reinforced concrete retaining walls	l	100		
5	C14.5.7.1	Crack filling: Repair system to reinforced concrete retaining walls	m	50		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES
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PART 1407 C14.7 PROTECTIVE COATINGS AND TREATMENTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C14.7.1	Cleaning and preparation of concrete surface by abbrasive methods to F2 surface finish	m2	1000		
2	C14.7.2	Application of approved anti-graffiti protective coatings and treatments	m2	1000		
3	C14.7.4	Trial sample panels	m2	2		

TOTAL CARRIED TO C.2.2.3 : SUMMARY OF BILL OF QUANTITIES
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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

PART 1409 C14.9 REPAIR AND REPLACEMENT OF ANCILLAR

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C14.9.1	Removal of debris from all retaining wall expansion gaps	m	100		
2	C14.9.2 / PS.C14.9.2	Clear retaining walls drainage system (50 dia. PVC weepholes)	no	800		
3	C14.9.6 / PS.C14.9.6	Removal and replacement of rusted and damaged steel type handrails	m	50		
4	C14.9.6	Repair of damage, spalling, delamination and cracking on concrete type handrails	m	50		
5	C14.9.14.2 / PS.C14.9.14	Remove and replace old structure number plates with new number plates	no	10		

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

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PART 2001 C20.1 TESTING MATERIALS AND JUDGEMENT

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C20.1.2.1(a)	Special tests requested by the Engineer: Employer's contribution to concrete durability tests:(a) Tes concrete cover	PC Sum	50000	1.00	50,000.00
2		Handling costs and profit in respect of item C20.1.2.1(a)	%	50000		

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

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STRUCTURAL MAINTENANCE EPAIRS TO MUNICIPAL OWNED RETAINING WALLS WITH THE ETHEKWINI MUNICIPALITY BOUNDARIES

C.2.2.3 : SUMMARY OF BILL OF QUANTITIES

1	PRELIMINARY AND GENERAL		R _____
	0102 C1.2 GENERAL REQUIREMENTS AND PROVISIONS	R _____	
	0103 C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND	R _____	
	0105 C1.5 ACCOMMODATION OF TRAFFIC	R _____	
2	SITE CLEARENCE		R _____
	0106 C1.6 CLEARING AND GRUBBING	R _____	
	0107 C1.7 LOADING AND HAULING	R _____	
3	RETAINING WALLS MAINTENANCE		R _____
	1206 C12.6 MECH STABILISED FILL AND GABIONS	R _____	
	1301 C13.1 FOUNDATIONS	R _____	
	1304 C13.4 CONCRETE	R _____	
	1308 C13.8 ANCILLARY STRUCTURAL ELEMENTS	R _____	
	1310 C13.10 PAINTING OF MINOR STRUCTURES	R _____	
	1401 C14.1 ACCESS FOR BRIDGE REHABILITATION	R _____	
	1404 C14.4 SURFACE AND STRUCTURAL REPAIR	R _____	
	1405 C14.5 ANCHORING OF REINFORCEMENT, GROUTI	R _____	
	1407 C14.7 PROTECTIVE COATINGS AND TREATMENTS	R _____	
	1409 C14.9 REPAIR AND REPLACEMENT OF ANCILLAR	R _____	
	2001 C20.1 TESTING MATERIALS AND JUDGEMENT	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 _____