

**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
129	160mm Pipes laid in trenches including excavation, risk of collapse, backfilling with selected excavated material, compaction in layers, etc. (LI)	m	53	
<u>Extra over HDPE pipes for 'Plasson' or other equally approved HDPE compression type fittings</u>				
130	20mm Elbow (LI)	No	4	
131	25mm Elbow (LI)	No	3	
132	32mm Elbows (LI)	No	10	
133	110mm Elbow (LI)	No	18	
134	110mm Tees (LI)	No	4	
135	110 x 20mm Tees (LI)	No	3	
136	110 x 25mm Tees (LI)	No	3	
137	110 x 32mm Tees (LI)	No	9	
138	160mm Elbow (LI)	No	5	
139	160 x 110mm Reducer (LI)	No	2	
<u>Extra over HDPE Pipes for Brass Compression Fittings</u>				
140	110mm Gate valve	No	1	
141	110mm Isolation valve	No	1	
142	110mm brass non return valve	No	1	
143	110mm brass in line strainer	No	1	
144	20mm Coupling (LI)	No	3	
145	25mm Coupling (LI)	No	3	
146	32mm Coupling (LI)	No	9	
147	110mm Coupling (LI)	No	7	
148	160mm Coupling (LI)	No	4	
Carried Forward				R
Bill No. 19 External Works				

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward					
	<u><b>Valve Chambers, etc.</b></u>				
149	Valve box set 1835 x 1350mm internally and not exceeding 1395mm deep internally on 2235 x 1750 x 200mm thick concrete base, including 200mm thick concrete walls, 200mm thick concrete slabs, formworks, reinforcement and fitted with and including with 1100 x 800mm cast iron cover and frame set level to the ground complete with excavation, risk of collapse, working space, hoisting in position, backfilling with selected excavated material, cart away surplus material, etc. all in accordance to Civil Engineer drawings, annexured to these Bills of Quantities for the full details, drawing number: FEC-23022-GEN-TYP-002. (LI)	No	1		
	<u><b>Keeping excavations free of water</b></u>				
150	Keeping excavations free of all water other than subterranean water			Item	
	<u><b>Sundries</b></u>				
151	20Mpa/19mm Unreinforced mass concrete as anchor blocks around various fittings (LI)	m3	8		
152	20Mpa/19mm Unreinforced mass concrete encasing to pipework on trenches (LI)	m3	16		
153	200 x 200 x 200mm Mass concrete markers blocks	No	44		
154	Extra over excavation in earth for pipe trenches, valve boxes, etc for excavation in soft rock (LI)	m3	53		
155	Extra over excavation in earth for pipe trenches, valve boxes, etc for excavation in hard rock	m3	26		
156	Cart away surplus material to a dumping site located by the contractor	m3	159		
157	Import Class "B" bedding and initial backfill to 300mm above crown of pipe (LI)	m3	159		
	<u><b>Municipal connection</b></u>				
158	Allow for the tie in to the municipal water main			Item	

**Carried Forward**

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M.B

Brought Forward

R

**Testing**

- 159 Allow for testing the whole of the Domestic water supplies to the satisfaction of the Principal Agent and Local authority. All defective work to removed and made good at the contractors expense and the whole works to be re-tested until found satisfactory

Item

**FIRE WATER MAIN**

**(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)**

**Class HDPE 100PN 12.5 Pipes**

- 160 110mm Pipes laid in trenches (No excavations)

m

7

- 161 110mm Pipes laid in trenches including excavation, risk of collapse, backfilling with selected excavated material, compaction in layers, etc. (LI)

m

146

**Extra over HDPE Pipes for Electroweld Fusion couplings for Fittings**

- 162 110mm Elbow (LI)

No

11

- 163 110mm Tees (LI)

No

4

**Extra over HDPE Pipes for Brass Compression Fittings**

- 164 110mm Coupling (LI)

No

8

- 165 110mm Non-return valve (LI)

No

1

Carried Forward

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SS

M.B

**Samora Machel New Police Station  
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<b>Brought Forward</b>			
<b><u>Isolating valve chamber</u></b>			
166	Excavate in ground for and build valve chamber 800 x 800 x 1000mm deep of 250mm uPVC pipe as chamber with 150mm (15MPa) thick concrete base, 300mm thick (20Mpa) concrete slab fitted with and including Bell Toby valve box cover and frame complete with excavation, risk of collapse, working space, backfilling with selected excavated material, cart away surplus material, etc. all in accordance to Civil Engineer drawings, annexured to these Bills of Quantities for the full details, drawing number: FEC-23022-GEN-TYP-002. (LI)	No	1
<b><u>Extra over isolating valve chamber</u></b>			
167	110mm Gate Valve	No	1
<b><u>Keeping excavations free of water</u></b>			
168	Keeping excavations free of all water other than subterranean water		Item
<b><u>Sundries</u></b>			
169	20MPa/19mm unreinforced mass concrete as anchor blocks around various fittings (LI)	m3	14
170	200 x 200 x 200mm Mass concrete markers blocks	No	15
171	Extra over excavation in earth for pipe trenches, valve boxes, etc for excavation in soft rock (LI)	m3	15
172	Extra over excavation in earth for pipe trenches, valve boxes, etc for excavation in hard rock	m3	7
173	Cart away surplus material to a dumping site located by the contractor	m3	44
174	Import Class "B" bedding and initial backfill to 300mm above crown of pipe (LI)	m3	44
175	75mm Hydrant with connection with cap and chain	No	1
176	80 x 65mm Brass double booster pump connection with caps and chains	No	1

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M.B

**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward					
<b><u>Municipal connection</u></b>					
177	Allow for the tie in to the municipal water main		Item		
<b><u>Testing</u></b>					
178	Allow for testing the whole of the Fire water supplies to the satisfaction of the Principal Agent and Local authority. All defective work to removed and made good at the contractors expense and the whole works to be re-tested until found satisfactory		Item		
<b><u>CONCRETE APRONS</u></b>					
<b><u>Earthworks (CPAP Work Group No. 104)</u></b>					
<b><u>Excavation other than bulk</u></b>					
179	Excavate to reduced level (LI)	m3		156	
180	Edge thickening (LI)	m3		16	
<b><u>Extra over all excavations for loading, carting and dumping surplus excavated material, rubble, etc. (no allowance made for increase in bulk)</u></b>					
181	Off site to a dumping site to be found by the Contractor.	m3		172	
<b><u>Keeping excavations free of water</u></b>					
182	Keeping excavations free of all water other than subterranean water		Item		
<b><u>Compaction of surfaces</u></b>					
183	Compaction of ground surface under aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2		520	
<b><u>Base course of earth filling supplied by the contractor under pavings, roads, etc</u></b>					
184	Construct 150mm thick base layer of G5 materials obtained from commercial sources, compacted to a density of at least 95% Mod. AASHTO density. (LI)	m3		78	

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M.B

**Samora Machel New Police Station  
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Brought Forward				R
<u>Prescribed density tests on filling</u>				
185	Modified AASHTO Density tests	No	13	
<u>Weedkiller mixed with water and applied at a rate of 100grams/m2</u>				
186	Under aprons, etc. (LI)	m2	520	
<u>Concrete (CPAP Work Group No. 110)</u>				
<u>Reinforced concrete cast against excavated surfaces and/or formwork</u>				
<u>30MPa/19mm concrete</u>				
187	Concrete aprons (LI)	m3	78	
188	Edge thickening (LI)	m3	16	
<u>Test cubes</u>				
189	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	16	
<u>Concrete sundries</u>				
<u>Finishing top surfaces of concrete smooth with a wood float</u>				
190	Surface beds, slabs, etc.to falls (LI)	m2	520	
<u>Polished concrete with exposed aggregate seamless floor finish including grinding down concrete surfaces 5mm thick and sealing as required. Work to be carried out by specialist Sub-Contractor</u>				
191	Surface beds, slabs, etc.	m2	37	
<u>Formwork (CPAP Work Group No. 111)</u>				
<u>Rough formwork to sides</u>				
192	Edges, risers, ends and reveals not exceeding 300mm high or wide (LI)	m	640	
<u>Movement joints etc</u>				
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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			R
	<u>Expansion joints with 15mm softboard between vertical concrete surfaces, including necessary formwork</u>		
193	Not exceeding 300mm high between surface beds and brickworks (LI)	m	640
	<u>Reinforcement (CPAP Work Group No. 114)</u>		
	<u>Fabric reinforcement</u>		
194	Type Ref. 193 fabric reinforcement in concrete surface beds, slabs, etc. (LI)	m2	520
	<u>Waterproofing (CPAP Work Group No. 120)</u>		
	<u>One layer of 375 micron waterproof sheeting sealed at laps as per approval</u>		
195	Under surface beds (LI)	m2	520
	<u>Joint sealants etc</u>		
	<u>Two-part grey or other equally approved polysulphide sealing compound including backing cord, bond breaker, primer, etc</u>		
196	15 x 10mm In horizontal expansion joints including raking out expansion joint filler as necessary	m	640
	<u>WALKWAY</u>		
	<u>Earthworks (CPAP Work Group No. 104)</u>		
	<u>Excavation other than bulk</u>		
197	Excavate to reduced level (LI)	m3	46
	<u>Extra over all excavations for loading, carting and dumping surplus excavated material, rubble, etc. (no allowance made for increase in bulk)</u>		
198	Off site to a dumping site to be found by the Contractor.	m3	46
	<u>Keeping excavations free of water</u>		
199	Keeping excavations free of all water other than subterranean water	Item	

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M.B

**Samora Machel New Police Station  
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Brought Forward				R
<b><u>Compaction of surfaces</u></b>				
200	Compaction of ground surface under pavings, roads etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2	118	
<b><u>Base course of earth filling supplied by the contractor under pavings, roads, etc</u></b>				
201	150mm Thick layer of G7 sub-base course under walkway areas, etc., with selected and approved natural G7 quality material, supplied and carted onto site by the contractor, compacted in layers of 150mm thickness to at least 95% Mod. AASHTO density (LI)	m3	18	
202	150mm Thick layer of C4 stabilized sub-base course under walkway areas, etc., stabilised cement in accordance with SABS 1200 DM, with selected and approved natural G5 quality material, supplied and carted onto site by the contractor, compacted in layers of 150mm thickness to at least 95% Mod. AASHTO density (LI)	m3	18	
<b><u>Testing of material and filling</u></b>				
Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series				
The items of testing given below are for additional testing which may be required by the Engineer over and above those required in accordance with the SABS 1200 series				
<b><u>Additional tests required by Engineer</u></b>				
203	Maximum dry density and optimum moisture content test in accordance with Method A7 of TMH 1	No	4	
204	Atterberg limits test in accordance with methods A2 to A4 of TMH 1	No	2	
205	In-situ dry density test in accordance with method A10(b) of TMH 1		Item	
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**Samora Machel New Police Station  
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Brought Forward				R
	<u>Weedkiller mixed with water and applied at a rate of 100grams/m2</u>			
206	Under walkway areas, etc. (LI)	m2	118	
	<u>Masonry (CPAP Work Group No. 116)</u>			
	<u>30MPa Nougat Modular paving bricks</u>			
207	50mm clay paving bricks laid in herringbone pattern to SANS 1200MJ, blocks laid on 25mm river sand layer on concrete aprons (concrete aprons elsewhere measured) (LI)	m2	76	
	<u>30MPa Graphite Modular paving bricks</u>			
208	50mm clay paving bricks laid in herringbone pattern to SANS 1200MJ, blocks laid on 25mm river sand layer on concrete aprons (concrete aprons elsewhere measured) (LI)	m2	42	
	<u>RETAINING WALLS</u>			
	<u>Earthworks (CPAP Work Group No. 104)</u>			
	<u>Excavation other than bulk</u>			
209	Trenches (LI)	m3	1 804	
	<u>Extra over all excavations for loading, carting and dumping surplus excavated material, rubble, etc. (no allowance made for increase in bulk)</u>			
210	Off site to a dumping site to be found by the Contractor.	m3	799	
	<u>Risk of collapse of excavations</u>			
211	Sides of trench and hole excavations not exceeding 1,5m deep	m2	2 004	
	<u>Keeping excavations free of water</u>			
212	Keeping excavations free of all water other than subterranean water		Item	

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward					R
<b><u>Compaction of surfaces</u></b>					
213	Compaction of ground surface under strip footings, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2	902		
<b><u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density.</u></b>					
214	Backfilling to trenches, holes, etc. (LI)	m3	1 005		
<b><u>Base course of earth filling supplied by the contractor under pavings, roads, etc</u></b>					
215	Construct 150mm thick base layer, under strip footings, of G5 materials obtained from commercial sources, compacted to a density of at least 95% Mod. AASHTO density. (LI)	m3	271		
<b><u>Prescribed density tests on filling</u></b>					
216	Modified AASHTO Density tests	No	213		
<b><u>Weedkiller mixed with water and applied at a rate of 100grams/m2</u></b>					
217	To sides and bottoms of trench excavations (LI)	m2	2 906		
<b><u>Concrete (CPAP Work Group No. 110)</u></b>					
<b><u>Unreinforced concrete cast against excavated surfaces</u></b>					
<b><u>15MPa/19mm concrete</u></b>					
218	Blinding (LI)	m3	38		
<b><u>Reinforced concrete cast against excavated surfaces and/or formworks</u></b>					
<b><u>30MPa/19mm concrete</u></b>					
219	Strip footings (LI)	m3	263		

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SS M.B

**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			
<b><u>Test cubes</u></b>			
220	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	44
<b><u>Formwork (CPAP Work Group No. 111)</u></b>			
<b><u>Rough formwork to sides</u></b>			
221	Strip footings (LI)	m2	351
<b><u>Reinforcement (CPAP Work Group No. 114)</u></b>			
<b><u>Mild and high tensile steel reinforcement to structural concrete work</u></b>			
222	Various diameter bars (LI)	t	39,45
<b><u>Masonry (CPAP Work Group No. 116)</u></b>			
<b><u>Brickwork of NFX bricks in class II mortar</u></b>			
223	One and half brick walls in foundations (LI)	m2	651
224	One and half brick walls (LI)	m2	251
<b><u>Brickwork sundries</u></b>			
<b><u>2.5mm Galvanised brickwork reinforcement</u></b>			
225	155mm Wide reinforcement built in horizontally (LI)	m	7 072
<b><u>Brickwork sundries</u></b>			
<b><u>Bagging of 1:3 cement and sand mixture</u></b>			
226	On brick walls, piers, etc. (LI)	m2	381
<b><u>Joint forming material in movement joints</u></b>			
227	12mm Bitumen impregnated fibre board built in vertically through brick walls exceeding 300mm wide (LI)	m2	117
<b><u>Face brickwork</u></b>			

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MB

**Samora Machel New Police Station  
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Brought Forward			
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	<u>"Corojem Nebraska FBS" or other equally approved face bricks pointed with tinted recessed horizontal and vertical joints</u>		
228	Extra over brickwork for face brickwork on both sides of walls in foundations (LI)	m2	130
229	Extra over brickwork for face brickwork on both sides of walls (LI)	m2	251
230	Extra over brickwork for 345mm wide brick-on-edge header course bands one course high (LI)	m	501
	<u>Waterproofing (CPAP Work Group No. 120)</u>		
	<u>Two coats emulsion bitumen emulsion waterproof coating as per approval</u>		
231	On bagged brick walls, piers, etc. (LI)	m2	381
	<u>One Layer "Derbigum" or other equally approved CG4 waterproofing membrane sealed to solvent based bitumen primed surface by means of torch fusion with minimum 100mm side laps and minimum 150mm end laps</u>		
232	On retaining walls	m2	401
233	Extra over waterproofing to walls for one layer of 'interdek' or other equally approved sheeting with a minimum lap of 200mm to receive backfilling (Back filling else where measured)	m2	401
	<u>Joint sealants etc</u>		
	<u>Polyurethane or other equally approved sealing compound including backing cord, bond breaker, primer, etc.</u>		
234	12 x 12mm In vertical expansion joints including raking out expansion joint filler as necessary	m	334
	<u>Drainage (CPAP Work Group No. 146 Unless Otherwise Stated)</u>		

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M.B

**Samora Machel New Police Station  
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Brought Forward			R
<b><u>Slotted HDPE flexible drainage pipes</u></b>			
235	110mm HDPE flexible slotted agricultural pipes laid behind retaining walls for a depth not exceeding 3m including 19mm crushed stone encasing 300 x 300mm, "Kaymat" U34 geofabric filter blanket wrapped around encasing with 150mm side and 300mm end laps including stitching and 300 x 300mm river sand. (LI)	m	501
236	Extra over for 110mm cap (LI)	No	8
237	Extra over for 110mm bend (LI)	No	16
238	Extra over for 110mm access junction (LI)	No	7
<b><u>BOUNDARY WALLS, FENCE AND GATES</u></b>			
<b><u>Earthworks (CPAP Work Group No. 104)</u></b>			
<b><u>Excavation other than bulk</u></b>			
239	Trenches (LI)	m3	1 649
<b><u>Extra over all excavations for loading, carting and dumping surplus excavated material, rubble, etc. (no allowance made for increase in bulk)</u></b>			
240	Off site to a dumping site to be found by the Contractor.	m3	796
<b><u>Risk of collapse of excavations</u></b>			
241	Sides of trench and hole excavations exceeding 1,5m deep	m2	1 832
<b><u>Keeping excavations free of water</u></b>			
242	Keeping excavations free of all water other than subterranean water		Item
<b><u>Compaction of surfaces</u></b>			
243	Compaction of ground surface under strip footings, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2	824

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M.B

**Samora Machel New Police Station**  
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			Brought Forward	
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density.</u>			
244	Backfilling to trenches, holes, etc. (LI)	m3	853	
	<u>Base course of earth filling supplied by the contractor under pavings, roads, etc</u>			
245	Construct 150mm thick base layer, under strip footings, of G5 materials obtained from commercial sources, compacted to a density of at least 95% Mod. AASHTO density. (LI)	m3	247	
	<u>Prescribed density tests on filling</u>			
246	Modified AASHTO Density tests	No	183	
	<u>Weedkiller mixed with water and applied at a rate of 100grams/m2</u>			
247	To sides and bottoms of trench excavations (LI)	m2	2 656	
	<u>Concrete (CPAP Work Group No. 110)</u>			
	<u>Unreinforced concrete cast against excavated surfaces</u>			
	<u>15MPa/19mm concrete</u>			
248	Blinding (LI)	m3	34	
	<u>Reinforced concrete cast against excavated surfaces and/or formworks</u>			
	<u>30MPa/19mm concrete</u>			
249	Strip footings (LI)	m3	240	
	<u>Reinforced concrete cast against excavated surfaces and/or brickworks</u>			
	<u>30MPa/19mm concrete</u>			
250	Planter base (LI)	m3	5	
251	Concrete infill in hollow walls (LI)	m3	42	

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SS B.M.

**Samora Machel New Police Station  
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Brought Forward				R
<b><u>Test cubes</u></b>				
252	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	41	
<b><u>Formwork (CPAP Work Group No. 111)</u></b>				
<b><u>Rough formwork to sides</u></b>				
253	Strip footings (LI)	m2	366	
<b><u>Reinforcement (CPAP Work Group No. 114)</u></b>				
<b><u>Mild and high tensile steel reinforcement to structural concrete work</u></b>				
254	Various diameter bars (LI)	t	47,94	
<b><u>Fabric reinforcement</u></b>				
255	Type Ref. 193 fabric reinforcement in concrete surface beds, slabs, etc. (LI)	m2	33	
<b><u>Masonry (CPAP Work Group No. 116)</u></b>				
<b><u>Brickwork of NFX bricks in class II mortar</u></b>				
256	One brick walls in foundations (LI)	m2	170	
257	One and half brick walls in foundations (LI)	m2	595	
258	Half brick wall in hollow columns in foundations (LI)	m2	320	
259	Half brick walls (LI)	m2	58	
260	One and half brick walls (LI)	m2	1 036	
261	Half brick wall in hollow columns (LI)	m2	629	
<b><u>Brickwork sundries</u></b>				
<b><u>2.5mm Galvanised brickwork reinforcement</u></b>				
262	75mm Wide reinforcement built in horizontally (LI)	m	3 947	
263	155mm Wide reinforcement built in horizontally (LI)	m	13 453	
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**Samora Machel New Police Station  
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Brought Forward			R
<b><u>Brickwork sundries</u></b>			
<b><u>Bagging of 1:3 cement and sand mixture</u></b>			
264	On brick walls, piers, etc. (LI)	m2	1 337
<b><u>Joint forming material in movement joints</u></b>			
265	12mm Bitumen impregnated fibre board built in vertically through brick walls exceeding 300mm wide (LI)	m2	208
<b><u>Face brickwork</u></b>			
<b><u>"Corojem Nebraska FBS" or other equally approved face bricks pointed with tinted recessed horizontal and vertical joints</u></b>			
266	Extra over brickwork for face brickwork walls in foundations (LI)	m2	34
267	Extra over brickwork for face brickwork on both sides in foundations (LI)	m2	119
268	Extra over brickwork for face brickwork to piers in foundations (LI)	m2	64
269	Extra over brickwork for face brickwork to walls (LI)	m2	58
270	Extra over brickwork for face brickwork on both sides of walls (LI)	m2	1 036
271	Extra over brickwork for face brickwork to piers (LI)	m2	629
272	Extra over brickwork for 110mm wide brick-on-edge header course bands one course high (LI)	m	99
273	Extra over brickwork for 345mm wide brick-on-edge header course bands one course high (LI)	m	458
274	Extra over brickwork for 660 x 440mm brick-on-edge header course bands one course high (LI)	No	112
<b><u>Waterproofing (CPAP Work Group No. 120)</u></b>			
<b><u>Two coats emulsion bitumen emulsion waterproof coating as per approval</u></b>			
275	On bagged brick walls, piers, etc. (LI)	m2	1 337
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**Samora Machel New Police Station  
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Brought Forward			
<u>Joint sealants etc</u>			
<u>Polyurethane or other equally approved sealing compound including backing cord, bond breaker, primer, etc.</u>			
276	12 x 12mm In vertical expansion joints including raking out expansion joint filler as necessary	m	681
<u>Waterproofing slurry, with and including membrane, apply as per manufacturer's strict instructions</u>			
277	On planter floors	m2	33
278	On planter walls	m2	129
<u>Metalwork (CPAP Work Group No. 136)</u>			
<u>Welded Mesh Fencing or other equal and approved invisible wall panels</u>			
279	1.80m High double skim clamber proof fence in panels 3.39m width with aperture size 12 x 12mm with 5x staining wires. Installed all in accordance with manufacturer's details	m	91
<u>Fence Posts</u>			
280	3,02m High intermediate fence post mild steel galvanised, size 85mm tapering to 45mm. Post to be built into 600mm into concrete base. Concrete base size 600 x 600 x 700mm deep with and including excavations, cart away, backfilling, etc.	No	24
<u>Minimum 600mm high galvanised high tensile steel flat wrap razor wire fixed on 3x straining wires, staining wires fixed on metal brackets. Bracket fixed on brick wall. Installed all in accordance to manufacturer's details</u>			
281	600mm High flat wrap razor wire on top of brick walls	m	367
<u>Minimum 600mm high galvanised high tensile steel flat wrap razor wire fixed on 3x straining wires, staining wires fixed steel posts (steel posts elsewhere measured). Installed all in accordance to manufacturer's details</u>			
282	600mm High flat wrap razor wire on top of steel fence	m	91

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
	<u>100mm Electro-galvanized, 2mm thick, toughened steel security spikes fixed on top of walls, fence, etc. installed all in accordance to manufacturer's details</u>			
283	100mm Electro-galvanized security spikes fixed on top of brick walls	m	466	
284	100mm Electro-galvanized security spikes fixed on top steel fence	m	91	
	<u>Gates, screens, etc.</u>			
	<u>Gates, etc.</u>			
285	A motorized double swing gate side hung gate fixed to brick walls / brick piers, size 6033 x 3000mm high. The access gate shall be manufactured from the same materials used for perimeter fencing on street boundaries. Gate to be the same height as the perimeter fence with minimum 600mm high galvanized high tensile steel flat wrap razor wire on top of gate to achieve a minimum total height of 3000mm. Provide that the gate must be lockable with a heavy-duty padlock from inside the premises. Heavy duty frame and ironmongery by specialist. All steel to be galvanised and prepared to receive two coats of primer & paint for steel/metal by Dulux/Plascon/Duram O.O.E.A. all to paint manufacturer's specification & instruction. Type G04. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP10, annexed to these bills of quantities.	No	3	
286	1430 x 2250mm High Titan full height free rotation turnstile by "Turnstar" or equally approved and comprises of rotalok rotation locking mechanism and electronic control panel incorporates of anti-trap safety system, suspended Rotor technology, mechanical key override, shock absorbing rubber coupling, lockable top cover, 50mm diameter tube arms spaced 120mm apart, access control reader mounting position, rotarun perpetual base bearing, wiring side entry point, wiring bottom entry point, floor bolting positions, wall bolting positions, etc. and installed all in accordance to manufacturer's specifications.	No	1	
Carried Forward				R
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**Samora Machel New Police Station**  
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		Brought Forward		R
287	1030 x 2060mm High, single steel gate including frame which is manufactured from steel angles and 2mm thick steel sheet shaped into sizes, all in accordance with SANS Specification 121 (SABS ISO 1461). Gate type G02. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP10, annexed to these bills of quantities.	No	7	
288	948 x 1970mm High, single steel gate including frame which is manufactured from steel angles and 2mm thick steel sheet shaped into sizes, all in accordance with SANS Specification 121 (SABS ISO 1461). Gate type G03. Tenderer's are referred to Architect's drawing No. UKU - A - 1003 - SP10, annexed to these bills of quantities.	No	1	
<b><u>Drainage (CPAP Work Ground No. 146 Unless Otherwise Stated)</u></b>				
<b><u>Class 34 heavy duty uPVC pipes</u></b>				
289	395mm Long weep pipe built into one brick walls with one end left 50mm projection in front of walls	No	563	
290	710mm Long weep pipe built into one brick walls with one end left 50mm projection in front of walls	No	203	
<b><u>Plastering (CPAP Work Group No. 142)</u></b>				
<b><u>Screeds wood floated, on concrete</u></b>				
291	Average 85mm thick on floors to falls (LI)	m2	33	
<b><u>DRIVEWAY AND PARKING AREA</u></b>				
<b><u>(CPAP WORK GROUP NO. 154 UNLESS OTHERWISE STATED)</u></b>				
<b><u>Excavation other than bulk</u></b>				
292	Excavate to reduced level	m3	1 786	
<b><u>Extra over all excavations for loading, carting and dumping surplus excavated material, rubble, etc. (no allowance made for increase in bulk)</u></b>				
293	Off site to a dumping site to be found by the Contractor.	m3	1 786	
		Carried Forward		R
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**Samora Machel New Police Station  
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Brought Forward				R
<u>Keeping excavations free of water</u>				
294	Keeping excavations free of all water other than subterranean water		Item	
<u>Compaction of surfaces</u>				
295	Compaction of ground surface under pavings, roads etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	3 692	
<u>Base course of earth filling supplied by the contractor under pavings, roads, etc</u>				
296	150mm Thick layer of G7 sub-base course under roads, parking areas, etc., with selected and approved natural G7 quality material, supplied and carted onto site by the contractor, compacted in layers of 150mm thickness to at least 95% Mod. AASHTO density.	m3	554	
297	150mm Thick layer of C4 stabilized sub-base course under roads, parking areas, etc., stabilised cement in accordance with SABS 1200 DM, with selected and approved natural G5 quality material, supplied and carted onto site by the contractor, compacted in layers of 150mm thickness to at least 98% Mod. AASHTO density.	m3	554	
298	150mm Thick layer of G3 sub-base course under roads, parking areas, etc., with selected and approved natural G3 quality material, supplied and carted onto site by the contractor, compacted in layers of 150mm thickness to at least 98% Mod. AASHTO density.	m3	554	
<u>Testing of material and filling</u>				
Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series				
The items of testing given below are for additional testing which may be required by the Engineer over and above those required in accordance with the SABS 1200 series				
Carried Forward				R
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**Samora Machel New Police Station  
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Brought Forward			R	
<b><u>Additional tests required by Engineer</u></b>				
299	Maximum dry density and optimum moisture content test in accordance with Method A7 of TMH 1	No	101	
300	Atterberg limits test in accordance with methods A2 to A4 of TMH 1	No	67	
301	In-situ dry density test in accordance with method A10(b) of TMH 1		Item	
<b><u>Weedkiller mixed with water and applied at a rate of 100grams/m2</u></b>				
302	Under parking area, etc. (LI)	m2	3 108	
<b><u>Bituminous premix road surfacing</u></b>				
303	Supply and apply primer coat on crusher base layer. Prime that complies with the requirements of SABS 748 or 749. MC-30 or MC-70 that complies with the requirements of SABS 308.	m2	3 108	
304	Supply and construct continuously medium graded hot premix asphalt surfacing layer 40mm thick (compacted thickness) 40/50 pen bitument 9.5mm stone to roadways compacted to 96% Marshal density and laid to falls	m2	3 108	
<b><u>Precast concrete finished smooth on exposed surfaces including bedding, jointing and pointing</u></b>				
305	Kerb (SABS 927 fig 9) 150 x 300mm high with 525 x 100mm unreinforced concrete base including excavation, backfilling, haunching at back of each joint, etc. (Type: Barrier kerb BK2)	m	627	
306	Kerb (SABS 927 fig 9) 150 x 300mm high with 525 x 100mm unreinforced concrete base circular on plan not exceeding 4m radius formed with short lengths of straight kerb including excavation, backfilling, haunching at back of each joint, etc. (Type: Barrier kerb BK2)	m	41	
307	Kerb (SABS 927 fig 12) 75 x 150mm high with 300 x 70mm unreinforced concrete base including excavation, backfilling, haunching at back of each joint, etc. (Type: Edging E3)	m	340	
<b>Carried Forward</b>			R	
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<b>Brought Forward</b>					
308	Barrier kerb and channel formed of kerb (SABS 927 fig 9) 150 x 300mm high and kerb (SABS 927 fig 8C) 300 x 200mm high with 935 x 100mm unreinforced concrete base including excavation, backfilling, haunching at back of each joint, etc. (Type: Barrier kerb and channel BK2 + C1)	m	50		
309	Barrier kerb and channel formed of kerb (SABS 927 fig 9) 150 x 300mm high and kerb (SABS 927 fig 8C) 300 x 200mm high with 935 x 100mm unreinforced concrete base circular on plan not exceeding 4m radius formed with short lengths of straight kerb including excavation, backfilling, haunching at back of each joint, etc. (Type: Barrier kerb and channel BK2 + C1)	m	22		
310	V-channel formed of 2x kerbs (SABS 927 fig 8C) 300 x 200mm high with 1010 x 100mm unreinforced concrete base including excavation, backfilling, haunching at back of each joint, etc. (Type: C1 + C1 V-channel)	m	60		
<b><u>Paintwork</u></b>					
<b><u>Prepare and apply one coat non reflective road marking paint at a nominal rate of 0.42l/m<sup>2</sup> on bituminous road surfacing, pre-cast concrete paving blocks, etc.</u></b>					
311	100mm Wide solid lines to parking demarcation bays, etc.	m	528		
312	4,0m Long directional arrows	No	10		
313	5,0m Long directional arrows with right or left turn	No	4		
314	1,3m Long letters to 'STOP' sign, etc.	No	3		
315	7 x 1,2m Wide pedestrian walkway	No	2		
316	15 x 1,2m Wide pedestrian walkway	No	1		
317	9,5 x 4,5m Loading zone	No	1		
318	Disabled parking bay sign approximately 1,2m high	No	3		
319	Ambulance parking sign approximately 1,2m high	No	1		
320	Painted white parking numbers	No	64		

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Brought Forward

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**DOMESTIC WATER STORAGE TANKS AND PUMPS**

**Metalwork (CPAP Work Group No. 136)**

**Hot Dipped Galvanised Sundry Steelwork**

- 321 Supply, delivery, installation, connection, testing & commissioning of sectional steel 60kL effective capacity dedicated water storage tank for adequate supply of domestic water system including flanges, connections, fittings, hangers, brackets, vortex inhibitor, water level indicator, water inlets, water outlets to domestic pumps, catladder, access hatches, valves, drains, etc. complete. Reference to be made to Wet Services Drawing D3925-DW-A0-02 and technical specification when pricing, annexed to these bills of quantities.

No

1

- 322 Supply, delivery, installation, connection, testing & commissioning of tank infill

Item

**Mechanical (CPAP Work Group No. 170)**

**Supply and deliver the following booster pumps ("KSB" or other approved), complete with all with electrical connection to isolator, internal pump house reticulation piping- and drain piping, electrical control wiring, brackets, supports, steel bases, control panel and all necessary accessories, as per the specification and manufacturer's recommendation.**

- 323 Supply, delivery, installation, connection, testing & commissioning of complete domestic water Bi-Plex Electric pump set including valves, vacuum breaks, auto air vents, etc. Pumps to operate Duty and Standby. Each Pump sized for 270 L/m @2.18bar

No

1

- 324 Supply, delivery, installation, connection, testing & commissioning of pump control panels

Item

- 325 Supply, delivery, installation, connection, testing & commissioning of all electrical work in the pump house

Item

- 326 190 x 190mm Photoluminescent pictograms statutory signs on chromadek or other equally approved material

No

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**Samora Machel New Police Station  
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Brought Forward				R
327	Supply, delivery, installation, connection, testing & commissioning of trunk mains from pump house to building		Item	
	<u>SABS approved Black Mild Steel pipes including all holderbats and couplings in the running length with welded type fittings to be used. All pipe in wall/floor chases to be wrapped twice in brown Kraft paper. Pipes passing through opening in brickwork or slab shall be coated with DENZO Protective pipe wrapping. All pipes to be painted with one coat primer and two coats signal red.</u>			
328	40mm Pipes (LI)	m	31	
	<u>Pipework, valves, fittings, etc.</u>			
329	2500kPa Pressure gauge	No	8	
330	Domestic water pump test meter	No	1	
331	100mm Butterfly valve	No	2	
332	150mm Butterfly valves	No	3	
333	150mm Non-return valve	No	2	
334	150mm Expansion joints	No	4	
335	150mm Strainer	No	1	
336	150mm Gate valve	No	3	
337	250mm Gate valve	No	2	
338	Vortex impellers	No	2	
339	Pressure switch	No	5	
340	20mm Ball valve	No	5	
341	20mm Check valve	No	4	
342	50mm Rubber expansion joints	No	2	
343	50mm Check valve	No	1	
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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward		R	
344	50mm Ball valve	No	1
345	Membrane vessel	No	1
346	100mm Brass elbows	No	5
347	150mm Brass elbows	No	4
348	250mm Brass elbows	No	3
349	150mm Brass tee-pieces	No	2
350	250mm Brass tee-pieces	No	1
351	100mm Brass straight piping	No	8
352	150mm Brass straight piping	No	30
353	250mm Brass straight piping	No	18
<b><u>FIRE WATER STORAGE TANKS AND PUMPS</u></b>			
<b><u>Metalwork (CPAP Work Group No. 136)</u></b>			
<b><u>Hot Dipped Galvanised Sundry Steelwork</u></b>			
354	Supply, delivery, installation, connection, testing & commissioning of Cylindrical 144KL effective capacity dedicated fire storage tank for adequate supply of fire system including flanges, connections, fittings, hangers, brackets, vortex inhibitor, water level indicator, water inlets, water outlets to fire pumps, catladder, access hatches, valves, drains, etc complete. Reference to be made to DWG D0000-MF-A1-04 and technical specification when pricing, annexed to these bills of quantities.	No	1
355	Supply, delivery, installation, connection, testing & commissioning of tank infill		Item
<b><u>Mechanical (CPAP Work Group No. 170)</u></b>			
Carried Forward		R	
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**Samora Machel New Police Station  
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Brought Forward			
<u>Supply and deliver the following booster pumps ("KSB" or other approved), complete with all with electrical connection to isolator, internal pump house reticulation piping- and drain piping, electrical control wiring, brackets, supports, steel bases, control panel and all necessary accessories, as per the specification and manufacturer's recommendation.</u>			
356	Supply, delivery, installation, connection, testing & commissioning of complete fire water (Electric) pump set including valves, vacuum breaks, auto air vents, etc. Electric pump sized for 2400 L/m @12.08bar, Electrical Jockey pump sized for 60 L/min @12.08bar)	No	1
357	Supply, delivery, installation, connection, testing & commissioning of pump control panels		Item
358	Supply, delivery, installation, connection, testing & commissioning of all electrical work in the pump house		Item
359	190 x 190mm Photoluminescent pictograms statutory signs on chromadek or other equally approved material	No	11
360	Supply, delivery, installation, connection, testing & commissioning of trunk mains from pump house to installation of control valves		Item
<u>SABS approved Black Mild Steel pipes including all holderbats and couplings in the running length with welded type fittings to be used. All pipe in wall/floor chases to be wrapped twice in brown Kraft paper. Pipes passing through opening in brickwork or slab shall be coated with DENZO Protective pipe wrapping. All pipes to be painted with one coat primer and two coats signal red.</u>			
361	40mm Pipes (LI)	m	25
362	100mm Pipes (LI)	m	23
<u>Pipework, valves, fittings, etc.</u>			
363	2500kPa Pressure gauge	No	8
364	Fire water pump test meter	No	1
365	100mm Butterfly valve	No	2

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Brought Forward		R	
366	150mm Butterfly valves	No	3
367	150mm Non-return valve	No	2
368	150mm Expansion joints	No	4
369	150mm Strainer	No	1
370	150mm Gate valve	No	3
371	250mm Gate valve	No	2
372	Vortex impellers	No	2
373	Pressure switch	No	5
374	20mm Ball valve	No	5
375	20mm Check valve	No	4
376	50mm Rubber expansion joints	No	2
377	50mm Check valve	No	1
378	50mm Ball valve	No	1
379	Membrane vessel	No	1
380	100mm Black mild steel elbows	No	5
381	150mm Black mild steel elbows	No	4
382	250mm Black mild steel elbows	No	3
383	150mm Black mild steel tee-pieces	No	2
384	250mm Black mild steel tee-pieces	No	1
385	100mm Black mild steel straight piping	No	8
386	150mm Black mild steel straight piping	No	30
387	250mm Black mild steel straight piping	No	18
<u>Auxiliary equipment</u>			
Carried Forward		R	
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Brought Forward			
<u>Allow for all auxiliary equipment as specified in this document as well as the SANS 10287 code of practice, incl. valves, fittings supports, fire detection, ventilation, sprinkler protection to pumphouse, etc. Pricing to be in accordance with requirements of pump room as per D0000- MB-A1-03</u>			
388	Ventilation fan sized for 30 Air changes per hour	No	1
389	Upright Sprinkler head directly above pump inclusive of range piping	No	2
390	250L Diesel tank with bund	No	1
391	Pumproom alarm siren and strobe	No	1
392	Fire retardant cable Class A wiring (ph 30)	m	10
393	25mm PVC conduit in accordance with SANS 10139	m	10
<b><u>WATER TANK BASE AND PLINTH</u></b>			
<b><u>Earthworks (CPAP Work Group No. 104)</u></b>			
<b><u>Excavation in earth not exceeding 2m deep</u></b>			
394	Reduced levels under floors (LI)	m3	16
395	Edge thickening (LI)	m3	3
<b><u>Extra over all excavations for carting away</u></b>			
396	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	19
<b><u>Risk of collapse of excavations</u></b>			
397	Sides of trench and hole excavations exceeding 1,5m and not exceeding 3m deep	m2	12
<b><u>Compaction of surfaces</u></b>			
398	Compaction of ground surface under floors, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% mod AASHTO density	m2	27

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**Samora Machel New Police Station**  
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	Brought Forward	R
<u>Earth filling of G5 material supplied by contractor from commercial sources in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density in 150mm thick layers</u>		
399	Under floors, steps, pavings, etc. (LI)	m3 8
<u>Prescribed density tests on filling</u>		
400	Modified AASHTO Density tests	No 2
<u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years</u>		
401	Under floors, sides, etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming (LI)	m2 39
<u>Concrete (CPAP Work Group No. 110)</u>		
<u>Reinforced concrete cast against excavated surfaces and/or formwork</u>		
<u>30MPa/19mm concrete</u>		
402	Surface base (LI)	m3 8
403	Edge thickening (LI)	m3 3
<u>Reinforced concrete cast against on/in formwork</u>		
<u>30MPa/19mm concrete</u>		
404	Upstand beams (Plinth) (LI)	m3 4
<u>Test cubes</u>		
405	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No 3
<u>Concrete sundries</u>		
<u>Finishing top surfaces of concrete smooth with a wood float</u>		
406	Surface beds, slabs, etc. (LI)	m2 27
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**Samora Machel New Police Station  
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		<b>Brought Forward</b>	
<b><u>40Mpa Non-shrink grout:</u></b>			
407	Bedding approximately 250 x 40mm thick	m	31
<b><u>Formwork (CPAP Work Group No. 111)</u></b>			
<b><u>Smooth formwork to sides</u></b>			
408	Upstand beams (Plinth) (LI)	m2	28
409	Edges, risers, ends and reveals not exceeding 300mm high or wide (LI)	m	21
<b><u>Reinforcement (CPAP Work Group No. 114)</u></b>			
<b><u>High tensile steel reinforcement to structural concrete work</u></b>			
410	Bars of various diameters (LI)	t	2,55
<b><u>Waterproofing (CPAP Work Group No. 120)</u></b>			
<b><u>One layer of 375 micron waterproof sheeting sealed at laps as per approval</u></b>			
411	Under surface beds including sides (LI)	m2	39
<b><u>Metalwork (CPAP Work Group No. 136)</u></b>			
<b><u>80 x 8mm Thick heavy duty GMS plate fixed on to reinforced concrete plinth</u></b>			
412	5180mm long flat plate	No	6
<b><u>SAND, OIL AND GREASE TRAP</u></b>			
<b><u>Earthworks (CPAP Work Group No. 104)</u></b>			
<b><u>Excavation in earth not exceeding 2m deep</u></b>			
413	Holes (LI)	m3	9
<b><u>Extra over all excavations for carting away</u></b>			
414	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	8

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<b><u>Risk of collapse of excavations</u></b>				
415	Sides of trench and hole excavations exceeding 1,5m and not exceeding 3m deep	m2	17	
<b><u>Compaction of surfaces</u></b>				
416	Compaction of ground surface under floors, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% mod AASHTO density	m2	7	
<b><u>Earth filling obtained from excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density</u></b>				
417	Backfilling to trenches, holes, etc. (LI)	m3	1	
<b><u>Prescribed density tests on filling</u></b>				
418	Modified AASHTO Density tests	No	2	
<b><u>Approved anti-termite soil insecticide applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years including forming and poisoning shallow furrows along sides of foundation walls, etc., filling in and ramming:</u></b>				
419	Under floors, sides, etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming (LI)	m2	24	
<b><u>Concrete (CPAP Work Group No. 110)</u></b>				
<b><u>Reinforced concrete cast against excavated surfaces and/or formwork</u></b>				
<b><u>30MPa/19mm concrete</u></b>				
420	Surface base (LI)	m3	2	
<b><u>Reinforced concrete cast against on/in formwork</u></b>				
<b><u>30MPa/19mm concrete</u></b>				
421	Slabs (LI)	m3	1	
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Brought Forward		
<u>Test cubes</u>		
422	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No 2
<u>Concrete sundries</u>		
<u>Finishing top surfaces of concrete smooth with a wood float</u>		
423	Surface beds, slabs, etc. (LI)	m2 13
<u>Formwork (CPAP Work Group No. 111)</u>		
<u>Smooth formwork to soffits</u>		
424	Slabs, propped up not exceeding 3.5m high (LI)	m2 6
<u>Smooth formwork to sides</u>		
425	Edges, risers, ends and reveals not exceeding 300mm high or wide (LI)	m 39
<u>Boxing in smooth formwork to form</u>		
426	Extra over formwork to form opening size 225 x 225mm through 180mm thick slab (LI)	No 2
427	Extra over formwork to form opening size 550mm diameter through 180mm thick slab (LI)	No 3
<u>Movement Joints, Etc.</u>		
<u>Two sheets of tempered hardboard (smooth sides together) to form slip joint between abutting horizontal concrete and brickwork surfaces</u>		
428	Not exceeding 300mm wide (LI)	m 14
<u>Reinforcement (CPAP Work Group No. 114)</u>		
<u>High tensile steel reinforcement to structural concrete work</u>		
429	Bars of various diameters (LI)	t 0,15

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**Samora Machel New Police Station  
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Brought Forward			R
<b><u>Fabric reinforcement</u></b>			
430	Type Ref. 193 fabric reinforcement in concrete surface beds, slabs, etc. (LI)	m2	7
<b><u>Masonry (CPAP Work Group No. 116)</u></b>			
<b><u>Brickwork of NFX bricks in class II mortar</u></b>			
431	Half brick walls (LI)	m2	3
432	One brick walls (LI)	m2	9
<b><u>Brickwork sundries</u></b>			
<b><u>2.5mm Galvanised brickwork reinforcement</u></b>			
433	75mm Wide reinforcement built in horizontally (LI)	m	12
434	155mm Wide reinforcement built in horizontally (LI)	m	35
<b><u>Waterproofing (CPAP Work Group No. 120)</u></b>			
<b><u>One layer of 375 micron Brikrip DPC embossed damp proof course as per approval</u></b>			
435	In walls (LI)	m2	3
<b><u>One layer of 375 micron waterproof sheeting sealed at laps as per approval</u></b>			
436	Under surface beds (LI)	m2	7
<b><u>Drainage (CPAP Work Ground No. 146 Unless Otherwise Stated)</u></b>			
<b><u>uPVC pipes cast into concrete slabs, fixed to soffit and walls, or chased into walls, chased into concrete, etc. in accordance with manufacturers specifications</u></b>			
437	110mm Pipes (LI)	m	9
<b><u>Extra over uPVC pipes for:</u></b>			
438	110mm Bend (LI)	No	5
439	110mm Junction (LI)	No	2
Carried Forward			R
Bill No. 19 External Works			

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<u>Gratings, covers, etc.</u>				
440	225 x 255mm, cast iron cover and frame including	No	2	
441	550mm Diameter x 176kg, type 2A cast iron cover and frame including	No	3	
<b><u>ATTENUATION TANK</u></b>				
<u>Earthworks (CPAP Work Group No. 104)</u>				
<u>Excavation in earth not exceeding 2m deep</u>				
442	Holes (LI)	m3	153	
<u>Excavation in earth exceeding 2m and not exceeding 4m deep</u>				
443	Holes (LI)	m3	87	
<u>Extra over bulk excavation in earth for excavation in:</u>				
444	Intermediate material	m3	24	
445	Hard material	m3	12	
<u>Extra over all excavations for loading, carting and dumping surplus excavated material, rubble, etc. (no allowance made for increase in bulk)</u>				
446	Off site to a dumping site to be found by the Contractor.	m3	194	
<u>Keeping excavations free of water</u>				
447	Keeping excavations free of all water other than subterranean water		Item	
<u>Risk of collapse of excavations</u>				
448	Risk of collapse of sides of trenches and holes exceeding 1,5m deep	m2	114	
Carried Forward				R
Bill No. 19 External Works				

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<b><u>Compaction of surfaces</u></b>				
449	Compaction of ground surface under bases etc., including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod. AASHTO density	m2	77	
<b><u>Earth filling obtained from excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density</u></b>				
450	Backfilling to trenches, holes, etc. (LI)	m3	46	
<b><u>Earth filling of G5 material supplied by contractor from commercial sources in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density in 150mm thick layers</u></b>				
451	Under floors, steps, pavings, etc. (LI)	m3	34	
<b><u>Prescribed density tests on filling</u></b>				
452	Modified AASHTO Density tests	No	13	
<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years</u></b>				
453	Under floors, sides, etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming (LI)	m2	191	
<b><u>Concrete (CPAP Work Group No. 110)</u></b>				
<b><u>Unreinforced concrete cast against excavated surfaces</u></b>				
<b><u>15MPa/19mm concrete</u></b>				
454	Blinding (LI)	m3	5	
<b><u>Reinforced concrete cast against excavated surfaces and/or formwork</u></b>				
<b><u>35MPa/19mm concrete</u></b>				
455	Surface base (LI)	m3	18	
Carried Forward				R
Bill No. 19 External Works				

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M.B

**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<b><u>Reinforced concrete cast against on/in formwork</u></b>				
<b><u>35MPa/19mm concrete</u></b>				
456	Walls (LI)	m3	19	
457	Slabs (LI)	m3	18	
<b><u>Test cubes</u></b>				
458	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	9	
<b><u>Concrete sundries</u></b>				
<b><u>Finishing top surfaces of concrete smooth with a wood float</u></b>				
459	Surface beds, slabs, etc. (LI)	m2	119	
<b><u>Formwork (CPAP Work Group No. 111)</u></b>				
<b><u>Smooth formwork to sides</u></b>				
460	Walls, propped up not exceeding 3.5m high (LI)	m2	62	
461	Edges, risers, ends and reveals not exceeding 300mm high or wide (LI)	m	65	
<b><u>Smooth formwork to soffits</u></b>				
462	Slabs exceeding 250mm and not exceeding 500mm thick, propped up not exceeding 3.5m high (LI)	m2	59	
<b><u>Boxing in smooth formwork to form</u></b>				
463	Extra over formwork to form opening size 375mm diameter through 300mm thick walls (LI)	No	2	
464	Extra over formwork to form opening size 1000 x 1000mm through 300mm thick slab (LI)	No	1	
<b><u>Reinforcement (CPAP Work Group No. 114)</u></b>				
<b><u>High tensile steel reinforcement to structural concrete work</u></b>				
465	Bars of various diameters (LI)	t	9,27	
Carried Forward				R
Bill No. 19 External Works				

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			
<u>Galvanised wire support. Tenderer's are refer to Civil Engineer drawing no.: 23023-STR-007 for details, annexed to these bills of quantities.</u>			
466	Approximate 300mm R10 clip (LI)	No	217
467	Approximate 250mm Y10 clip (LI)	No	217
<u>Drainage (CPAP Work Ground No. 146 Unless Otherwise Stated)</u>			
<u>Gratings, covers, etc.</u>			
468	1000 x 1000mm, cast iron cover and frame including	No	1
<u>COVERED WALKWAY</u>			
<u>Earthworks (CPAP Work Group No. 104)</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
469	Bases	m3	89
<u>Extra over all excavations for carting away</u>			
470	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	46
<u>Risk of collapse of excavations</u>			
471	Sides of trench and hole excavations exceeding 1,5m and not exceeding 3m deep	m2	298
<u>Compaction of surfaces</u>			
472	Compaction of ground surface under bases, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% mod AASHTO density	m2	89
<u>Earth filling obtained from excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density</u>			
473	Backfilling to trenches, holes, etc.	m3	43

Carried Forward

Bill No. 19  
External Works

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<u>Earth filling of G5 material supplied by contractor from commercial sources in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density in 150mm thick layers</u>				
474	Under bases, etc.	m3	13	
<u>Prescribed density tests on filling</u>				
475	Modified AASHTO Density tests	No	4	
<u>Concrete (CPAP Work Group No. 110)</u>				
<u>Unreinforced concrete cast against excavated surfaces</u>				
<u>15MPa/19mm concrete</u>				
476	Surface blinding under bases	m3	5	
<u>Reinforced concrete cast against excavated surfaces and/or formwork</u>				
<u>30MPa/19mm concrete</u>				
477	Base	m3	27	
<u>Reinforced concrete cast against on/in formwork</u>				
<u>30MPa/19mm concrete</u>				
478	Stub columns	m3	2	
<u>Test cubes</u>				
479	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	5	
<u>40Mpa Non-shrink grout</u>				
480	Bedding approximately 25mm thick under base plate including chamfered edges all round	m2	3	
Carried Forward				R
Bill No. 19 External Works				
338				

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			
<u>Holding down bolts, etc</u>			
481	Set out and embed 100mm long M12 holding down bolts with 30 x 30 end plates in top of concrete in exact position	No	248
<u>Formwork (CPAP Work Group No. 111)</u>			
<u>Smooth formwork to sides</u>			
482	Stub columns	m2	30
<u>Reinforcement (CPAP Work Group No. 114)</u>			
483	Various diameter bars in high tensile steel reinforcement	t	3,63
<u>Roof Coverings, Etc. (CPAP Work Group No. 124)</u>			
<u>0.6mm thick colour coated galvanised sheet metal double-interlocking concealed fix profiled roofing fixed to timber purlins (timber purlins elsewhere measured)</u>			
484	Roof covering with pitches not exceeding 25 degrees fixed at walkways.	m2	152
<u>Sundries</u>			
485	Hip capping 550mm girth 3 times bent and notched on site to suit roof profile	m	2
486	Head wall flashing 550mm girth	m	63
487	Counter flashing	m	63
<u>Carpentry and Joinery (CPAP Work Group No. 126)</u>			

Carried Forward

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External Works

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<b><u>Pre-treatment of timber</u></b>				
This service falls within the areas defined in the National Building Regulations for treatment of timber against insect infestation / insect pest affecting softwood fixed permanently in all buildings.				
The regulations require that the timber be treated in terms of SABS 05 and to comply with SABS 457, 753, 754 or 1288 as relevant. Tenderer's are to make allowance in there rates.				
<b><u>Sawn softwood:</u></b>				
488	50 x 75mm Purlins	m	189	
489	50 x 228mm Rafter	m	122	
<b><u>Laminated Wrot Saligna</u></b>				
490	76 x 222mm Beams	m	126	
<b><u>"Everite Nutec" or other equally approved medium density pressed fibre-cement</u></b>				
491	15 x 255mm Fascias, including galvanised steel H-profile joiners	m	63	
492	80 x 275mm Angle section barge board, including galvanised steel H-profile joiners	m	14	
<b><u>Metalwork (CPAP Work Group No. 136)</u></b>				
<b><u>Hot Dipped Galvanised Sundry Steelwork</u></b>				
<b><u>Brackets, posts, etc. to roof timbers, etc.</u></b>				
493	100 x 100 x 3mm Hollow section post 2750mm high with 200 x 200 x 10mm thick base plate welded to one end and the other end welded to and including purpose made U-shaped bracket to suit 76 x 222mm high timber beam (Timber beam elsewhere measured) with 6 No. M8 pre-drilled holes on bracket and 4 No. M10 pre-drilled holes on base plate to suit site conditions.	No	62	
<b><u>Plumbing an Drainage (CPAP Work Group No. 148)</u></b>				
Carried Forward				R
Bill No. 19 External Works				
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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			R
<u>0.9mm Pre-coated aluminium seamless gutter colour brown with baked enamel finish, including hanger brackets, etc.</u>			
494	Purpose made 150 x 125mm Eaves gutters	m	63
495	Extra over gutter for stop end	No	6
496	Extra over gutter for corner	No	1
497	Extra over gutter for outlet	No	10
<u>0.9mm Pre-coated aluminium seamless rainwater downpipes colour brown with baked enamel finish, including holder butts, etc.</u>			
498	100 x 100mm Rainwater downpipes	m	31
499	Extra on rainwater pipe for bend	No	20
500	Extra on rainwater pipe for shoe	No	10
<u>Paintwork (CPAP Work Group No. 152)</u>			
<u>Two coats Carbolineum</u>			
501	On exposed trusses (LI)	m2	132
<u>One coat primer, one coat universal undercoat and two coats "Velvaco Polyurethane Enamel" or equal and approved paint</u>			
502	On fascia and barge boards (LI)	m	77
<u>Prepare and apply one coat of zinc chromate primer one coat universal undercoat and two coats of universal SABS approved gloss enamel paint. Colour to be chosen by Architect.</u>			
503	On steel posts (LI)	m2	68
<u>COVERED CARPORTS</u>			
<u>Earthworks (CPAP Work Group No. 104)</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
504	Bases (LI)	m3	109
Carried Forward			R
Bill No. 19 External Works			

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<u>Extra over all excavations for carting away</u>				
505	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	59	
<u>Risk of collapse of excavations</u>				
506	Sides of trench and hole excavations exceeding 1,5m and not exceeding 3m deep	m2	334	
<u>Compaction of surfaces</u>				
507	Compaction of ground surface under bases, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% mod AASHTO density	m2	95	
<u>Earth filling obtained from excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density</u>				
508	Backfilling to trenches, holes, etc. (LI)	m3	50	
<u>Earth filling of G5 material supplied by contractor from commercial sources in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density in 150mm thick layers</u>				
509	Under bases, etc. (LI)	m3	13	
<u>Prescribed density tests on filling</u>				
510	Modified AASHTO Density tests	No	11	
<u>Concrete (CPAP Work Group No. 110)</u>				
<u>Unreinforced concrete cast against excavated surfaces</u>				
<u>15MPa/19mm concrete</u>				
511	Surface blinding under bases (LI)	m3	4	
<u>Reinforced concrete cast against excavated surfaces and/or formwork</u>				
Carried Forward				R
Bill No. 19 External Works				
342				

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			R
	<u>30MPa/19mm concrete</u>		
512	Base (LI)	m3	33
	<u>Reinforced concrete cast against on/in formwork</u>		
	<u>30MPa/19mm concrete</u>		
513	Stub columns (LI)	m3	9
	<u>Test cubes</u>		
514	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	7
	<u>40Mpa Non-shrink grout</u>		
515	Bedding approximately 25mm thick under base plate including chamfered edges all round	m2	11
	<u>Holding down bolts, etc</u>		
516	Set out and embed 100mm long M12 holding down bolts with 30 x 30 end plates in top of concrete in exact position	No	208
	<u>Formwork (CPAP Work Group No. 111)</u>		
	<u>Smooth formwork to sides</u>		
517	Stub columns (LI)	m2	81
	<u>Reinforcement (CPAP Work Group No. 114)</u>		
518	Various diameter bars in high tensile steel reinforcement (LI)	t	5,05
	<u>Structural Steel (CPAP Work Group No. 134)</u>		
	<u>Welded columns in single lengths with flat section base, top, bearer and connection plates bolted to reinforced concrete at bottom and parallel flanged channel at top</u>		
519	100 x 100 x 4 SHS Columns	t	1,78
Carried Forward			R
Bill No. 19 External Works			
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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<u>Welded beams in single lengths with flat section bearer and connection plates bolted to columns</u>				
520	100 x 100 x 4 SHS Beams	t	1,67	
<u>Welded purlins, bracing, trimmers, eaves runner, etc. with flat section connection plates bolted to steel</u>				
521	150 x 75 x 20 x 2.5 CFLC purlins	t	3,34	
522	40 x 40 x 3 Angle bracing	t	0,41	
523	50 x 50 x 5 Angle bracing	t	1,69	
<u>Sundry Steelwork</u>				
524	Cleats, plates, gussets, connectors, etc.	t	4,39	
<u>Paintwork</u>				
<u>Remove all grease and oil by washing with a water emulsifiable solvent degreaser and rinsing with potable water, dry abrasive blast to rear white metal in accordance with Sa 2.5 of the International Standard ISO 850-1 to obtain a surface profile of 25 - 75 microns and apply one coat Inter guard 269 galvanizing primer and two coats Interthane 990 re-coatable polyurethane</u>				
525	On columns, beams, purlins, angles, etc.	t	9,01	
526	On cleats, plates, gussets, connectors, etc.	t	4,39	
<u>Roof Coverings, Etc. (CPAP Work Group No. 124)</u>				
<u>Profiled Metal Sheetting and Accessories</u>				
<u>0.6mm thick colour coated galvanised sheet metal double-interlocking concealed fix profiled roofing fixed to steel purlins (steel purlins elsewhere measured)</u>				
527	Roof covering with pitch not exceeding 25 degrees	m2	575	
<u>Sundries</u>				
528	Barge flashing, 550mm girths	m	169	
Carried Forward				R
Bill No. 19 External Works				
344				

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			
529	Fascia flashing, 550mm girths	m	99
<b><u>Plumbing an Drainage (CPAP Work Group No. 148)</u></b>			
<b><u>0.9mm Pre-coated aluminium seamless gutter colour brown with baked enamel finish, including hanger brackets, etc.</u></b>			
530	Purpose made 150 x 125mm Eaves gutters	m	99
531	Extra over gutter for stop end	No	12
532	Extra over gutter for outlet	No	15
<b><u>0.9mm Pre-coated aluminium seamless rainwater downpipes colour brown with baked enamel finish, including holder butts, etc.</u></b>			
533	100 x 100mm Rainwater downpipes	m	48
534	Extra over rainwater pipe for bend	No	30
535	Extra over rainwater pipe for shoe	No	15
<b><u>RAINWATER TANKS AND BASES</u></b>			
<b><u>Earthworks (CPAP Work Group No. 104)</u></b>			
<b><u>Excavation in earth not exceeding 2m deep</u></b>			
536	Reduced level (LI)	m3	22
537	Edge thickening (LI)	m3	11
<b><u>Extra over all excavations for carting away</u></b>			
538	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	33
<b><u>Risk of collapse of excavations</u></b>			
539	Risk of collapse of sides of trench excavations exceeding 1.5m deep	m2	68

Carried Forward

Bill No. 19  
External Works

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<u>Compaction of surfaces</u>				
540	Compaction of ground surface under floors compacted to 95% Mod. AASHTO density	m2	40	
<u>Earth filling of G5 material supplied by contractor from commercial sources in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density in 150mm thick layers</u>				
541	Under floors, steps, pavings, etc. (LI)	m3	12	
<u>Prescribed density tests on filling</u>				
542	Modified AASHTO Density tests	No	2	
<u>Approved anti-termite soil insecticide applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years including forming and poisoning shallow furrows along sides of foundation walls, etc., filling in and ramming:</u>				
543	Under floors, sides, etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming (LI)	m2	84	
<u>Concrete (CPAP Work Group No.110)</u>				
<u>Reinforced concrete cast against excavated surfaces and/or formwork</u>				
<u>30MPa/19mm concrete</u>				
544	Surface bed (LI)	m3	10	
545	Edge thickening (LI)	m3	11	
<u>Test Cubes</u>				
546	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	4	
<u>Concrete Sundries</u>				
<u>Finishing top surfaces of concrete smooth with a wood float</u>				
547	Surface beds, slabs, etc. (LI)	m2	40	
Carried Forward				R
Bill No. 19 External Works				

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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward			R
<b><u>Formwork (CPAP Work Group No. 111)</u></b>			
<b><u>Smooth formwork to sides</u></b>			
548	Edges, risers, ends and reveals not exceeding 300mm high or wide (LI)	m	80
<b><u>Reinforcement (CPAP Work Group No. 114)</u></b>			
<b><u>Fabric reinforcement</u></b>			
549	Type ref. 193 fabric reinforcement in concrete surface beds, slabs, etc. (LI)	m2	40
550	Type ref. 193 fabric reinforcement in concrete edge thickening (LI)	m2	72
<b><u>Masonry (CPAP Work Group No. 116)</u></b>			
<b><u>Brickwork of NFP bricks in class II mortar</u></b>			
551	One brick walls (LI)	m2	21
<b><u>Brickwork sundries</u></b>			
<b><u>2.5mm Galvanised brickwork reinforcement</u></b>			
552	155mm Wide reinforcement built in horizontally (LI)	m	82
<b><u>Brickwork sundries</u></b>			
<b><u>Bagging of 1:3 cement and sand mixture</u></b>			
553	On brick walls, piers, etc. (LI)	m2	21
<b><u>Face brickwork</u></b>			
<b><u>"Corojem Nebraska FBS" or other equally approved face bricks pointed with tinted recessed horizontal and vertical joints</u></b>			
554	Extra over brickwork for face brickwork on both sides of wall (LI)	m2	21
555	Extra over brickwork for brick-on-edge header course bands one course high (LI)	m	80
Carried Forward			R
Bill No. 19 External Works			
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**Samora Machel New Police Station  
Portion 01 of STAND 8972 (Samora Machel)**

Brought Forward				R
<b><u>Waterproofing (CPAP Work Group No. 120)</u></b>				
<b><u>Two coats emulsion bitumen emulsion waterproof coating as per approval</u></b>				
556	On bagged brick walls, piers, etc. (LI)	m2	21	
<b><u>Plumbing (CPAP Work Group No. 148)</u></b>				
<b><u>Polyethylene rainwater tanks, etc.</u></b>				
557	5000 Litres "JoJo" rainwater tank or other equally approved, with 100 x 100mm opening for downpipe from gutter including 50mm diameter overflow opening and outlet union for 20mm tap (tap elsewhere measured) and place in position on plinth and secure with twisted double strand 4mm galvanised wire.	No	10	
<b><u>Taps, valves, etc.</u></b>				
558	Hose bib tap, brass including 3/4 hose union, etc. (Code: COB-208-20)	No	10	
<b><u>Plastering (CPAP Work Group No. 142)</u></b>				
<b><u>Screeds wood floated, on concrete</u></b>				
559	Average 170mm thick on floors to falls (LI)	m2	40	
<b><u>FLAGPOLES</u></b>				
<b><u>Earthworks (CPAP Work Group No. 104)</u></b>				
<b><u>Excavation in earth not exceeding 2m deep</u></b>				
560	Bases (LI)	m3	1	
<b><u>Extra over all excavations for carting away</u></b>				
561	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	1	
<b><u>Risk of collapse of excavations</u></b>				
562	Sides of trench and hole excavations exceeding 1,5m and not exceeding 3m deep	m2	4	
Carried Forward				R
Bill No. 19 External Works				
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Brought Forward				R	
<u>Compaction of surfaces</u>					
563	Compaction of ground surface under bases, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% mod AASHTO density	m2	1		
<u>Concrete (CPAP Work Group No. 110)</u>					
<u>Reinforced concrete cast against excavated surfaces and/or formwork</u>					
<u>30MPa/19mm concrete</u>					
564	Base (LI)	m3	1		
<u>Test cubes</u>					
565	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	1		
<u>40Mpa Non-shrink grout</u>					
566	Bedding approximately 25mm thick under base plate including chamfered edges all round	m2	1		
<u>Reinforcement (CPAP Work Group No. 114)</u>					
567	Various diameter bars in high tensile steel reinforcement (LI)	t	0,12		
<u>Metalwork (CPAP Work Group No. 136)</u>					
<u>Flagpole</u>					
568	Flagpole comprises of 2x no. of 102mm x 50mm mild steel taper flange channels fixed to foundation, 200mm x 50mm x 6mm mild steel flat bar, 3x no. of 16mm diameter bolt with nut, 100mm diameter x 5000mm long aluminium pole with 4.2mm thickness, 100 x 50mm diameter aluminium reducer, 50mm diameter x 4000mm long aluminium pole with 4.2mm thickness, end cap, galvanised pulley, etc. all in accordance to flagpole details and specifications	No	2		
<u>LANDSCAPING</u>					
Carried Forward				R	
Bill No. 19 External Works					
350					

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