



---

**CONSTRUCTION OF A SMALL CLINIC AT BLAaubosch CLINIC**

---

**PART C2.3 BILL OF QUANTITIES**

Item  
No

**SECTION NO. 2**

**BILL NO. 1**

**EARTHWORKS**

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural and Structural Works Information before pricing this Bill of Quantities

**SUPPLEMENTARY PREAMBLES**

**Proprietary items or materials**

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

**SUPPLEMENTARY PREAMBLES**

**Nature of ground**

Descriptions of excavations shall be deemed to include all ground conditions classifiable as "soft material" described in the above report and where conditions of a more difficult character are indicated these are separately measured

**Carting away of excavated material**

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site

**Filling**

Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material

**Carried to Collection**

Builders Work  
 Bill No. 1  
 Earthworks

Quantity

Rate

Amount  
R

R

<b><u>Subterranean water</u></b>				
No information regarding subterranean water is available. The Contractor must acquaint himself of the presence and depth of subterranean water and allow therefore in his prices				
<b><u>SITE CLEARANCE ETC</u></b>				
<b><u>Site Clearance</u></b>				
1	Clear the whole area of the site to be built upon including the removal of all small shrubs and trees with a trunk not exceeding 200mm girth measured 1m above ground level	m2	5,725	
2	Stripping average 100mm thick layer of top soil and stockpiling on site	m2	5,725	
<b><u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u></b>				
<b><u>Excavation in earth not exceeding 2m deep</u></b>				
3	Reduced levels under floors	m3	791	
4	Trenches and holes etc	m3	165	
5	Ground beams	m3	132	
6	Bases	m3	1,109	
<b><u>Back excavation of vertical sides of excavation in earth for working space including backfilling compacted to 95% Mod AASHTO density</u></b>				
7	Not exceeding 500mm deep for placing and removing formwork to walls etc., against excavated face. (Labour Intensive)	m2	788	
8	Exceeding 500mm and not exceeding 1500mm deep for placing and removing formwork to walls etc., against excavated face. (Labour Intensive)	m2	337	
<b><u>Extra over bulk excavation in earth for excavation in</u></b>				
9	Soft Rock	m3	138	
<b>Carried to Collection</b>				
Builders Work				
Bill No. 1				
Earthworks				

10	Hard Rock	m3	68
	<b><u>Extra over all excavations for carting away</u></b>		
11	Extra over all excavations for carting away surplus material from excavations and/or stockpile on site to a dumping site to be located by the Contractor (Topsoil)	m3	862
	<b><u>Risk of collapse of excavations</u></b>		
12	Sides of bulk excavations not exceeding 1,5m deep	m2	1,125
	<b><u>Keeping excavations free of water</u></b>		
13	Allow for keeping excavations entirely free from water and mud	Item	1.00
	<b><u>FILLING ETC</u></b>		
	<b><u>Earth filling from the excavations and/or stockpiles compacted to 95% Mod AASHTO density</u></b>		
14	Backfilling to holes, trenches, etc	m3	98
15	Under floors, steps, pavings, etc	m3	135
	<b><u>G5 Earth filling supplied by the contractor, compacted to 95% Mod AASHTO density</u></b>		
16	Under floors, steps, pavings, etc	m3	767
	<b><u>Coarse river sand filling supplied by the contractor</u></b>		
17	Under floors etc	m3	113
	<b><u>Compaction of surfaces</u></b>		
18	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 98% Mod AASHTO density	m2	2,639
19	Compaction of trench surface including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	611

Carried to Collection

Builders Work  
 Bill No. 1  
 Earthworks

R

<b><u>Prescribed density tests on filling</u></b>		
20	"Modified AASHTO Density" test	No 65
<b><u>SOIL POISONING</u></b>		
<b><u>Soil insecticide</u></b>		
21	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2 2,639
22	To bottom and sides of trenches	m2 1,733

Carried to Collection

Builders Work  
 Bill No. 1  
 Earthworks

R

Earthworks

**COLLECTION**

Total Brought Forward from Page No.

Page  
 No  
 19  
 20  
 21  
 22

Amount  
 R

**Carried Forward to Final Summary**

Builders Work  
 Bill No. 1  
 Earthworks

R

Item No		Quantity	Rate	Amount R
	<p><b><u>SECTION NO. 2</u></b></p> <p><b><u>BILL NO. 2</u></b></p> <p><b><u>CONCRETE FORMWORK AND REINFORCEMENT</u></b></p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural and Structural Works Information before pricing this Bill of Quantities</p>			
	<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><b><u>Formwork</u></b></p> <p>Descriptions of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use. The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself</p> <p>Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described</p>			
	<b>Carried to Collection</b>			R
	<p>Builders Work            Bill No. 2            Concrete, Formwork and Reinforcing</p>			

Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described

Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"

**UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**

**15Mpa/19mm concrete**

1	Surface blinding under footings and bases	m3	28
---	---	----	----

**REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**

**25Mpa/19mm concrete**

2	Strip footings	m3	75
---	----------------	----	----

3	Bases	m3	21
---	-------	----	----

4	Columns in foundations	m3	12
---	------------------------	----	----

**25Mpa/19mm concrete**

5	Surface beds and thickenings, etc cast in panels on waterproofing	m3	289
---	---	----	-----

6	Stub columns	m3	5
---	--------------	----	---

**Carried to Collection**

R

Builders Work  
 Bill No. 2  
 Concrete, Formwork and Reinforcing



<b><u>Rectangular cast insitu concrete surface water channels</u></b>		
7	100mm Thick shallow equal 'V' shaped rectangular concrete drainage channel 1m wide overall including all earthworks, formwork and ref 193 mesh reinforcement cast in panels not exceeding 3m long, backfilling etc and finishing tops and sides smooth with a wood float	m 360

**REINFORCED CONCRETE**

**25Mpa/19mm concrete**

8	Slabs including beams and inverted beams	m3 6
9	Ground beams	m3 274
10	Columns	m3 16

**TEST CUBES**

11	Allow for all necessary concrete test cubes size 150 x 150 x 150mm cast from batches of concrete required for the entire contract as specified, made, stored, cured and tested in accordance with SABS Methods 861 and 863, including use of approved cube moulds, transporting to an approved testing laboratory for testing, paying all charges and submitting reports to the Head: Works	Sets 72.0
----	---	-----------

**CONCRETE SUNDRIES**

**Finishing top surfaces of concrete smooth with a wood or steel float**

12	Surface beds, ramps, slabs, aprons, etc laid in panels to falls and currents	m2 2,639
----	--	----------

**ROUGH FORMWORK (DEGREE OF ACCURACY III)**

**Rough formwork to sides**

13	Rectangular columns in foundations (Provisional)	m2 97
14	Beams	m2 1,122

Carried to Collection

Builders Work  
 Bill No. 2  
 Concrete, Formwork and Reinforcing

R

**SMOOTH FORMWORK (DEGREE OF ACCURACY I)**

**Smooth formwork to soffits**

15	Slabs not exceeding 250mm thick propped up exceeding 1.5m and not exceeding 3.5m high	m2	25
----	---	----	----

**Smooth formwork to sides**

16	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	351
----	--	---	-----

17	Rectangular columns	m2	124
----	---------------------	----	-----

**MOVEMENT JOINTS, ETC**

**Expansion joints with bitumen impregnated softboard between vertical concrete surfaces**

18	15mm Joints not exceeding 300mm wide	m	562
----	--------------------------------------	---	-----

**Expansion joints with high density polystyrene between vertical concrete and brick surfaces**

19	6mm Joints not exceeding 300mm high or wide with tear off strip	m	421
----	---	---	-----

**Saw cut joints**

20	3 x 40mm Deep saw cut joints in top of concrete	m	368
----	---	---	-----

**REINFORCEMENT (PROVISIONAL)**

**High tensile steel reinforcement to structural concrete work**

21	Various diameter bars	t	92.60
----	-----------------------	---	-------

**Fabric reinforcement**

22	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	2,640
----	--	----	-------

Carried to Collection

Builders Work  
 Bill No. 2  
 Concrete, Formwork and Reinforcing

R

Concrete, Formwork and Reinforcing <u>COLLECTION</u>			
	Page No		Amount R
Total Brought Forward from Page No.	24		
	25		
	26		
	27		
<b>Carried Forward to Final Summary</b>			R
Builders Work Bill No. 2 Concrete, Formwork and Reinforcing			

Item  
No

**SECTION NO. 2**

**BILL NO. 3**

**MASONRY**

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

**SUPPLEMENTARY PREAMBLES**

**Proprietary items or materials**

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

**Sizes in descriptions**

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

**Hollow walls, etc**

Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole

**Face bricks**

Face bricks shall be ordered timeously to obtain uniformity in size and colour

**Pointing**

Descriptions of pointing to face brickwork, lintels, copings, etc shall be pointed with ruled horizontal and vertical joints

**Carried to Collection**

Builders Work  
 Bill No. 3  
 Masonry

Quantity

Rate

Amount  
R

R

**Brickwork Bond**

All brickwork shall be laid in stretcher bond unless otherwise stated

**Wire ties**

All wire ties are to be 250 x 20 x 3mm thick galvanised vertical twisted ties

**FOUNDATIONS**

**Brickwork of NFX bricks (14 MPa nominal compressive strength) in class I mortar**

1	One brick wall	m2	533
---	----------------	----	-----

**SUPERSTRUCTURE**

**Brickwork of NFP bricks in class II mortar**

2	Piers	m3	6
3	Half brick walls	m2	937
4	Half brick walls in beamfilling	m2	167
5	One brick walls	m2	2,552

**MORTAR TESTING**

6	Allow for all necessary mortar test cubes size 150 x 150 x 150mm cast from batches of mortar required for the entire contract as specified, made, stored, cured and tested in accordance with Table C-1 of SABS code of practice 0164 - Part 1	Item	1.00
---	--	------	------

**BRICKWORK SUNDRIES**

**Brickwork reinforcement**

7	75mm Wide reinforcement built in horizontally	m	4,454
8	150mm Wide reinforcement built in horizontally	m	12,028

Carried to Collection

Builders Work  
 Bill No. 3  
 Masonry

R

<b><u>Precast prestressed concrete lintols</u></b>		
9	100 x 70mm Lintel in lengths not exceeding 3m bedded in cement mortar over half brick walls	m 166
10	Set of two 100 x 70mm Lintels in lengths not exceeding 3m bedded in cement mortar over one brick walls	m 192
<b><u>Turning pieces</u></b>		
11	115mm Wide turning piece to lintels, etc	m 166
<b><u>Galvanised hoop iron cramps, ties, etc</u></b>		
12	30 x 1,2mm Wall tie 660mm long each end built into brickwork at abutting ends of walls at movement joints including holing joint filler board	No 310
<b><u>Air bricks, etc</u></b>		
13	230 x 152mm Clay vermin proof air bricks	No 52
<b><u>White plastic air vent</u></b>		
14	White plastic air vent size 235 x 157mm fixed to wall with white cement mortar	No 52
<b><u>FACE BRICKWORK</u></b>		
<b><u>'Corobrick Roan Satin' FBX face bricks laid in stretcher bond pointed with "ruled" horizontal and vertical joints</u></b>		
15	Extra over brickwork for face brickwork in foundations	m2 325
16	Extra over ordinary brickwork for face brickwork	m2 1,984
17	Extra over brickwork in piers for face brickwork	m2 6
18	Extra over brickwork in beam filling for face brickwork	m2 167
19	Half brick linings to concrete including wire ties for face brickwork	m2 72
20	Fair raking cutting	m 139

Carried to Collection

Builders Work  
 Bill No. 3  
 Masonry

R

<u>Brick-on-edge header course copings, lintols, sills, etc of 'Corobrick Roan Satin' FBX face bricks in Class 1 cement mortar including "ruled" pointed joints on all exposed faces</u>			
21	Brick-on-edge header course lintel in 230mm wall and pointing on front face and 110mm wide soffit	m	166
22	Brick-on-edge header course lintel in 230mm wall and pointing on both faces and 230mm wide soffit	m	32
23	Brick-on-flat header course reveal pointed on face and 230mm into recess	m	15
24	230mm Wide sill set sloping and slightly projecting	m	192
25	Brick-on-edge coping to top of one brick wall and pointing on top and both sides	m	26
<b><u>FIBRE-CEMENT WINDOW SILLS</u></b>			
<b><u>Natural grey sills in single lengths bedded in class II mortar including metal fixing lugs etc</u></b>			
26	100 x 15mm Wide sills set flat and slightly projecting	m	192
<b><u>DECORATIVE SCREEN WALLS AND GRILLES</u></b>			
<b><u>Screen walls of 150 x 160mm Tivoli Briti grille blocks in class II mortar pointed with flush joints</u></b>			
27	150mm Walls in panels pointed on both sides	m2	20

Carried to Collection

Builders Work  
 Bill No. 3  
 Masonry

R

Masonry

**COLLECTION**

Total Brought Forward from Page No.

Page  
No

29

30

31

32

Amount  
R

**Carried Forward to Final Summary**

R

Builders Work  
 Bill No. 3  
 Masonry



Item No		Quantity	Rate	Amount R
	<p><b><u>SECTION NO. 2</u></b></p> <p><b><u>BILL NO. 4</u></b></p> <p><b><u>WATERPROOFING</u></b></p> <p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
	<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p>Waterproofing of roofs shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs</p> <p>Derbigum waterproofing is to be laid in accordance with Derbigum's Code of Practice by an Approved Derbigum Contractor</p> <p>Preparation of substrata: Screeded roof surfaces shall be firm, dry and clean. Corners shall be coved or arris rounded. All surfaces to receive Derbigum are to be fully primed with a solvent based bitumen primer</p> <p><b>NOTE:</b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other approved - by the Head: Works</p>			
	<b>Carried to Collection</b>			R
	Builders Work Bill No. 4 Waterproofing			

<b><u>DAMP-PROOFING OF WALLS AND FLOORS</u></b>				
<b><u>ITE Products Vaporite or similar approved, water-based two part epoxy sealer which is creates a moisture or vapour barrier on concrete surface beds before self-levelling can be use. All in accordance with manufacturers installation specifications with guarantee as per manufacturer</u></b>				
1	On concrete floors	m2	2,962	
<b><u>One layer of 375 micron embossed damp proof course</u></b>				
2	In walls	m2	192	
3	Vertically between walls	m2	29	
<b><u>One layer of 250 micron green polyethylene waterproof sheeting sealed at laps with pressure sensitive tape</u></b>				
4	Under surface beds	m2	2,962	
<b><u>Two coats 'Brixéal' bitumen emulsion waterproof coating</u></b>				
5	On bagged outer face of inner skin of brick walls, etc	m2	2,151	
<b><u>JOINT SEALANTS, ETC</u></b>				
<b><u>Two-part grey polyurethane sealing compound including backing cord, bond breaker, primer, etc</u></b>				
6	15 x 10mm in vertical expansion joints	m	368	
<b>Carried to Collection</b>				
Builders Work				
Bill No. 4				
Waterproofing				
				R

Waterproofing

**COLLECTION**

Total Brought Forward from Page No.

Page  
No

34

35

Amount  
R

**Carried Forward to Final Summary**

R

Builders Work  
 Bill No. 4  
 Waterproofing

Item No		Quantity	Rate	Amount R
	<p><b><u>SECTION NO. 2</u></b></p> <p><b><u>BILL NO. 5</u></b></p> <p><b><u>ROOF COVERINGS, ETC</u></b></p> <p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
	<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><b><u>Sheeting:</u></b></p> <p>The roof sheeting shall be 0.80mm thick full hard IBR profile galvanised mild steel or other approved roof sheets, roll formed in continuous lengths and cut to length by a pneumatic cut-off process. A certificate verifying compliance to all current SANS codes in respect to galvanised sheeting shall be issued by the manufacturer</p> <p><b><u>Finishing of sheets:</u></b></p> <p>The paint finish shall be colour plus on one side and standard grey finish on the other side</p>			
	<b>Carried to Collection</b>			R
	<p>Builders Work            Bill No. 5            Roof Coverings</p>			

**Fixing of sheets:**

The roof sheeting shall be laid in long lengths, narrow flutes outermost, with single flute sidelaps facing away from prevailing wind. All sheets shall be secured to timber purlins utilising approved roofing screws in strict accordance to the manufacturers instructions. Sheeting is to be drilled and not punched, with side laps filled with approved Mastic sealant. Sheeting is to protrude a minimum of 50mm from ends of rafters

**Flashings:**

Flashings shall be approved by the manufacturer and fixed to the sheeting with approved fixings. Prior to flashings being fixed, all troughs at the apex shall be stop-ended to the full depth of the sheet in order to prevent any penetration of wind driven water. The trough shall be lipped at the eaves end to form a drip. Flashing flanges shall be notched to the sheet profile where necessary. Care shall be taken to ensure that no sheeting or flashing will be cut with abrasive disc on roof surface in order to prevent steel spatter from penetrating colour coated areas

**Erection:**

Every precaution shall be taken to prevent damage to roof sheets during all stages of construction. Duck boards should be used when necessary to protect the sheeting from damage. Sheeting which has become deformed or damaged in any way, shall be replaced, at no additional cost to the contract

**Safety:**

The contractor shall exercise special care when handling long length sheeting, particularly in windy conditions. Should work be interrupted for any reason, all loose sheeting and incomplete sections must be adequately secured against possible movement by wind and gravity

Carried to Collection

Builders Work  
 Bill No. 5  
 Roof Coverings

R

**Guarantee:**

The manufacturer shall comply with ISO9002 Quality Management System. Sheeting shall be laid in strict accordance with manufacturers specifications by an approved contractor. A written and approved five (5) year guarantee of site workmanship and water tightness shall be issued after final inspection of roof sheets by the manufacturer

**CORRUGATED METAL SHEETING AND ACCESSORIES**

**0,80mm Thick aluminium G4 colourtech roof sheeting with concealed fixing system to timber/steel purlins according to manufacturer's specifications. Sheets to be laid in full length from ridge to eaves. Non-standard colour the approval of the Client/Principal Agent.**

1	Roof covering with pitch not exceeding 25 degrees	m2	3,326
2	Ridge capping 462mm girth and three times bent	m	252
3	Hip capping 462mm girth and three times bent	m	102
4	Valley flashing 462mm girth and three times bent	m	89
5	Headwall flashing 462mm girth and three times bent	m	46
6	Sidewall flashing 462mm girth and three times bent	m	153
7	Counter flashing 462mm girth and three times bent	m	88
8	Hot dip galvanised metal polyclosures to under ridge capping and eaves	m	361
9	Sondor IBR pattern polyclosure under ridge capping and eaves	m	262
10	Extra over roof sheet for fixing every crown at eaves	m	361
11	Extra over for fixing every crown at ridge	m	262

**Carried to Collection**

Builders Work  
 Bill No. 5  
 Roof Coverings

R

**ROOF INSULATION**

**'Sisalation FR430' heavy industrial grade reinforced aluminium foil and polyethylene insulation with fire retardant properties**

12 Reinforced aluminium foil insulation and waterproofing lapped 140mm at all intersections as underlay to aluminium sheet metal roofing and supported on and including 1,6mm diameter galvanised wire supports spaced at 300mm centres and would around and screwed to steel or timber purlins including cutting and waste (measured nett)

m2

3,125

Carried to Collection

Builders Work  
 Bill No. 5  
 Roof Coverings

R

Roof Coverings

**COLLECTION**

Total Brought Forward from Page No.

Page  
 No  
 37  
 38  
 39  
 40

Amount  
 R

**Carried Forward to Final Summary**

Builders Work  
 Bill No. 5  
 Roof Coverings

R



Item No		Quantity	Rate	Amount R
	<p><b><u>SECTION NO. 2</u></b></p> <p><b><u>BILL NO. 6</u></b></p> <p><b><u>CARPENTRY AND JOINERY</u></b></p> <p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
	<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><b><u>Particle board:</u></b></p> <p>Particle board shall comply with the following specifications:</p> <p>a) SABS 1300 Particle board: exterior and flooring type</p> <p>b) SABS 1301 Particle board: interior type</p> <p><b><u>Joinery:</u></b></p> <p>Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc</p> <p>Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes</p> <p><b><u>Fixing</u></b></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete</p>			
	<b>Carried to Collection</b>			
	<p>Builders Work            Bill No. 6            Carpentry and Joinery</p>			R

**Decorative laminate finish:**

Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish. Laminate finish is to be "Formica Beige Universe 941"

**ROOFS, ETC**

**NOTE:**

For pricing of the structural roof trusses, tenderers are referred to the drawings included at the end of these Bills of Quantities

**Pre-fabricated timber roof trusses**

Roof trusses shall be manufactured, erected and braced in accordance with SABS 0243

Contractor is to allow for the design, supply, fabrication, delivery, erection as well as to provide a full set of shop drawings which must be checked and signed for approval by the Consultant Structural Engineer prior to commencement of fabrication.

The setting out, spacing and overall dimensions of the roof trusses which are at approximately 760mm centres and have a 18° pitch are shown on the drawings. All truss dimensions must conform with these requirements and all relevant details of the roof construction

The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the architect and/or the site before design or fabrication commences

**Prefabricated timber roof truss construction**

- |   |   |    |   |
|---|---|----|---|
| 1 | Design, supply and installation of a roof truss system size (approximate on flat 2960m <sup>2</sup> ) complete and in accordance with SANS, including cross battens at hips, valleys longitudinal bracing, etc as determined by the Structural Engineers requirements | No | 1 |
|---|---|----|---|

**Sawn softwood**

- |   |                        |   |       |
|---|------------------------|---|-------|
| 2 | 38 x 114mm Wall plates | m | 758   |
| 3 | 50 x 76mm Purlins      | m | 4,836 |

**Carried to Collection**

Builders Work  
 Bill No. 6  
 Carpentry and Joinery

R

4	76 x 76mm Splayed purlins	m	1,018
	<b><u>"Saligna" wrought laminated timber</u></b>		
5	63 x 198mm Beams	m	137
	<b><u>Sundries</u></b>		
6	Wrought faces on sawn timbers	m2	80
7	Two coats creosote on sawn timbers	m2	222
8	600mm Long wrought end to 38 x 114mm sawn timber and splayed cut	No	310
9	"Teco" or equally approved hurricane clips	No	4,989
	<b><u>EAVES, VERGES, ETC</u></b>		
	<b><u>"Everite Nutec" fibre-cement boards with H-type galvanised pressed steel jointing strips</u></b>		
10	15 x 220mm Fascias and barge boards with medium density plain finish secured to ends of timber with 12 x 40mm brass wood screws	m	368
	<b><u>DOORS, ETC</u></b>		
	<b><u>Wrought hardwood doors hung to steel frames</u></b>		
11	44mm Framed ledged and braced batten door 813 x 2032mm high (WD04) of 40 x 110mm top rail and stiles, 20 x 150mm middle ledge and 20 x 225mm bottom ledge and 20 x 110mm braces installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	7
	<b><u>Solid Laminated hardwood doors with 'Sapele' veneer to both sides suitable for painting and concealed hardwood edge strips hung to steel frames</u></b>		
12	40mm Door, size 813 x 2032mm high (WD07) with 1000mm high stainless steel cladding installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	4

Carried to Collection

Builders Work  
 Bill No. 6  
 Carpentry and Joinery

R

13	40mm Door, size 813 x 2032mm high (WD08) with 1000mm high stainless steel cladding installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	21	
14	40mm Door, size 900 x 2032mm high (WD09) including 1000mm high stainless steel cladding with 600 x600mm high aluminium louvres installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	9	
15	40mm Door, size 813 x 2032mm high (WD10) including 1000mm high stainless steel cladding with 600 x600mm high aluminium louvres and 150mm undercut installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	5	
16	40mm Door, size 813 x 2032mm high (WD11) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	12	
17	40mm Door, size 813 x 2032mm high (WD13) with 900mm high stainless steel cladding installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	16	
18	40mm Door, size 813 x 2032mm high (WD14) with 1000mm high stainless steel cladding installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	13	
19	40mm Door, size 1350 x 2100mm high (WD06B) Uneven double swing door with 300 x 400mm safety glazing viewing panel with 1000mm high stainless steel cladding installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	3	
20	40mm Door, size 1350 x 2100mm high (WD06) Uneven double swing door with 300 x 400mm safety glazing viewing panel with 1000mm high stainless steel cladding installed installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	4	
21	40mm Door, size 1400 x 2032mm high (WD05) Uneven double swing door with 1000mm high stainless steel cladding installed installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	3	
<b>Carried to Collection</b>				
Builders Work				
Bill No. 6				
Carpentry and Joinery				
				R

<b><u>Chipboard doors with melamine veneer</u></b>				
22	16mm Thick melamine double door BCD, size 950 x 1200mm high including hardwood frame to suit installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	12	
<b><u>"Bitcon Industries" fire doors with commercial veneer suitable for painting</u></b>				
23	"Rubidor" Class B fire door size 813 x 2032mm high (FD07) overall including pressed steel frame for one brick wall and preparing frame for door closer and lock installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	1	
24	"Rubidor" Class B uneven double fire door size 1400 x 2032mm high (FD05A) overall in two leaves with flush meeting stiles with one leaf fitted with 50 x 50 x 3mm stainless steel T-section rebate edge trim fitted to the edge of the door leaf for the full length and holed to receive cylinder lock bolt including pressed steel frame for one brick wall and and preparing frame for door closer installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	3	
25	"Rubidor" Class B double fire door size 1600 x 2032mm high (FD03) overall in two leaves with flush meeting stiles with one leaf fitted with 50 x 50 x 3mm stainless steel T-section rebate edge trim fitted to the edge of the door leaf for the full length and holed to receive cylinder lock bolt including pressed steel frame for one brick wall and and preparing frame for door closer installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	2	
<b><u>BUDGETARY ALLOWANCES</u></b>				
26	Allow an amount of R 500 000.00 (Five Hundred Thousand) or the supply and installation of Floor to ceiling Joinery fittings as determined by the Principal Agent	Item	1.00	500,000.00
				500,000.00
<b>Carried to Collection</b>				R
Builders Work				
Bill No. 6				
Carpentry and Joinery				

Carpentry and Joinery

**COLLECTION**

Total Brought Forward from Page No.

Page  
No

42

43

44

45

46

Amount  
R

**Carried Forward to Final Summary**

R

Builders Work  
 Bill No. 6  
 Carpentry and Joinery

Item No		Quantity	Rate	Amount R
	<p><b><u>SECTION NO. 2</u></b></p> <p><b><u>BILL NO. 7</u></b></p> <p><b><u>CEILING, PARTITIONS AND ACCESS FLOORING</u></b></p> <p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
	<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><b><u>Fixing</u></b></p> <p>Items described as 'nailed' shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete</p> <p>Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as 'bolted', the bolts have been given elsewhere</p> <p><b><u>Ceilings</u></b></p> <p>Unless otherwise described ceilings shall be deemed to be horizontal</p> <p><b><u>Bulkheads</u></b></p> <p>Bulkheads are defined as those portions of ceilings which are stepped down from the general ceiling level in a particular room or area and which generally occur along the perimeter. Their purpose is either to conceal services or to create architectural features</p>			
	<b>Carried to Collection</b>			R
	<p>Builders Work            Bill No. 7            Ceilings, Partitions and Access Flooring</p>			

Bulkheads have only been described as such where they conform to the above definition and where the horizontal or vertical dimensions do not exceed 900mm. Where these dimensions are more than 900mm such portions of ceilings have been included in the appropriate general items of ceilings

Unless otherwise described bulkheads shall be deemed to be horizontal along the length

**Steel components**

All steel components for ceilings, partitions, etc. are to be galvanised in accordance with SANS 121

**NAILED UP CEILINGS**

**12.5mm "Rhino" gypsum plasterboard (BPB) with galvanised H-type pressed steel jointing strips secured to 50 x 50mm branderling at 400mm centres**

1	Ceilings, including 50 x 50mm sawn softwood branderling at 400mm centres in one direction, including cross branderling at ends and to all perimeter edges	m2	1,978
---	---	----	-------

2	Extra over ceiling for 600 x 600mm trap door of 38 x 50mm wrought softwood rebated framing with one 38 x 50mm sawn softwood cross brander covered with ceiling board and fitted flush in opening	No	25
---	--	----	----

**"Rhino" gypsum plasterboard cornices**

3	90mm Coved cornices, fixed with "Rhinobed" and "Rhino Art" adhesive	m	1,131
---	---	---	-------

**"Aerolite" insulation**

4	40mm Insulation closely fitted and laid on top of branderling between roof timbers, etc	m2	1,978
---	---	----	-------

**Carried to Collection**

Builders Work  
 Bill No. 7  
 Ceilings, Partitions and Access Flooring

R



**SUSPENDED CEILINGS**

**Proprietary suspended ceilings**

Electrical light fittings, diffusers, panels, etc generally are "lay in" units of the same dimensions as the suspension grid described and allowance must be made accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted for light fittings and pricing is to take cognisance thereof)

**Note:**

All ceiling tiles are to be fitted in ceiling grid with storm clips

**600 x 1200mm Drop in panel ceiling with vinyl clad calcium silicate panels laid on OWA Construct S15 pre-painted exposed T15 tee suspension system including galvanised main tees, cross tees, hold down clips, wedges, reinforcement splines, etc all suspended with galvanised hangers at centres not exceeding 1200mm,**

5	Ceilings suspended not exceeding 1m below timber trusses	m2	661
6	Extra over suspended ceiling for forming a 1200 x 1200mm opening access panel including necessary cutting of cross tees framing all around panel and fitting into the suspended tees including tile stiffeners and additional hangers and fitted with storm clips	No	12

**Owa prepainted No 56/20 - SM25 Shadowline cornices plugged**

7	Galvanised pre-painted shadowline cornice	m	245
---	---	---	-----

**SMOKE BARRIER INSIDE ROOF SPACE**

8	15mm "Rhino" fire-stop gypsum plasterboard inside roof space with patent H-type pressed steel jointing strips, including 50 x 50mm sawn softwood battens at 450mm centres in one direction nailed to roof truss members, including cross brandering at ends and along walls, roof tiles, etc	m2	124
9	Sealing top of gypsum fire barrier against roof tiles with 'Pryrocote' fire retardent agent	m	85

Carried to Collection

Builders Work  
 Bill No. 7  
 Ceilings, Partitions and Access Flooring

R

Ceilings, Partitions and Access Flooring

**COLLECTION**

Total Brought Forward from Page No.

Page  
No

48

49

50

Amount  
R

**Carried Forward to Final Summary**

Builders Work  
 Bill No. 7  
 Ceilings, Partitions and Access Flooring

R

Item No		Quantity	Rate	Amount R
	<b><u>SECTION NO. 2</u></b>			
	<b><u>BILL NO. 8</u></b>			
	<b><u>FLOOR COVERINGS, PLASTIC LININGS, ETC</u></b>			
	Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Proprietary items or materials</u></b>			
	Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent			
	<b><u>FLOOR COVERINGS</u></b>			
	<b><u>2,5mm "Superflex" fully flexible seamless vinyl sheeting with welded joints fully bonded with adhesive installed complete all as per Architects drawing No. 2023 F480-RRA-B00-XX-SH-A-06.03.000 Rev A</u></b>			
1	On screeded floors	m2	550	
2	Turn-ups over coves and up against walls not exceeding 500mm girth	m	645	
	<b><u>POLISH, SEALERS, ETC</u></b>			
3	Clean, strip tiles and apply two coats of metallised floor dressing on vinyl flooring	m2	873	
	<b>Carried Forward to Final Summary</b>			
	Builders Work Bill No. 8 Floor Coverings, Wall Linings, etc			R

Item No		Quantity	Rate	Amount R
<b><u>SECTION NO. 2</u></b>				
<b><u>BILL NO. 9</u></b>				
<b><u>IRONMONGERY</u></b>				
Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities				
<b><u>SUPPLEMENTARY PREAMBLES</u></b>				
<b><u>Proprietary items or materials</u></b>				
Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent				
<b><u>Finishes to ironmongery</u></b>				
Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded				
<b><u>HINGES, BOLTS, ETC</u></b>				
<b><u>"Dormakaba" or similar approved</u></b>				
1	200 x 44mm Natural anodised sinkless hinge (code 2040-44)	Pairs	4	
2	100 x 44mm Natural anodised sinkless hinge (code 1040-44)	Pairs	4	
3	160mm Stainless steel flush bolt (code BFB-SS-027)	No	15	
<b>Carried to Collection</b>				R
Builders Work Bill No. 9 Ironmongery				

4	153mm Manual flush bolt with heel (code DFB-SC-180)	No	10
5	305mm Manual flush bolt with heel (code DFB-SC-181)	No	10
<b><u>LOCKS</u></b>			
<b><u>"Dormakaba" or similar approved</u></b>			
6	Narrow stile heavy duty cylinder sash lock. Case dimensions (mm) 174H x 50D. Forend dimensions (mm) 290H x 22W. Backset 35mm (code D07935 SS)	No	25
7	Bathroom sash lock. Case dimensions (mm) 102H x 78D. Forend dimensions (mm) 155H x 22W. Centres 7mm (code D035S SS)	No	16
8	Cylinder sash lock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. Centres 61mm (code D036S SS)	No	15
9	Cylinder deadlock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm (code D037D SS)	No	15
10	Bathroom deadlock. Case dimensions (mm) 38H x 76D. Forend dimensions (mm) 78H x 22.5W. Backset 55mm (code DMWC-SS-008)	No	12
11	Adjustable roller bolt (code DBC-SS-022)	No	16
12	66mm five pin euro-profile double cylinder master keyed (code DDC106601 MK)	No	15
13	Rebate conversion kit for euro-profile locks D036S, D037D (code D038R NP)	No	7
<b><u>ESCUTCHEONS</u></b>			
<b><u>"Dormakaba" or similar approved</u></b>			
14	Bathroom WC indicator (red and white) and turnknob (code DWC-005)	Sets	25
15	Disabled WC indicator (red and white) and turnknob for physically impaired (code DWC-006)	Sets	5
16	Round cylinder escutcheon (code DCE-002 S.S)	Sets	52
<b>Carried to Collection</b>			
Builders Work			
Bill No. 9			
Ironmongery			

R

17	Narrow stile cylinder escutcheon (code DCE-105 S.S)	Sets	12
<b><u>HANDLES</u></b>			
<b><u>"Dormakaba" or similar approved</u></b>			
18	Lever handle on 170 x 170mm plate with cylinder cut out (code TH120 BP Cyl S.S)	Sets	26
19	Lever handle on rose with cylinder escutcheons (code TH120 Cyl S.S)	Sets	32
20	149 x 19mm Straight tubular pull handle BTB (BTB fixing sets included) (code DPH301C BTB)	Pairs	15
21	325 x 25mm Straight tubular pull handle BTB (BTB fixing sets included) (code DPH301A BTB)	Pairs	15
22	382 x 32mm D-shaped offset tubular pull handle BTB (BTB fixing sets included) (code DPH215 BTB)	Pairs	15
23	120 x 40mm Rectangular flush pull handle (code DFP-SS-025)	Pairs	15
<b><u>PUSH PLATES AND KICKING PLATES</u></b>			
<b><u>"Dormakaba" or similar approved</u></b>			
24	150 x 300 x 1.2mm Thick grade 304 stainless steel plate. Stainless steel plate to have six no. countersunk holes for screw fixing (code DPP-304-BL 150 X 300)	No	104
<b><u>DOOR CLOSERS</u></b>			
<b><u>"Dorma" or similar approved</u></b>			
25	"TS91B HO - SL" Mechanical hold open cam action slide channel door closer. Max door width 950mm. Closing force EN 3. Hydraulic speed control. Pull-side door leaf fixing (Standard), Push-side transom fixing. Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001	No	16
<b>Carried to Collection</b>			
Builders Work			
Bill No. 9			
Ironmongery			

R

26	"TS90 - SL" EN 3/4 cam action slide channel NON HOLD OPEN door closer - hydraulic speed control. Pull side - leaf or transom fixing; Push side - leaf or transom fixing	No	15
27	"TS73V PA DC- PAB - SL" EN 2-4 Parallel arm DELAYED ACTION door closer. Push side fixing (parallel arm bracket included)	No	15
<b><u>BATHROOM FITTINGS</u></b>			
<b><u>"Franke" or similar approved</u></b>			
28	"Franke Stratos Strx" (Code - 359721) or similar approved 2 roll Vandal Proof Toilet roll holder, sliver 1mm M/S. Size: 360 x 130 x 130mm, plugged and screwed to wall. All in accordance with manufacturers installation specifications	No	22
29	"Franke Stratos Strx" (Code - 359705) Soap dispenser or similar approved 618, 1.2/1.5mm Thick Grade 304 x 100 x 134mm Deep with replaceable and refillable 1 x Litre container, cylinder lock with standard Franke key, plugged and screwed to the wall with stainless steel screws	No	62
30	"Franke Stratos Strx" (Code - 359740) Satin stainless steel sanitary towel disposal bins or similar approved with 1,2/ 1,5mm thick grade 304 18/10, size 304 x 205 x 134mm deep with capacity of 6 litres, plugged and screwed to the wall with stainless steel screws	No	63
<b><u>"Bathroom butler" or similar approved</u></b>			
31	"Bathroom butler" (Code - GRDG03B) or similar approved paraplegic rails dog leg grab rail with 3 supports or similar approved with brushed grade 304 stainless steel finish, overall size 750 x 750mm plugged and screwed to wall with stainless steel screws.	No	5
32	"Bathroom butler" (Code - GRFV01B) or similar with brushed grade 304 stainless steel finish, overall size 842mm long, plugged and screwed to wall with stainless steel screws	No	5
<b><u>"Milga Manufacturing" or similar approved</u></b>			
33	Type M.M.24 general purpose grab rail	No	5

Carried to Collection

Builders Work  
 Bill No. 9  
 Ironmongery

R

**LETTERS, NAMEPLATES, ETC**

**Signage**

34	Provide a budgetary amount of R 200,000.00 (Two hundred thousand Rand) for statutory fire signage and general direction signage	Item	1.00	200,000.00	200,000.00
----	---	------	------	------------	------------

**BUMPER RAILS, CORNER PROTECTORS, ETC**

**"Gradus" or similar approved**

35	GRADUS WGS200 (code: WGS200F) or similar approved Wall Guard. Overall size 200mm(h) x 25mm(d) x 4m (l) installed on 10 x aluminium retainer supports per 4m length @ ± 500mm centres and snap-on 2mm PVC-u cover. Installation and maintenance all according to manufacturers specifications	m	306		
36	GRADUS SUREPROTECT ENDURE K2 (code: CGH75135) rubrails	No	55		

**SUNDRIES**

**"Dormakaba" or similar approved**

37	"DPS-SS-032" Dust proof strike	No	65		
38	Polypropylene (grey) horizontal baby changing station, deep bed with adjustable safety belt, foldable design for space ptimism, open: 862 x 557 x 483mm closed: 862 x 120 x 557mm	No	5		
39	Circular galvanised wall mounted refuse bag holder, black rubber lid, bungee cord bag clamp, wall mounting point, diametre 445mm x 120mm height	No	73		
40	"DDS-SS-021" Floor mounted door stop	No	57		
41	"Franke bhm" (Code - 359945) Hat and coat hook with rubber buffer	No	25		
42	"BTS80-DAT" Double action floor spring for timber doors max 300kg, HOLD OPEN - Hydraulic speed control. Closing force EN 3. Including SS cover plate, dust cover, standard spindle, 7421 bottom strap and 8062 top centre	No	18		

**Carried to Collection**

R

Builders Work  
 Bill No. 9  
 Ironmongery



43	Male / female fixing screw pack (2 male / 2 female screws) - 222	No	18
44	"EM500A" Hold-open magnet with test push button	No	25
45	"MAG" Receiver plate	No	25
46	"PHA2/S" Two point locking double door system	No	5
47	"PHA3/S" Three point locking double door system	No	5
	<b><u>"Emseal" or similar approved</u></b>		
48	Nylon and aluminium smoke sealing strip let into edges of doors	m	99

Carried to Collection

Builders Work  
 Bill No. 9  
 Ironmongery

R

Ironmongery

**COLLECTION**

Total Brought Forward from Page No.

**Page  
No**  
53  
54  
55  
56  
57  
58

**Amount  
R**

**Carried Forward to Final Summary**

R

Builders Work  
 Bill No. 9  
 Ironmongery

Item No	Quantity	Rate	Amount R
<p><b><u>SECTION NO. 2</u></b></p>			
<p><b><u>BILL NO. 10</u></b></p>			
<p><b><u>METALWORK</u></b></p>			
<p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p>			
<p><b><u>Proprietary items or materials</u></b></p>			
<p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p>			
<p><b><u>Descriptions of bolts, anchors, etc.:</u></b></p>			
<p>Descriptions of bolts shall be deemed to include nuts and washers</p>			
<p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p>			
<p>Items described as 'holed for bolt(s)' shall be deemed to exclude the bolts unless otherwise described</p>			
<p>Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
<p><b><u>Hot dipped galvanising:</u></b></p>			
<p>The mass of hot dip galvanised steelwork has been calculated on the mass before galvanising and no allowance has been made for the additional mass of galvanising for which allowance must be made in pricing</p>			
<p><b>Carried to Collection</b></p>			
<p>Builders Work          Bill No. 10          Metalwork</p>			
			R

Unless otherwise stated, all steelwork described as galvanised shall be deemed to include for 'hot-dip' galvanising in accordance with the latest SANS standards

**GALVANIZED STEEL HANDRAILS, BALUSTRADES, ETC**

**Welded and bolted balustrading to concrete**

1	Horizontal balustrading 1105mm high comprising of 50mm diameter continuous pipe top rail over galvanised steel domed cover plate welded smoothly to stanchion and peg, 20mm thick galvanised steel horizontal rods at 100mm intervals, 50mm diameter vertical galvanised steel tube fixed to brickwork or concrete, 5mm thick galvanised base fixing plate with galvanised stud anchor bolts, washers, etc	m	85
---	--	---	----

**GALVANISED WELDED SCREENS, GATES, ETC**

Note: All opening gates are to be provided with one heavy duty padlock and two keys

**Galvanised mild steel clad gate**

2	G2 - 1200 x 2000mm hot dipped gms and painted square tubing installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	4
3	G3 - 1500 x 2100mm leaf gate, hot dipped gms and painted square tubing installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	3
4	G4 - 900 x 2125mm hot dipped gms and painted square tubing installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	4
5	G5 - 900 x 1800mm hot dipped gms and painted square tubing installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	2
6	G6 - 1850 x 2130mm Double swing gate, hot dipped gms and painted square tubing installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	8

**Carried to Collection**

Builders Work  
 Bill No. 10  
 Metalwork

R

7	G7 - 19500 x 2100mm Double swing gate, hot dipped gms and painted square tubing installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	1
<b><u>STAINLESS STEEL DOOR FRAMES</u></b>			
<b><u>1,6mm Rebated purpose made stainless steel frame suitable for half brick wall with three 100 x 75mm stainless steel ball bearing butt hinges as B and B Hardware 1535 fitted to frame for each door leaf</u></b>			
8	Frame for door size 813 x 2032mm high	No	40
<b><u>1,6mm Rebated purpose made stainless steel frame suitable for one brick wall with three 100 x 75mm stainless steel ball bearing butt hinges as B and B Hardware 1535 fitted to frame for each door leaf</u></b>			
9	Frame for door size 813 x 2032mm high	No	38
10	Frame for door size 900 x 2032mm high	No	9
11	Frame for double door size 1350 x 2100mm high in two unequal leaves	No	7
12	Frame for double door size 1400 x 2032mm high two unequal leaves	No	3

Carried to Collection

Builders Work  
 Bill No. 10  
 Metalwork

R

**ALUMINIUM GENERALLY**

All Architectural aluminium work ie. doors, windows, louvres, etc must carry the certification seal of the Association of Architectural Aluminium Manufacturers of South Africa and no items which are not certified will be accepted on site

Safety and security glazing materials shall comply with SABS 1263

**SUPPLEMENTARY PREAMBLES**

**Aluminium sections**

Flimsy sections which are easily bent or damaged in normal use will not be acceptable and the window units must be capable of withstanding public use for the life of the building. Window frames shall be unequal leg allowing for plastered finish on the inside

Aluminium alloy for powder coating is to be produced to British Standard Specification 1470, 1471 or 1474

Corners, joints and glazing beads should be accurately mitred or notched and there must be no sharp edges or unsightly gaps when viewed from a distance of 3 metres

Window frames are to be prepared for glazing from the outside and fixed with extruded snap-on type aluminium glazing beads which are to be powder coated to the same colour and specification as the window frames themselves

**Carried to Collection**

Builders Work  
 Bill No. 10  
 Metalwork

R

The frames to be formed perfectly flat, truly square and properly jointed at angles and intersections. Opening sections must fit perfectly on all faces and must open and close freely without binding at any point. Windows are to be fitted with felt inserts to provide a perfect seal when closed

All necessary fittings are to be attached to the frames and sashes in the strongest possible manner and they shall retain the sashes rigidly in the open or closed position

The manufacturers' own methods of construction may be used throughout provided that all joints are the strongest of their kind and are neatly formed to give the best possible appearance. All windows are to be left in perfect working order on completion of the project

**Powder coating**

The powder coating to be applied to all doors and window is to be colour Burgundy and is to be finished with a gloss finish

All powder coating is to be subject to a 15 year guarantee which is to be provided by the applicator in writing

The thickness of the powder coating is to be a minimum 60 microns

The work is to be undertaken in accordance with British Standard 6496 or SABS 1578. The powder coating shall also be applied by an approved applicator who is able to comply with the requirements of the required standards and who must be registered by the manufacturers of the guaranteed products

**Waterproofing**

Window frames generally are to be waterproof and this shall also apply when they are installed and closed

Because the windows are being built into facebrick walls, they are to be sealed using a clear silicone on the two reveal sides as well as the cill

Carried to Collection

Builders Work  
 Bill No. 10  
 Metalwork

R

**Protection**

All windows are to be protected against damage during handling, transport to site, building in and final completion. This will require that they are fully wrapped or taped to protect the powder coating throughout the construction process. Protective wrapping is to be fully removed on completion

It is recommended that the Contractor liaise with the Supplier regarding protection of windows and glass from the time that they have been installed until completion of the project

**Fixing**

The frames shall be fitted with the manufacturer's standard type of fixing lug which is to be no less than 19 x 3 x 150mm long which is to be screwed to the frame. These are to be placed one near to each corner and intermediately not more than 450mm apart to sides, top and bottom

**Sample**

Once the order has been placed for the windows, the Contractor will be required to provide a full size example of a window incorporating an opening section with burglar bars. This will be subject to scrutiny by the Architects who will check the window for compliance with the specifications. Various amendments could be called for but in any event, the approved sample is to be left on site as an example of the requirements for all windows to be provided as part of this project. Any windows brought to site which do not comply with the sample will be required to be removed and replaced

**Drawings**

**NOTE:**

Tenderers are referred to Architect's drawings included at the end of these Bills of Quantities for tender purposes

**Carried to Collection**

Builders Work  
 Bill No. 10  
 Metalwork

R



**ALUMINIUM WINDOWS AND DOORS**

**Natural anodised shopfronts complete with subframes, ironmongery, glass, sealing, etc and fixing to brickwork or concrete, refer to architects drawing number S264-401 REV 0**

13	Purpose made glass swing door, 1200 x 1050mm high (SED) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	2
14	Purpose made powder coated double aluminium swing door with glazing panels, 1400 x 2050mm high (SFD02) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	6
15	Purpose made powder coated double aluminium swing door with glazing panels, 1600 x 2050mm high (SFD04) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	3
16	Purpose made powder coated double aluminium swing door with glazing panels, 1600 x 2050mm high (SFD05) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	4
17	Purpose made powder coated double aluminium swing door with glazing panels, 1600 x 2050mm high (SFD11) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	2
18	Purpose made powder coated double aluminium swing leaf door with glazing panels, 1350 x 2050mm high (SFD06) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	1
19	Purpose made powder coated double aluminium swing leaf door with glazing panels, 1400 x 2050mm high (SFD07) installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.01.000 Rev A	No	7

**Carried to Collection**

Builders Work  
 Bill No. 10  
 Metalwork

R

Epoxy powdercoated charcoal shopfronts complete with subframes, ironmongery, glass, sealing, etc including powder coated "DuroDiy" burglar guard with minimum 80mm spacing fixed with security screws and fixing to brickwork or concrete, refer to architects drawing number RRA-V00-XX-SH-A-06.00.000

20	Window Type W_C1 size 533 x 949 high all installed complete all as Architects drawing installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	1
21	Window Type W_C7 size 1022 x 949mm high overall installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	6
22	Window Type W_D2 size 1022 x 1245mm high installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	33
23	Window Type W_D4 size 1511 x 1245mm high installed complete all as Architects drawing installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	22
24	Window Type W_D22 size 2000 x 1245mm high installed complete all as Architects drawing installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	34
25	Window Type W_E1 size 533 x 600 high all installed complete all as Architects drawing installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	23
26	Window Type W_E4 size 1511 x 600mm high overall installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	4
27	Window Type W_E7 size 1022 x 600mm high overall installed complete all as per Architects drawing No. RRA-V00-XX-SH-A-06.00.000	No	15

Carried to Collection

Builders Work  
 Bill No. 10  
 Metalwork

R

	<p><b><u>Epoxy powdercoated charcoal shopfronts complete with subframes, ironmongery, glass, sealing, etc and fixing to brickwork or concrete , refer to architects drawing number KZN.icp 520C, refer to architects drawing number KZN.icp 520C</u></b></p>			
28	<p>Aluminium shopfront Type LV-E15, overall size 1200 x 600mm high overall installed complete all as Architects drawing KZN.icp 520C</p>	No	6	
	<p><b><u>SHOWER CUBICLE DOORS</u></b></p>			
	<p><b><u>"Showerlux" magic epoxy powder coated aluminium shower cubicle hinged doors with and including obscure toughened safety glass according to manufacturer's specifications, fixed to tiled walls and sealing all around frame against tile faced walls with an all purpose silicone sealer</u></b></p>			
29	<p>Pirouette pivot action hinged door 730 x 1750mm high overall installed complete</p>	No	5	
	<p><b><u>GALVANIZED PRESSED STEEL TRANSFORMER ROOM DOORS AND FRAMES</u></b></p>			
	<p>Transformer room doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described for pressed steel door frames. Doors shall be of standard design with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with three reinforcing rails welded on. Single doors shall be fitted with a padlock cleat and two 100mm brass pintle hinges and double doors shall be fitted with a padlock cleat, two 150mm bolts and four 100mm brass pintle hinges. Each leaf shall be fitted with a louvred ventilation panel of standard design backed with 6mm mesh galvanized wire vermin proof screen</p>			
30	<p>Transformer room double door and frame size 1829 x 2438mm high overall with each leaf comprising 100mm steel mid rail forming two louvred ventilation panels complete with vermin proof screen behind each panel and fitted with steel locking eye including rebated frame suitable for 230mm wall</p>	No	1	
	<p style="text-align: center;"><b>Carried to Collection</b></p>			
<p>Builders Work          Bill No. 10          Metalwork</p>				<p style="text-align: center;">R</p>

**ROLLER SHUTTER DOORS**

Roller shutters shall be of approved manufacture comprising curtain, vertical channel guides and top mechanism. The curtain shall be constructed of 1mm thick machine-rolled galvanized interlocking slats with mild steel end locks spot welded to alternate strips. The bottom shall be provided with a galvanized rail riveted on and vertical edges shall slide in galvanized channel guides formed of steel not less than 2,5mm thick bolted to sides of openings

The mechanism shall be covered in a galvanized sheet iron box. The ungalvanized sections shall be treated with one coat of primer complying with SABS 679 before leaving the factory

**NOTE:**

Roller shutter doors to have a spring balanced jamb lifting mechanism with pull down handle with central locking handle and catches

**GALVANIZED STEEL ROLLER SHUTTER DOORS**

**Approved manual operated hot dipped galvanised steel 11,5 kg per m2 push-up slatted roller shutter doors to brickwork or concrete, refer to architects drawing number KZN.icp 512**

31 To suit opening size 1000 x 1200mm high (RSD) installed complete all as Architects drawing 2023\_F480-  
 RRA-B00-XX-SH-A-06.01.000 Rev A

No

2

**STEEL STRONGROOM DOORS, VENTILATORS, ETC**

**'Chubb'**

32 Strong room door size, 900 x 2100mm High (SRD) overall installed complete all as per Architects drawing 2023\_F480-  
 RRA-B00-XX-SH-A-06.01.000 Rev A

No

2

Carried to Collection

Builders Work  
 Bill No. 10  
 Metalwork

R

**SUNDRY GALVANIZED STEELWORK**

**Corner protectors**

33 75 x 75 x 1000mm High stainless steel corner protector installed above capping strip. Installation and maintenance all according to manufacturers specifications

m

144

**Carried to Collection**

Builders Work  
Bill No. 10  
Metalwork

R

Metalwork

**COLLECTION**

Total Brought Forward from Page No.

**Page  
No**

**Amount  
R**

- 60
- 61
- 62
- 63
- 64
- 65
- 66
- 67
- 68
- 69
- 70

**Carried Forward to Final Summary**

R

Builders Work  
 Bill No. 10  
 Metalwork

Item  
No

**SECTION NO. 2**

**BILL NO. 11**

**PLASTERING**

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

**SUPPLEMENTARY PREAMBLES**

**Proprietary items or materials**

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

**Method :**

The method to be used shall be either the monolithic method or the bonded method

**Preparation :**

For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc. is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic

Carried to Collection

Builders Work  
 Bill No. 11  
 Plastering

Quantity

Rate

Amount  
R

R

**Mix :**

Granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

**Panels :**

Granolithic shall be laid in panels not exceeding 14m<sup>2</sup> for monolithic finishes, not exceeding 9,5m<sup>2</sup> for bonded finishes and not exceeding 6m<sup>2</sup> for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints

**Laying :**

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be thoroughly compacted and lightly wood floated to the required levels

After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened. Any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated

**Curing, seasoning and protection :**

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

**Carried to Collection**

Builders Work  
 Bill No. 11  
 Plastering

R



<b><u>Colour :</u></b>				
Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour				
<b><u>SCREEDS</u></b>				
<b><u>NOTE:</u></b>				
The finishes to concrete floors and screeds are to comply to the highest SABS to flatness of accuracy 1 of table 4 of SABS 0109-2:1992 and permissible deviation in floors will be grade 1 as per table A1 SABS 070:1991. For vinyl floors the flatness degree of accuracy will not exceed SABS degree of accuracy 1 as per table 4 SABS 0109-2:1992 and the maximum tolerance will be 1mm				
<b><u>Cement screeds</u></b>				
1	40 mm Thick on floors and landings to receive floor tiles (elsewhere measured)	m2	163	
<b><u>Tal (Pty) Ltd Screedmaster</u></b>				
<b><u>Seal surface of screeded floor, apply floor primer, rapidmix and screedmaster to a final thickness of 5mm, all in strict accordance with the Supplementary Preambles</u></b>				
2	On screeded floor to receive vinyl sheeting (elsewhere measured)	m2	550	
<b><u>GRANOLITHIC</u></b>				
<b><u>Untinted granolithic on concrete</u></b>				
3	50mm Thick on floors and landings	m2	2,476	
<b><u>INTERNAL PLASTER</u></b>				
<b><u>Cement plaster on brickwork</u></b>				
4	On walls	m2	1,640	
5	On ceilings	m2	25	
6	On narrow widths	m2	161	
<b>Carried to Collection</b>				
Builders Work Bill No. 11 Plastering				R

<b><u>EXTERNAL PLASTER</u></b>			
<b><u>Cement plaster on brickwork</u></b>			
7	On walls	m2	353
8	On narrow widths	m2	9
<b><u>CORNER PROTECTORS, DIVIDING STRIPS, ETC</u></b>			
9	3 x 40 mm Flat section brass dividing strips between different floor finishes	m	95
<b><u>EPOXY FLOORING SYSTEM, ETC</u></b>			
<b><u>Prepare and apply 'Ivory Industrials (Pty) Ltd Code 318/20' or other approved epoxy mortar screed at a nominal thickness of 4mm including a matt-polyurethane floor finish</u></b>			
10	On granolithic to floors	m2	66
<b><u>Prepare and apply 'Ivory Industrials (Pty) Ltd Code 349' or other approved epoxy mortar screed at a nominal thickness of 4mm to</u></b>			
11	75mm High skirtings to walls, including forming 30mm radius cove at junction of floor and wall and working into termination grooves to floor and wall	m	75

Carried to Collection

Builders Work  
 Bill No. 11  
 Plastering

R

Plastering

**COLLECTION**

Total Brought Forward from Page No.

**Page  
No**  
72  
73  
74  
75

**Amount  
R**

**Carried Forward to Final Summary**

Builders Work  
 Bill No. 11  
 Plastering

R

Item No		Quantity	Rate	Amount R
	<b><u>SECTION NO. 2</u></b>			
	<b><u>BILL NO. 12</u></b>			
	<b><u>TILING</u></b>			
	Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Proprietary items or materials</u></b>			
	Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent			
	<b><u>WALL TILING</u></b>			
	<b><u>600 x 300 x 8.6mm Italtile porcelain wall tiles (Allow PC sum of R700 per m²) fixed with waterproof adhesive to screed (screed elsewhere measured) and flush pointed with antibacterial epoxy tile grout</u></b>			
1	On walls	m2	237	
2	On narrow widths	m2	24	
3	On walls in isolated panels, splashbacks, etc	m2	329	
	<b><u>FLOOR TILING</u></b>			
	<b><u>600 x 300 x 8.6mm Full bodied porcelain non-slip floor tiles (Allow a PC sum of R750 per m²) fixed with adhesive to screed (screed elsewhere) and flush pointed with antibacterial epoxy tile grout</u></b>			
4	On floors and landings	m2	330	
5	Skirting 100mm high	m	108	
	<b>Carried to Collection</b>			R
	Builders Work Bill No. 12 Tiling			

	<u>600 x 600 x 8.6mm Full bodied porcelain non-slip floor tiles (Allow a PC sum of R950 per m²) fixed with adhesive to screed (screed elsewhere) and flush pointed with antibacterial epoxy tile grout</u>		
6	On floors and landings	m2	1,202
7	Skirting 100mm high	m	691
	<u>45 x 45mm black ceramic mosaic tiles fixed with "Tal Goldstar 6" or equally approved tile adhesive</u>		
8	On floors and landings	m2	4

Carried to Collection

Builders Work  
 Bill No. 12  
 Tiling

R

Tiling

**COLLECTION**

Total Brought Forward from Page No.

Page  
No

77

78

Amount  
R

**Carried Forward to Final Summary**

Builders Work  
 Bill No. 12  
 Tiling

R

Item  
 No

Quantity

Rate

Amount  
 R

**SECTION NO. 2**

**BILL NO. 13**

**PLUMBING AND DRAINAGE**

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

**SUPPLEMENTARY PREAMBLES**

**Proprietary items or materials**

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

**Wire gratings:**

Descriptions of gutter outlets etc. shall be deemed to include wire balloon gratings

**Stormwater channels:**

Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc., and disposal of surplus material on site :

**French drains:**

Descriptions of French drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, geofabric filter blanket over stone, 300mm earth filling over and disposal of surplus material on site :

**Carried to Collection**

R

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

**Septic tanks:**

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc. all in accordance with the manufacturer's instructions and disposal of surplus material on site

**Stainless steel basins, sinks, wash troughs, urinals, etc:**

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0) Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be Type 304 (18/8) Stainless steel for laboratory sinks, photographic equipment, etc. shall be Type 316 (18/8) Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

**Sealing of edges:**

Outer edges of sinks, basins, baths, urinals, etc. are to be sealed against adjacent surfaces with approved silicone

**uPVC pipes and fittings:**

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings. Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

**uPVC pressure pipes and fittings:**

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

**High density polyethylene (HDPe) pipes and fittings:**

Pipes shall be type IV and of the class specified with Plasson or Alprene compression fittings

Carried to Collection

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R



**Polycop polypropylene pipes:**

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with Fast-fuse heat welded thermoplastic or where so described Polylock compression fittings Pipes shall be firmly fixed to walls, etc. with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

**Copper pipes:**

Pipes shall be hard drawn and half-hard Maksimal pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-siphon pipes, capillary solder fittings and compression fittings shall be 'Cobra Watertech' or equal approved type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc. to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

**Reducing fittings:**

Where fittings have reducing ends or branches they are described as 'reducing' and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

**Fixing of pipes:**

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc., casting in, building in or suspending not exceeding 1m below suspension level

**Carried to Collection**

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R

**Paper wrapping to pipes:**

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

**Disinfection of water pipework:**

Water pipework is to be disinfected at completion in accordance with SANS

**Densyl petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd:**

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with 25% overlaps. Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, Layflat sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

**Laying, backfilling, bedding, etc. of pipes:**

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with SANS

**General:**

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete and shall include adaptors for joints to PVC pipes, etc.). Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc. shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material off site

**Carried to Collection**

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc., steel pipes, copper pipes, etc

Descriptions of WC pans, slop hoppers, etc. shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

**As-built drawings:**

The contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)

**RAINWATER DISPOSAL**

**0.8mm Seamless aluminium**

1	150 x 75mm Ogee eaves gutters	m	650
2	Extra over eaves gutter for stopped end	No	68
3	Extra over eaves gutter for angle	No	68
4	Extra over eaves gutter for outlet for 150mm pipe	No	68
5	Extra over rainwater pipe for bend	No	136
6	Extra over rainwater pipe for shoe	No	68
7	150 x 75mm Rainwater pipes	m	190

**Carried to Collection**

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R

**SANITARY FITTINGS**

**NOTE:**

All fittings butting up against wall or floor finishes or fitting into preformed openings in timber tops are to be sealed with an approved all purpose silicone sealant

Prices for sinks described as drop in are to include for preparing the worktop to receive the fitting and securely fixing sinks to worktops using clips provided. The contractor is to provide worktop manufacturers with details of cut outs to ensure that the cut openings are sufficiently accurate to provide proper engagement for these clips

**"Franke"**

8	Franke- citimetal model "BR6" bedpan and bottle rack - comprising of 18/10 grade 304 stainless steel, fixed to wall surface with stainless steel bar braces with removable drip tray including 19mm drain outlet - size 915mm long (6x bedpan and bottle size)	No	1
9	Franke Model CH' slop hopper suite with grid size 540 x 545mm with 100mm integral splashback to back and both sides, bowl with integral flushing rim, 110mm diameter waste outlet, hinged bucket grid and set on and including a pair of 40mm square stainless steel gallows brackets bolted to tiled walls	No	1
10	Franke PPGL' plaster of paris sink size 1500 x 550 x 1050mm high with a 150mm high splashback complete with pressed preparation bowl with a 40mm waste outlet discharging into a stainless steel plaster bowl complete with stainless steel lid and removable drainer and fixed to wall/floor with 40mm square stainless steel gallows brackets and front legs with adjustable stainless steel foot pieces	No	1
11	Franke Pressed Shower Tray BS 401' 900 x 900 x 88mm deep, levelled and fully embedded in and including cement and sand 1:3 screed 100mm thick overall	No	5
12	Franke Quinline "706103" double bowl drop in sink, size overall 1200x500mm set in worktop (elsewhere measured)	No	3

**Carried to Collection**

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R

13	Franke series "S1" (Code - 2620015) grade 304(18/10) stainless steel single centre bowl catering sink,size 1500 x 600mm with a 150mm high splashback to the rear and 50 x 10mm turn down with beaded edge on the remaining sides . The underside sprayed with vermin proof bitumastic sound deadening and supported on a 30 x 30 x 3mm framework and galvanised mild steel backing sheet. Fitted onto 4no. 38mm diametre stainless steel detachable legs with adjustable flanged foot pieces. bowl size 500 x 500 x 230mm deep	No	1	
14	Franke (Code - SKU 7077) grade 304(18/10) stainless steel single drop in bowl sink,size 1200 x 535mm with a 150mm high splashback to the rear and 50 x 10mm turn down with beaded edge on the remaining sides	No	7	
15	Franke series "S2"(Code - 2620015) grade 304(18/10) stainless steel double centre bowl catering sink, with a 150mm high splashback to the rear and 50 x 10mm turndown with beaded edge on the remaining sides . The underside sprayed with vermin proof bitumastic sound deadening and supported on a 30 x 30 x 3mm framework and galvanised mild steel backing sheet. Fitted onto 4no. 38mm diameter stainless steel detachable legs with adjustable flanged foot pieces. bowl size 500 x 500 x 230mm deep	No	1	
16	Franke series (Code - DN602) Grade 304 (18/10) Stainless steel double end hand bowl sink,size 1500 x 600mm with a 150mm high splashback to the rear and 2no sides with 50x10mm turn down with beaded edge on the front . The underside sprayed with vermin proof bitumastic sound deadening and supported on a 30 x 30 x 3mm framework and galvanised mild steel backing sheet. Fitted onto 4no. 38mm diametre stainless steel detachable legs with adjustable flanged foot pieces. bowl size 760 x 460 x 380mm deep	No	1	
17	Franke wash hand basin (Code - 325000) manufactured from 1.2mm grade (304918/10) Stainless Steel with a one piece pressed bowl and a 50mm splashback and a radius apron, fixed to wall	No	12	
<b>Carried to Collection</b>				
Builders Work				
Bill No. 13				
Plumbing and Drainage				
				R

	<b>'Geberit'</b>			
18	"Geberit selnova" comfort wall-hung WC (Code - 500.262.01.1), washdown, large projection, ramfree including 32mm "cobra" toilet flush valve back entry and "Walcro" 25mm diameter bsp concealed vandal resistant brass toilet flush valve with VR push-button and concealed flush pipes installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.02.000 Rev A	No	5	
	<b>'Beta'</b>			
19	"Beta Consul" floor standing WC (Code - XTCOF08A), washdown pan installed complete all as per Architects drawing No. 2023_F480-RRA-B00-XX-SH-A-06.02.000 Rev A	No	17	
	<b>'Vaal'</b>			
20	590 x 490mm (WHB.01) Semi-rectangular 'solar 510' medical basin (code 703700) basin with no tapholes (in RHS configuration), integrated overflow and chainstay hole bolted to wall with two 10mm bolts (code 8448Z0). Including Cobra Watertech 32mm chrome plated slotted basin waste (code 303) with plug and 62mm diameter flange, 77mm long shank, plug, chain and stay, and 2 x Cobra Watertech 15mm ball type angle valves (Code: 832-10). Cobra Watertech 32mm chrome plated bottle trap (Code: 340) with 75mm deep re-seal, adjustable telescopic pipe and 32mm outlet. All in accordance with manufacturers installation specifications	No	20	
21	"Vaal" sanitary ware 565 x 275 x 310mm Sweatpear white vitreous china wall mounted back inlet urinal (Code - 705127) including 38mm chromium plated domical grating (8787z0) and chromium plated back inlet spreader (code: 7054z2), flush valve, flush pipe and fittings (by others), fixed on and including two hanger brackets (code: 8127z0)	No	4	
	<b>Carried to Collection</b>			
	Builders Work			
	Bill No. 13			
	Plumbing and Drainage			
				R

22	<p>Plexicor cross linked cast acrylic Perspex Carmen 1700 rectangular bath colour White, overall size 1700 x 700 x 390mm deep with 52mm end waste outlet, supported on 38 x 38mm timber battens fixed to adjacent walls and bed in 1:5 cement mortar on a brick bed, three bricks wide for full length of bath with the void between the bath and enclosing walls filled with 1:10 uncompacted cement mix and point all round with mildew resistant silicone, all in accordance with the manufacturer's recommendations. Cobra Watertech Noka 15mm chrome plated wall mounted underwall mixer (Code: NA-956), manufactured in accordance with SANS 226:2004 Type 2 (BS 5412).and chainstay hole bolted to wall with two 10mm bolts (Code: 8448Z0) and sealed with silicone sealant where basin meets wall. Including Cobra hand shower set: 067S, 001W-Alpine, 006S-20, 008/5C. Cobra Watertech 40mm chrome plated basin/bath waste (Code: 316) with 70mm diameter flange, 45mm long shank, plug, chain and stay. Cobra Watertech 40mm rough brass bath P trap (Code: 370) with shallow seal and cleaning eyes.</p>	No	6		
	<b><u>'Betta'</u></b>				
23	<p>575 x 490mm (WHB.05) Semi-rectangular basin (code WC0408A BASIN-CONSUL-W/HUNG-WHI) with one tap hole (in RHS configuration), integrated overflow and chain stay hole bolted to wall with two 10mm bolts (code 8448Z0).Including pedestal(Code PHX108A PED-UNIVERSAL-WHI) with plug and 62mm diameter flange, 77mm long shank, plug, chain and stay with 75mm deep re-seal, adjustable telescopic pipe and 32mm outlet. All in accordance with manufacturers installation specifications</p>	No	23		
24	<p>575 x 490mm (WHB.06) Semi-rectangular basin (code WC0408A BASIN-CONSUL-W/HUNG-WHI) with one tap hole (in RHS configuration), integrated overflow and chain stay hole bolted to wall with two 10mm bolts (code 8448Z0). with plug and 62mm diameter flange, 77mm long shank, plug, chain and stay with 75mm deep re-seal, adjustable telescopic pipe and 32mm outlet. All in accordance with manufacturers installation specifications</p>	No	5		
	<b><u>"Avenge" or similar approved</u></b>				
25	Concrete wash trough (Code - 2400611Q)	No	1		
	<b>Carried to Collection</b>				
	<p>Builders Work          Bill No. 13          Plumbing and Drainage</p>				R

**WASTE UNIONS. ETC.**

**"Cobra Watertech"**

26	Cobra 301' chromium plated basin waste, slotted flanged backnut and washer, 62mm flange and 80mm long shank	No	11
27	Cobra 309-32' chromium plated anti-theft plug	No	6
28	Cobra 316' chromium plated unslotted sink / bath waste complete with backnut, plug with stirrup, chain and stay, 70mm flange and 45mm long shank	No	22

**"Tivoli"**

29	Anti-vandal basin waste to medical basins (Code - TVAC1033/CH)	No	20
30	Pop up basin waste (Code - TVAC1034/CH)	No	28

**TRAPS, ETC**

Note: All traps are to include for connectors and fitting to waste outlet at one end and to waste pipe at other end

**uPVC**

31	110mm uPVC trap	No	22
32	110mm uPVC to stainless steel adaptor	No	22

**"Flexi Traps"**

33	40 x 50mm Butyl rubber 'P' or 'S' trap jointed to waste outlet fitting and UPVC pipe including clamps	No	11
----	---	----	----

**"Cobra Watertech"**

34	38mm Brass deep seal shower trap as 'Cobra 373' with chromium plated grating as 'Cobra 323' connected to shower tray and set in position in concrete floor and joint to 50mm UPVC pipe including adaptor	No	13
35	32 x 50mm Chromium plated bottle trap as 'Cobra 340/50' and joint to waste outlet fitting and to 50mm UPVC pipe including adaptor	No	38

**Carried to Collection**

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R



**TAPS, VALVES, ETC**

Note:

All taps and mixers are to be fitted with water saving nuts as supplied by the manufactures of the taps

**"Cobra Watertech"**

36	15mm "Cobra Ball-O-Flo (Ref. 1090-15)" fullway isolating ball valves with plastic coated plated steel lever handle (connectors elsewhere measured)	No	21
37	20mm "Cobra Ball-O-Flo (Ref. 1090-20)" fullway isolating ball valves with plastic coated plated steel lever handle (connectors elsewhere measured)	No	16
38	15mm Chromium plated single lever basin mixer (Code - NM-851))	No	5
39	"Cobra"15mm Chromium plated elbow action medical mixer (Code - 515/055-21) mounted to brick walls. 'Cobra 206' and joint to brass connector (elsewhere measured)	No	25
40	Shower set comprising 2no. Cobra 138 under tile stop taps with KP2.6 Vandalproof shower including "Cobra" focus single lever shower mixer (Code - cob-fc-956) chrome 2 x 1/2 inch bsp female iron inlet and 2 x female iron outlet connection ends	No	11
41	Cobra 108 brass hose union bib tap	No	12
42	22mm brass pressure reducing valve	No	21

**"Tivoli"**

43	"Tivoli Teramo DZR"15mm Chromium plated basin mixer (Code - TVDRTA5840/CH) mounted to basin	No	23
----	---	----	----

**SANITARY PLUMBING**

**uPVC pipes**

44	50mm Pipes	m	630
45	110mm Pipes	m	225

Carried to Collection

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R

<u>Extra over uPVC pipes for fittings</u>			
46	50mm BSP adaptor	No	80
47	110mm Eccentric Reducer	No	23
48	50mm Bend	No	240
49	110mm Bend	No	46
50	50mm Access bend	No	160
51	110mm Access bend	No	23
52	50mm Junction	No	120
53	110mm Junction	No	23
54	50mm Access junction	No	80
55	110mm Access junction	No	23
56	110mm Reducing access junction	No	23
57	110mm Double junction	No	23
58	110mm Double access junction	No	23
59	50mm Vent valve	No	120
60	110mm Vent valve	No	23
61	110mm Straight pan connector	No	22
62	110mm Bent pan connector	No	5
<u>Testing</u>			
63	Testing waste pipe system	Item	1.00
<u>WATER SUPPLIES</u>			
<u>Class 460/2 copper pipes</u>			
64	15mm Pipes	m	624
65	22mm Pipes	m	246
<b>Carried to Collection</b>			
Builders Work Bill No. 13 Plumbing and Drainage		R	

66	28mm Pipes	m	207
67	35mm Pipes	m	204
<b><u>Extra over Class 2 copper pipes for capillary fittings</u></b>			
68	15mm Fittings	No	704
69	22mm Fittings	No	425
70	28mm Fittings	No	486
71	35mm Elbow	No	216
72	35mm Straight reducing coupler	No	243
73	35mm Tee	No	261
74	35mm Reducing tee	No	258
<b><u>Extra over Class 2 copper pipes for brass compression fittings</u></b>			
75	15mm Fittings	No	44
76	22mm Fittings	No	49
77	28mm Fittings	No	61
78	35mm Copper to iron straight connector	No	61

Carried to Collection

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

R

Plumbing and Drainage

**COLLECTION**

Total Brought Forward from Page No.

Page  
No

Amount  
R

- 80
- 81
- 82
- 83
- 84
- 85
- 86
- 87
- 88
- 89
- 90
- 91
- 92

Carried Forward to Final Summary

R

Builders Work  
 Bill No. 13  
 Plumbing and Drainage

Item No		Quantity	Rate	Amount R
	<p><b><u>SECTION NO. 2</u></b></p> <p><b><u>BILL NO. 14</u></b></p> <p><b><u>GLAZING</u></b></p> <p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
	<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><b><u>Float glass</u></b></p> <p>The term 'float glass' is used for monolithic annealed glass</p> <p><b><u>Laminated glass</u></b></p> <p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p> <p><b><u>TOPS, SHELVES, DOORS, MIRRORS, ETC</u></b></p> <p><b><u>4mm Thick silvered float glass copper backed mirrors with bevelled and polished edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete</u></b></p>			
1	Mirror size 400 x 900mm high with four screws	No	63	
2	Mirror size 600 x 800mm high with four screws	No	2	
	<b>Carried Forward to Final Summary</b>			R
	Builders Work Bill No. 14 Glazing			

Item No		Quantity	Rate	Amount R
	<p><b><u>SECTION NO. 2</u></b></p> <p><b><u>BILL NO. 15</u></b></p> <p><b><u>PAINTWORK</u></b></p> <p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
	<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Proprietary items or materials</u></b></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><b><u>PAINTWORK ETC TO PREVIOUSLY PAINTED WORK</u></b></p> <p><b><u>Previously painted plastered surfaces</u></b></p> <p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth</p> <p><b><u>Previously painted metal surfaces</u></b></p> <p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p> <p><b><u>Previously painted wood surfaces</u></b></p> <p>Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth</p>			
	<b>Carried to Collection</b>			
	<p>Builders Work          Bill No. 15          Paintwork</p>			R

**COLOURS**

**Colours, etc.**

Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091

**PREPARATORY WORK TO EXISTING WORK**

**Previously painted plastered surfaces**

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

**PAINTWORK, ETC TO NEW WORK**

**ON FLOATED PLASTER**

**Prepare and apply one alkali resistant primer to SABS 1414 and two finishing coats ' Double Velvet' acrylic emulsion paint to SABS 1586 Grade 1 on**

1	On internal walls	m2	1,640
2	On external walls	m2	353
3	On ceilings and cornices	m2	25

**ON FIBRE-CEMENT**

**Prepare and apply one alkali resistant primer to SABS 1414 and two finishing coats ' Double Velvet' acrylic emulsion paint to SABS 1586 Grade 1**

4	On ceilings and cornices	m2	1,978
5	On fascias and barge boards	m2	81
6	On window sills not exceeding 300mm girth	m	192

Carried to Collection

Builders Work  
 Bill No. 15  
 Paintwork

R

<u>ON METAL</u>					
<u>Prepare, prime with one coat self etching primer to SABS 912 and apply one undercoat to SABS 618 type 11 and two finishing coats gloss enamel paint to SABS 630 Type 1</u>					
7	On door frames	m2	44		
8	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	28		
<u>Spot priming defects in pre primed surfaces with zinc chromate primer and applying one undercoat and two coats alkyd enamel paint in colours which have a value of 7 or less on the Munsell system in accordance with SABS 1091</u>					
9	On columns and beams	m2	124		
<u>ON WOOD</u>					
<u>Prepare and apply three coats polyurethane varnish</u>					
10	Varnish to extrnal doors	m2	76		
<u>Prepare and prime with one coat wood primer and paint with two coats plascon velvaglo</u>					
11	On doors	m2	329		
<u>Prepare and prime with one coat fire resistant paint (Allow a PC sum of R800 per m<sup>2</sup>) to roof truss</u>					
12	On truss	m2	3,315		
Carried to Collection					
Builders Work					
Bill No. 15					
Paintwork					
				R	



Paintwork

**COLLECTION**

Total Brought Forward from Page No.

Page  
 No  
 95  
 96  
 97

Amount  
 R

**Carried Forward to Final Summary**

R

Builders Work  
 Bill No. 15  
 Paintwork

Bill No	<u>SECTION SUMMARY - Builders Work</u>	Page No	Amount R
1	Earthworks	23	
2	Concrete, Formwork and Reinforcing	28	
3	Masonry	33	
4	Waterproofing	36	
5	Roof Coverings	41	
6	Carpentry and Joinery	47	
7	Ceilings, Partitions and Access Flooring	51	
8	Floor Coverings, Wall Linings, etc	52	
9	Ironmongery	59	
10	Metalwork	71	
11	Plastering	76	
12	Tiling	79	
13	Plumbing and Drainage	93	
14	Glazing	94	
15	Paintwork	98	
	<b>Carried to Final Summary</b>		
	Builders Work		R

Item No	Quantity	Rate	Amount R
<p><b><u>SECTION NO. 3</u></b></p>			
<p><b><u>BILL NO. 1</u></b></p>			
<p><b><u>EXTERNAL WORKS</u></b></p>			
<p>Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities</p>			
<p>Unless otherwise described, the preambles and full descriptions of the items in the preceeding Bills are to apply equally to this Bill</p>			
<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p>			
<p><b><u>Proprietary items or materials</u></b></p>			
<p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p>			
<p><b><u>Concrete Pipes</u></b></p>			
<p>Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings</p>			
<p><b><u>Vitrified clay pipes, etc</u></b></p>			
<p>Pipes shall rest on solid ground and where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid</p>			
<p><b>Carried to Collection</b></p>			
<p>External Works          Bill No. 1          External Works</p>			
			R

**uPVC Pipes and Fittings**

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed

**uPVC Pressure Pipes and Fittings**

Pipes for water supply shall be of the class stated

Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

**Copper Pipes**

Pipes shall be hard drawn and half-hard pipes of the class stated

Class 0 (thin walled hard drawn) pipes shall not be bent

Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers

Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type

Capillary solder fittings shall comply with ISO 2016

Only compression fittings shall be used in walls or in ground

**Lead Pipes and Traps**

All soldered joints shall be wiped and brass unions shall be used for jointing lead to steel

**Carried to Collection**

External Works  
 Bill No. 1  
 External Works

R

**Reducing Fittings**

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained

**Wire Gratings**

Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings

**Septic Tanks**

Descriptions of septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions

**Exposed Concrete Surfaces**

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gully tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster

**Excavations**

No claim for rock excavation will be entertained unless the contractor has timeously notified the Quantity Surveyor thereof prior to backfilling

"Soft rock" and "Hard rock" shall be as defined in The Standard Preambles to All Trades (WB20)

**Carried to Collection**

External Works  
 Bill No. 1  
 External Works

R

**Laying, Backfilling, Bedding, Etc of Pipes**

Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturer's instructions

Where no manufacturer's instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following:  
 SABS 1200

- L : Medium-pressure pipelines
- LD : Sewers
- LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB: Bedding (Pipes)

Unless otherwise described bedding of rigid pipes shall be class B bedding

**Steel Sectional Water Tanks**

Tanks shall comply with SABS CKS 114

**REMOVAL OF TREES ETC**

**Taking out and removing, grubbing up roots and filling in holes**

1	Tree stump exceeding 200mm and not exceeding 500mm girth	No	6
2	Tree stump exceeding 500mm and not exceeding 1000mm girth	No	3

**BULK EXCAVATION, FILLING, ETC**

**Open face excavation in earth over sloping site**

3	Open face excavation	m3	5,495
---	----------------------	----	-------

Carried to Collection

External Works  
 Bill No. 1  
 External Works

R

<u>Extra over bulk excavation in earth for excavation in</u>			
4	Soft rock	m3	898
5	Hard rock	m3	126
<u>Risk of collapse of excavations</u>			
6	Sides of bulk excavations not exceeding 1,5m deep	m2	1,350
<u>Keeping excavations free of water</u>			
7	Keeping excavations free of all water other than subterranean water	Item	1.00
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 95% Mod AASHTO density</u>			
8	Over site to form platforms	m3	5,072
<u>Earth filling supplied by the contractor compacted to 95% Mod AASHTO density</u>			
9	Over site to form platforms	m3	2,122
<u>Earth filling supplied by the contractor compacted to 98% Mod AASHTO density</u>			
10	G2 material under floors	m3	2,192
<u>Compaction of surfaces</u>			
11	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	2,875
<u>Prescribed density tests on filling</u>			
12	"Natural California Bearing Ratio" test	No	25
<u>STORMWATER DRAINAGE</u>			
<u>Heavy duty Class 6 uPVC pipes and fittings</u>			
13	160mm Pipes laid in and including trenches not exceeding 1m deep	m	325
<b>Carried to Collection</b>			
External Works			
Bill No. 1			
External Works			

R

14	200mm Pipes laid in and including trenches not exceeding 1m deep	m	245	
15	250mm Pipes laid in and including trenches not exceeding 1m deep	m	205	
<b><u>Extra over heavy duty uPVC pipes for fittings</u></b>				
16	160mm Bend	No	34	
17	200mm Bend	No	30	
18	160mm Junction	No	20	
19	200mm Reducing junction	No	16	
<b><u>Class 100D reinforced concrete pipes with spigot and socket joints</u></b>				
20	300mm pipes laid in and including trenches not exceeding 1m deep	m	62	
21	300mm pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	22	
22	375mm pipes laid in and including trenches not exceeding 1m deep	m	36	
23	375mm pipes laid in and including trenches not exceeding 1m and not exceeding 2m deep	m	18	
<b><u>Sumps, catchpits, inspection chambers, etc</u></b>				
24	Excavate for and construct half brick wall rainwater sump 300 x 300mm and not exceeding 750mm deep internally, including 100mm thick concrete base 300 x 300mm and fitted with cast iron dished grating and frame (elsewhere measured)	No	3	
25	Excavate for and construct one brickwall rainwater sump 600 x 600mm and not exceeding 1000mm deep internally, including 150mm thick concrete base, fitted with concrete cover slab and fitted with grate and frame (elsewhere measured)	No	20	
<b>Carried to Collection</b>				
External Works				
Bill No. 1				
External Works				
				R



26	Excavate for and construct one brickwall rainwater sump 800 x 800mm and not exceeding 1000mm deep internally, including 150mm thick concrete base, fitted with concrete cover slab and fitted with grate and frame (elsewhere measured)	No	2	
	<b><u>Gratings, covers, etc</u></b>			
27	300 x 300mm x 71kg Cast iron dished grating and frame	No	3	
28	600 x 600mm x 50kg Light duty cast iron dished grating and frame	No	20	
29	520 x 790mm x 127,4kg Heavy duty cast iron dished grating and frame	No	2	
	<b><u>Sundries</u></b>			
30	Excavate for construct one brickwall headwall 5,10m overall with 2 No. wing walls each not exceeding 1,7m in length and total height of headwall not exceeding 3m	No	5	
31	Provide water break in front of headwall comprising 2 No, 6m x 2m x 230mm high GMS Gabion wire baskets filled with hand selected stone and set on geofabric	No	5	
32	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock	m3	21	
33	Extra over excavation in earth for pipes trenches, chambers, etc for excavation in hard rock	m3	6	
34	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor	m3	9	
35	Extra over backfilling to pipe trenches, chambers, etc for 100mm thick imported sand bedding material and backfilling same to 300mm above crown of pipe	m3	18	
	<b><u>SOIL DRAINAGE</u></b>			
	<b><u>Class 34 Heavy duty uPVC pipes</u></b>			
36	110mm Pipes vertically or ramped in ground	m	366	
37	160mm Pipes vertically or ramped in ground	m	191	
	<b>Carried to Collection</b>			
	External Works			
	Bill No. 1			
	External Works			

38	200mm Pipes vertically or ramped in ground	m	83
39	110mm Pipes laid in and including trenches not exceeding 1m deep	m	34
40	160mm Pipes laid in and including trenches not exceeding 1m deep	m	24
41	200mm Pipes laid in and including trenches not exceeding 1m deep	m	24
<b><u>Extra over Class 34 uPVC pipes for uPVC fittings</u></b>			
42	110mm Bend	No	36
43	160mm Bend	No	28
44	200mm Bend	No	24
45	110mm Access bend	No	30
46	110mm Junction	No	30
47	160mm Junction	No	28
48	200mm Junction	No	20
49	110mm Access junction	No	32
50	160mm Access junction	No	24
51	200mm Access junction	No	20
52	160mm Access reducing junction	No	24
53	200mm Access reducing junction	No	20
<b><u>Gulleys</u></b>			
54	110mm Diameter gully trap jointed to drain, complete with hopper head and grid and the whole set on and encased in unreinforced Class A (1:4:8) concrete, 600 x 400mm extreme on plan and not exceeding 75mm deep set 50mm high above ground as surround to gully and fitted with and including a precast gully surround, including necessary excavation and formwork	No	28
<b>Carried to Collection</b>			
External Works			
Bill No. 1			
External Works			

R

<u>Precast concrete circular inspection chambers</u>					
55	Excavate for and construct 1050mm internal diameter circular precast manhole not exceeding 1000mm deep with light duty circular precast concrete rebated cover and frame, 150 mm thick x 1020 mm thick unreinforced concrete grade 25/19mm stone base, benching, channels, fitting precast wall units around drain pipes and making good with cement mortar, including all risk of collapse and backfilling etc on completion	No	14		
56	Excavate for and construct 1050mm internal diameter circular precast manhole exceeding 1000mm but not exceeding 2000mm deep with light duty circular precast concrete rebated cover and frame, 150 mm thick x 1020 mm thick unreinforced concrete grade 25/19mm stone base, benching, channels, fitting precast wall units around drain pipes and making good with cement mortar, including all risk of collapse and backfilling etc on completion	No	14		
<u>Covers, etc</u>					
57	600 x 450mm x 72kg Type 8a double seal manhole cover and frame	No	14		
<u>Septic tanks</u>					
58	Sand oil and grease trap installation including all excavations, backfilling, concrete, brickwork and fittings etc constructed complete as detailed on drawing attached	No	1		
<u>Sundries</u>					
59	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock	m3	42		
60	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock	m3	6		
61	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor	m3	20		
62	Extra over backfilling to pipe trenches, chambers, etc for 100mm thick imported sand bedding material and backfilling same to 300mm above crown of pipe.	m3	27		
<b>Carried to Collection</b>					
External Works					
Bill No. 1					
External Works					

R

63	Unreinforced concrete encasing to 110mm horizontal pipe	m	252
64	Unreinforced concrete encasing to 160mm horizontal pipe	m	82
65	110mm Cast iron rodding eye complete with 300 x 300 x 200mm thick concrete surround	No	28
66	160mm Cast iron rodding eye complete with 300 x 300 x 200mm thick concrete surround	No	16
67	Testing soil drainage pipe system	Item	1.00
<b><u>WATER SUPPLIES</u></b>			
<b><u>Class 9 uPVC pressure pipes</u></b>			
68	160mm Pipes laid in and including trenches not exceeding 1m deep	m	340
<b><u>Class 10 HDPE pressure pipes</u></b>			
69	40mm Pipes laid in and including trenches not exceeding 1,0m deep	m	100
70	63mm Pipes laid in and including trenches not exceeding 1,0m deep	m	49
71	75mm Pipes laid in and including trenches not exceeding 1,0m deep	m	49
72	100mm Pipes laid in and including trenches not exceeding 1,0m deep	m	49
<b><u>Extra over Class 9 uPVC pipes for cast iron fittings</u></b>			
73	160mm Flanged adaptor complete with gasket set	No	16
74	160mm Bend	No	20
75	160mm Tee	No	16
76	160 x 110mm Reducer	No	20
77	160mm Saddle	No	20

Carried to Collection

External Works  
 Bill No. 1  
 External Works

R

<u>Extra over HDPE pressure pipes for plasson fittings</u>			
78	40mm Elbow	No	12
79	40mm Plasson to iron elbow	No	8
80	40mm Tee	No	8
81	63mm Elbow	No	10
82	63mm Plasson to iron elbow	No	10
83	63mm Tee	No	10
84	63mm Reducing tee	No	8
85	75mm Elbow	No	6
86	75mm Plasson to iron elbow	No	6
87	75mm Tee	No	6
88	75mm Reducing tee	No	8
89	110mm Elbow	No	7
90	110mm Plasson to iron elbow	No	8
91	110mm Tee	No	8
92	110mm Reducers	No	8
<u>Sundries</u>			
93	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock	m3	28
94	Extra over excavation in earth for pipes trenches, chambers, etc for excavation in hard rock	m3	10
95	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor	m3	14
96	Extra over backfilling to pipe trenches, chambers, etc for 100mm thick imported sand bedding material and backfilling same to 300mm above crown of pipe	m3	18
<b>Carried to Collection</b>			
External Works Bill No. 1 External Works			R

97	Class B (1:3:5) unreinforced concrete in thrust blocks size 500 x 500 x 200mm high at bends, tees, etc, including all necessary excavation, formwork, etc.	No	24		
	<b><u>TESTING</u></b>				
98	Testing water pipe system	Item	1.00		
	<b><u>THE FOLLOWING TO RAIN WATER HARVESTING TANKS, ETC.</u></b>				
	<b><u>Polyethylene water storage tanks</u></b>				
99	5000 Litres Jo-jo rainwater tank or similar approved, with 75mm Diameter opening for downpipe from gutter including 50mm Diameter overflow opening with 4mm Diameter galvanised wire looped through top of tank isolated with 15mm diameter hose to top of tank and anchored to top of slab with 'Hilti' hooks drilled into slab at all four corners and 15mm hose bib tap	No	8		
	<b><u>Tank stand</u></b>				
100	Excavation in earth not exceeding 2m deep to reduce levels	m3	177		
101	Risk of collapse of sides of trench and hole excavations not exceeding 1,5m deep	m2	128		
102	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk) off site to be located by the contractor	m3	121		
103	Backfilling to trenches, holes, etc.,	m3	131		
104	Keeping excavations free of all water other than subterranean water	Item	1.00		
105	Reinforced concrete Class 25/19 in surface beds	m3	22		
106	Reinforced concrete Class 25/19 in strip footings	m3	30		
107	Finishing top surfaces of concrete smooth with a power float to surface beds, slabs, etc to falls	m2	128		
108	Rough formwork to sides edges, risers, ends and reveals not exceeding 300mm high or wide	m	128		
	<b>Carried to Collection</b>				
	External Works				
	Bill No. 1				
	External Works				

109	Steel reinforcement of various diameters to concrete foundations	t	4.80
110	Type 617 fabric reinforcement	m2	128
111	One Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar	m2	79
112	20mm COBRA 541 or equally aproved tank locking tap fitted to a 22mm extension pipe with barrel nipple & galvanised socket	No	8

**THE FOLLOWING TO ROADS AND PARKING CONSTRUCTION**

**Earthworks**

113	Excavation in earth not exceeding 2m deep for reducing levels under floors	m3	1,292
114	Extra over trench and hole excavations in earth for excavation in soft rock	m3	110
115	Extra over trench and hole excavations in earth for excavation in hard rock	m3	14
116	Keeping excavations free of all water other than subterranean water	Item	1.00
117	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 98% Mod AASHTO density for backfilling to trenches, holes, etc	m3	284
118	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor	m3	723
119	150mm Thick earth filling of G7 quality from commercial sources supplied by the contractor compacted to 95% Mod AASHTO density	m3	431
120	150mm Thick earth filling of G2 quality supplied by the contractor compacted to 90% Mod AASHTO density	m3	431

Carried to Collection

R

External Works  
 Bill No. 1  
 External Works

121	One layer of 250 micron "Consol Plastics Gunplas USB Green or equally aproved" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape or equally aproved" under surface beds	m2	1,435	
122	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 95% Mod AASHTO density	m2	1,435	
123	Soil poisoning under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	1,435	
<b><u>Additional tests required by the engineer</u></b>				
124	In-situ dry density (sand replacement) test in accordance with method A10 (a) of TMH 1	No	27	
125	Maximum dry density and optimum moisture content test in accordance with method A7 of TMH 1	No	16	
126	Road indicator test	No	11	
127	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	8	
<b><u>Bituminous premix road surfacing</u></b>				
128	30mm thick AC continuously graded medium 50/70 pen bitumen mix asphalt	m2	1,435	
129	Primer coat bituminous primer road surfacing MSP 1 to crusher run base course	ltr	773	
130	Tack coat (30% stable grade emulsion)	ltr	773	
<b><u>THE FOLLOWING TO PAVING</u></b>				
<b><u>Earthworks</u></b>				
131	Excavation in earth not exceeding 2m deep for reducing levels under floors	m3	445	
132	Extra over excavations in earth for excavation in soft rock	m3	44	
<b>Carried to Collection</b>				R
External Works				
Bill No. 1				
External Works				



133	Extra over excavations in earth for excavation in hard rock	m3	8	
134	Keeping excavations free of all water other than subterranean water	Item	1.00	
135	Rip, scarify as necessary and compact natural ground or excavated surfaces for a depth of 200mm to a density of at least 95% M.O.D. AASHTO	m2	494	
136	150mm Thick earth filling of G7 quality from commercial sources supplied by the contractor compacted to 95% Mod AASHTO density	m3	148	
137	In-situ dry density (sand replacement) test in accordance with method A10 (a) of TMH 1	No	17	
138	Maximum dry density and optimum moisture content test in accordance with method A7 of TMH 1	No	14	
139	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	15	
140	Soil poisoning under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	519	
	<b><u>Paving of concrete G Block interlocking paving bricks with butt joints on 25mm thick river sand bed with sand swept into joints (preparation of ground or filling elsewhere)</u></b>			
141	Paving in herringbone pattern	m2	519	
	<b><u>Precast concrete finished smooth on exposed surfaces including bedding, jointing and pointing</u></b>			
142	Kerb (SABS 927 fig 3) 150 x 300mm high with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint including excavation, backfilling, etc	m	241	
143	Kerb (SABS 927 fig 3) 150 x 300mm high with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint circular on plan exceeding 4m radius formed with short lengths of straight kerb including excavation, backfilling, etc	m	62	
	<b>Carried to Collection</b>			
	External Works			
	Bill No. 1			
	External Works			

**THE FOLLOWING TO ROAD MARKINGS TO PAVED AREAS**

**"Plascon or equally approved" industrial SABS approved road marking paint (colour white)**

144	Line 100mm wide	m	72
145	Traffic arrow 3000 x 300mm wide extreme	No	11
146	Line 100mm wide (T) taxi bay marking	No	7
147	Ditto, but in paraplegic symbol	No	4

**THE FOLLOWING TO FENCING AND GATES**

**"Cochrane ClearVu" Hot-dipped security fencing galvanised with and including marine fusion bond coated security fence with posts, stays, gates, etc. including hot-dipped galvanised steel bolts, etc., site clearance and preparation of ground**

148	Security fence 2,7m high vertically with 76,2 x 12,7mm aperture with and including 4 x 50mm deep "V" formation horizontal recessed bands, 2 x 75mm 70 degrees flanges along sides, single bolt comb clamps, and double bolt comb clamp, all as per manufacturer	m	534
-----	---	---	-----

**Hot dipped galvanised posts**

149	2,7m High post with and including 200 x 200 x 10mm base four times holed welded to one end and polymer cap to the other end, and including 85 x 85mm taper posts cast in 400 x 400 x 600mm deep concrete base. (base elsewhere measured) (Labour Intensive)	No	181
150	100mm Diameter x 3mm galvanised gate or straining post 1000mm long with cap to top end and other end welded to 300 x 300 x 6mm thick plate cast in and in 450 x 450 x 900mm deep concrete base. (base elsewhere measured) (Labour Intensive)	No	3
151	100mm Diameter x 3mm galvanised gate or straining post 6000mm long with cap to top end and other end welded to 300 x 300 x 6mm thick plate cast in and in 450 x 450 x 900mm deep concrete base. (base elsewhere measured) (Labour Intensive)	No	2

Carried to Collection

External Works  
 Bill No. 1  
 External Works

R

**The following in 20MPa/19mm concrete bases**

152	Unreinforced concrete fence post base size 400 x 400 x 600mm deep, including all necessary excavation, formwork, etc. (Labour Intensive)	No	30
153	Unreinforced concrete fence post base size 450 x 450 x 900mm deep, including all necessary excavation, formwork, etc. (Labour Intensive)	No	187

**THE FOLLOWING TO COVERED CARPORTS**

**Earthworks**

154	Excavation in soft material not exceeding 2m deep to holes	m3	3
155	Extra over trench and hole excavations in earth for excavation in soft rock	m3	2
156	Extra over trench and hole excavations in earth for excavation in hard rock	m3	1
157	Keeping excavations free of all water other than subterranean water	Item	1.00
158	Coarse river sand supplied by the contractor under floors etc	m3	0.2
159	In-situ dry density (sand replacement) test in accordance with method A10 (a) of TMH 1	No	2
160	One layer of 250 micron "Consol Plastics Gunplas USB Green or equally aproved" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape or equally aproved" under pavings	m2	3
161	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 95% Mod AASHTO density	m2	3
162	Soil poisoning under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	3

**Carried to Collection**

External Works  
 Bill No. 1  
 External Works

R

<b><u>Concrete, Formwork &amp; Reinforcement</u></b>			
163	25MPa/19mm Reinforced concrete in bases	m3	2
164	25MPa/19mm Reinforced concrete in stub columns in foundations (provisional)	m3	3
165	Rough formwork 250mm diameter stub column 400mm high	No	10
166	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	Sets	1
167	Steel reinforcement of various diameters to concrete work	t	0.60
<b><u>Welded columns in single lengths embedded in concrete with flat section base, top, bearer and connection plates bolted to concrete including paintwork to Engineer's requirements</u></b>			
168	200 x 3mm Thick circular hollow section posts including beams, etc	t	1.85
169	M12 (Grade 8.8) bolt	No	265
<b><u>"Chromadek or equally approved" 0.8mm thick ISQ230, Z275 spelter galvanised steel sheeting with "Chromadek" finish to both sides and accessories fixed to steel beams</u></b>			
170	Roof covering with pitch not exceeding 25 degrees	m2	75
<b><u>0.8mm Seamless aluminium</u></b>			
171	125 x 75mm Ogee eaves gutters	m	25
172	Extra over eaves gutter for stopped end	No	6
173	Extra over eaves gutter for angle	No	6
174	Extra over eaves gutter for outlet for 100mm pipe	No	6
175	Extra over rainwater pipe for bend	No	12
176	Extra over rainwater pipe for shoe	No	6
177	125 x 75mm Rainwater pipes	m	17
<b>Carried to Collection</b>			
External Works			
Bill No. 1			
External Works			

R

**THE FOLLOWING IN LANDSCAPING**

**Excavate in earth not exceeding 2m deep and dispose on site**

178 To remove humps, form shallow ditches, etc. (Labour Intensive) m3 300

**Ground preparation**

179 Cultivation and preparation of areas to be planted. (Labour Intensive) m3 200

**Topsoil obtained from prescribed stock piles on site, including spreading and levelling**

180 In plant beds, grassed areas and holes for trees, shrubs, etc. (Labour Intensive) m3 300

181 In plant boxes, pots, etc. (Labour Intensive) m3 100

**Compost, lime and fertilizer**

182 Compost in plant beds, holes for trees, shrubs, etc. (Labour Intensive) m3 80

183 Compost in plant boxes, pots, etc. (Labour Intensive) m3 20

**Roof garden and Planters**

184 Aloe vanballenii (3l) (Labour Intensive) No 50

185 Euphorbia tirrucalli (5l) (Labour Intensive) No 82

186 Carissa 'Green carpet' (1l) (Labour Intensive) No 795

**Trees/Shrubs**

187 Commiphora harveyii (3m eog) (Labour Intensive) No 13

188 Erythrina lysistemon (3m, eog) (Labour Intensive) No 15

**Grassing, ground covers, etc.**

189 Cynodon dactylon (instant lawn) size 1000x500. (Labour Intensive) m2 225

**Carried to Collection**

External Works  
 Bill No. 1  
 External Works

R

	<b><u>Maintenance</u></b>			
190	Allow for maintaining landscaping for a period of 6 months, including watering, weeding, cutting, replacing dead plants, etc.	Item	1.00	
	<b><u>THE FOLLOWING TO WATER TANKS</u></b>			
	<b><u>HOT DIPPED GALVANISED DRIP TRAYS, TANKS, ETC</u></b>			
	<b><u>"View Engineering" or other approved hot dipped galvanised steel sectional water tanks, complying with SANS 10329:2004 :</u></b>			
	Note: Rates for tanks shall include for complete installation including emergency alarm system, all necessary connections, inspections, certification, commissioning, etc. to render a complete installation to the approval of the Principal Agent.			
191	30,000 Litre capacity pressed galvanised mild steel water storage tank size approximately 4880 x 2440 x 2440mm high of minimum 3mm thick panel thickness, set on concrete plinth (elsewhere measured) at roof level, including all necessary copper riser pipes, outlets, inlets, overflows, etc., and bolting to concrete plinth with and including manufacturer approved bolts, plates, fixings etc. all to the satisfaction of the structural engineer	No	2	
192	3,600 Litre capacity pressed galvanised mild steel break pressure tank size approximately 2440 x 1220 x 1220mm high of minimum 3mm thick panel thickness, set on concrete plinth (elsewhere measured) at roof level, including all necessary copper riser pipes, outlets, inlets, overflows, etc., and bolting to concrete plinth with and including manufacturer approved bolts, plates, fixings etc. all to the satisfaction of the structural engineer	No	2	
193	Outlet union for 22mm copper pipe, including hole through tank	No	2	
194	Outlet union for 32mm copper pipe, including hole through tank	No	2	
195	Outlet union for 40mm copper pipe, including hole through tank	No	2	
	<b>Carried to Collection</b>			R
	External Works			
	Bill No. 1			
	External Works			

**PIPE INSULATION**

**20mm Thick copper pipe insulation**

196	Insulation to 35mm pipes including couplings	m	104
-----	--	---	-----

**Extra over pipe insulation for insulation around**

197	35mm Fittings, valves, etc	No	62
-----	----------------------------	----	----

**PVC sleeves for pipes not exceeding 100mm diameter**

198	Sleeve exceeding 250mm and not exceeding 500mm long	No	62
-----	---	----	----

**Core drilling hole exceeding 50mm and not exceeding 100mm diameter**

199	300mm Thick reinforced concrete slab, beam, wall, etc	No	42
-----	---	----	----

**Drawings**

200	Provision of as-built drawings	Item	1.00
-----	--------------------------------	------	------

**THE FOLLOWING TO STAINLESS STEEL TURNSTILES, ETC**

The following turnstiles are to be supplied with a minimum five years' manufacturer guarantee on mechanical components and a minimum one year guarantee on electrical components

Prices for turnstiles will be deemed to include for supply from approved manufacturer, installation by an installer approved by the manufacturer and commissioning upon completion

Carried to Collection

External Works  
 Bill No. 1  
 External Works

R

	<u>Grade 316 brushed stainless steel "Turnstar Tribune" or other approved electronically controlled bi-directional rotation turnstile with and including specialist approved card reader unit, mounting brackets for card reader unit, battery back-up system, "Rotalok" or other approved locking mechanism, restrictor tubes, split cover unit, internal mechanism dust cover, heavy duty base, LED red and green circle indicator light, random search device, low energy light, etc. complete</u>			
201	Turnstile size 2150 x 2125mm high	No	4	
	<b><u>THE FOLLOWING TO DRY STACK RETAINING WALL</u></b>			
	<u>Precast concrete interlocking planter blocks finished smooth on exposed surfaces with stepped face and curves as required to suit slopes with planter blocks laid with horizontal bed joints to 60 degree slope including backfilling with earth obtained from the excavations and filling the blocks with garden soil lightly tamped as the work proceeds</u>			
202	Excavation not exceeding 2m deep for trenches including risk of collapse, carting away, etc	m3	63	
203	Soilcrete backfilling stabilised with 6% cement and compacted to 95% mod aashto density in minimum layers of 150mm	m3	13	
204	25MPa/19mm Reinforced concrete in foundation	m3	24	
205	"Infraset Paving Terrace Blok® Concrete Retaining Walls or equally aproved" TB500 Interlocking blocks in foundations	m2	50	
206	"Infraset Paving Terrace Blok® Concrete Retaining Walls or equally aproved" TB500 Interlocking blocks	m2	250	
207	Extra over for filling in retaining blok with 25MPa/19mm unreinforced concrete in foundations	m3	5	
208	"Geogrid" or other approved 100 x 100 at 500mm laps vertically behind wall	m2	250	
	<b>Carried to Collection</b>			
	External Works			
	Bill No. 1			
	External Works			

R



209	160mm Diameter "Drainex or equally aproved" slotted pipe encased and including 19mm stones wrapped in bitem	m	100
210	50mm Diameter PVC weepholes 250mm long wrapped in bitem	No	540
211	Steel reinforcement of various diameters to concrete foundations	t	3.60

**THE FOLLOWING TO ATTENUATION TANK**

**Earthworks**

212	Excavation in soft material not exceeding 2m deep to attenuation tanks	m3	145
213	Excavation in soft material to trenches	m3	42
214	Extra over trench and hole excavations in earth for excavation in soft rock	m3	81
215	Extra over trench and hole excavations in earth for excavation in hard rock	m3	16
216	Keeping excavations free of all water other than subterranean water	Item	1.00
217	Risk of collapse of sides of trench and hole excavations not exceeding 1,5m deep	m2	155
218	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk) off site to be located by the contractor	m3	121
219	Coarse river sand supplied by the contractor under floors etc	m3	3
220	In-situ dry density (sand replacement) test in accordance with method A10 (a) of TMH 1	No	4
221	One layer of 250 micron "Consol Plastics Gunplas USB Green or equally aproved" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape or equally aproved" under pavings	m2	58

**Carried to Collection**

External Works  
 Bill No. 1  
 External Works

R

222	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 95% Mod AASHTO density	m2	58		
223	Compaction of ground surface under trenches 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	17		
224	Soil poisoning under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	58		
225	Soil poisoning to bottom and sides of trenches etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	17		
<b><u>Concrete, Formwork &amp; Reinforcement</u></b>					
226	25MPa/19mm Reinforced concrete in foundation slabs	m3	6		
227	25MPa/19mm Reinforced concrete in trenches	m3	5		
228	25MPa/19mm Reinforced concrete in slabs	m3	10		
229	Rough formwork to slabs not exceeding 250mm thick propped up exceeding 1.5m and not exceeding 3.5m high	m2	58		
230	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	Sets	3		
231	Steel reinforcement of various diameters to concrete work	t	2.50		
232	Type 245 fabric reinforcement	m2	58		
<b><u>Precast concrete</u></b>					
233	1000mm Diameter precast manhole cover and frame	No	6		
<b>Carried to Collection</b>					
External Works Bill No. 1 External Works					R

<b><u>Masonry</u></b>					
234	One Brick wall of NFX bricks (14 MPa nominal compressive strength) in Class I mortar bagged and sealed	m2	121		
235	150mm Wide reinforcement built in horizontally	m	925		
<b><u>Waterproofing</u></b>					
236	Apply Sika 720 all as per the manufactures instructions	m2	143		
237	Apply Sika 63N all as per the manufactures instructions	m2	143		
<b><u>Plastering</u></b>					
238	Cement plaster on walls	m2	143		
<b><u>Plumbing and drainage</u></b>					
239	50mm Diameter uPVC air vent pipe	No	6		
240	110mm Diameter uPVC inlet pipe including all fittings and bends etc	No	6		
241	110mm Diameter uPVC overflow pipe including all fittings and bends etc	No	6		
242	110mm Diameter uPVC outlet pipe including all fittings and bends etc	No	6		
<b><u>BUDGETARY ALLOWANCES</u></b>					
243	Allow an amount of R 350 000.00 (Three Hundred and Fifty Thousand Rand) for the supply and installation of an evaporation area as determined by the Principal Agent	Item	1.00	350,000.00	350,000.00
244	Allow an amount of R 750 000.00 (Seven Hundred and Fifty Thousand Rand) for the construction of retaining walls as determined by the Principal Agent	Item	1.00	750,000.00	750,000.00
<b>Carried to Collection</b>					
External Works					
Bill No. 1					
External Works					
				R	

External Works

**COLLECTION**

Total Brought Forward from Page No.

**Page  
No**

**Amount  
R**

- 100
- 101
- 102
- 103
- 104
- 105
- 106
- 107
- 108
- 109
- 110
- 111
- 112
- 113
- 114
- 115
- 116
- 117
- 118
- 119
- 120
- 121
- 122

**Carried Forward**

R

External Works  
 Bill No. 1  
 External Works

External Works <u>COLLECTION</u>	Page No	Amount R
<b>Brought Forward</b>		R
Total Brought Forward from Page No.	123	
	124	
<b>Carried to Final Summary</b>		R
External Works Bill No. 1 External Works		