

Brought Forward				R
<u>Suspended Acoustic Ceiling Board</u>				
1	Suspended acoustic ceiling boards or other equally approved 'isover soundlite coral' by gyproc saint-gobain, in 40mm thick, 595 x 1195mm Panels fixed with hold down clips to an open suspended T-grid system similar or equal to donn according to manufacturers specifications. 100mm thick thermal blanket by specialist all SANS10400XA minimum requirements.	m2	1 737	
2	Extra over ceiling for opening for 200mm diameter Light Fittings (provisional)	No	43	
3	Extra over ceiling for opening for 600 x 600mm Light Fittings (provisional)	No	9	
4	Extra over ceiling for opening for 600 x 600mm air-conditioning diffusers (provisional)	No	51	
5	Extra over ceiling for opening for 1200 x 600mm Light Fittings (provisional)	No	216	
<u>Gypsum ceiling Board</u>				
<u>9,5mm gypsum or other equally approved plasterboard with taped and skimmed joints</u>				
6	Ceilings including 38 x 38mm sawn softwood branderling at 400mm centres	m2	35	
7	Extra over ceiling for opening for 200mm diameter Light Fittings (provisional)	No	3	
8	Extra over ceiling for 600 x 600mm trap door of 42 x 42mm wrought softwood rebated framing with one 38 x 50mm sawn softwood cross brander covered with ceiling board and fitted flush in opening.	No	1	
<u>Shadowline cornices</u>				
9	50 x 50mm Shadow line cornices	m	1 470	
<u>FIXED PARTITIONS</u>				
Carried Forward				R
Bill No. 8 Ceilings, Partitions and Access Flooring				

Brought Forward					
	<u>Drywall partitioning consisting of 63.5mm ultrasteel studs spaced at 600mm centres into top and bottom tracks and clad both sides with "Gypsum" or other equally approved 2hr rated 12.5mm thick 'Rhino' board and all joints skimmed to a smooth finish, with and including 'MP12' mineral wool blanket between boards for sound absorption. Drywall installed all in accordance with manufacturer's specification</u>				R
10	Partitions 3.5m high with bottom and top tracks plugged	m	363		
11	Extra over partition for 75mm high aluminium skirting	m	726		
12	Extra over partition for corner	m	14		
13	Extra over partition for vertical abutment to brick walls /or concrete walls	m	158		
14	Extra over partition for tee	m	28		
15	Extra over partition for opening and door frame, overall size of single door 910 x 2110mm high (Single door elsewhere measured)	No	17		
Carried to Summary					
Bill No. 8 Ceilings, Partitions and Access Flooring					R

Item No	Unit	Quantity	Rate	Amount
<u>BILL NO. 9</u>				
<u>IRONMONGERY</u>				
<u>(CPAP WORK GROUP NO. 132 UNLESS OTHERWISE STATED)</u>				
<u>PREAMBLES</u>				
<p>The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "General Preambles for Trades 2017" as published by the Association of South African Quantity Surveyors", and Supplementary Preambles for further description and amplification of work in this section</p>				
<u>SUPPLEMENTARY PREAMBLES</u>				
<u>Proprietary items</u>				
<p>Where applicable the manufacturers names or product catalogue titles are given in sub-headings preceding the items. Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures, etc. clarifying the features of the products/articles offered. On request returnable samples are to be provided to the principal agent for consideration</p>				
<p>The following locks are to be suitable for master key operation</p>				
<u>Finishes to ironmongery</u>				
<p>Sample of all items to be provided for approval prior to placing final orders. Approved samples to remain in the sample room for the duration of the contract. All fittings to be SABS approved and compliant with SANS</p>				
<p>Fittings to be read in conjunction with all floor plans. Number of fittings shown to be checked according to the floor plans and any discrepancies to be brought to the attention of the Architects prior to placing orders</p>				
Carried Forward			R	
Bill No. 9 Ironmongery				

Brought Forward			R
<u>LOCKS</u>			
1	Cylinder euro double interactive MK SC (M2X18AISCMD)	No	36
2	Cylinder euro half interactive MKD SC (M2X20AISCMD)	No	32
3	Cylinder euro turn knob inter GMK SC (M2X19AISCMD)	No	56
4	Euro cylinder deadlock - stainless steel (L-2115-78SS)	No	89
5	W/C 8mm deadlock - SS (21314-76/8SS)	No	22
6	2915 Rebate set - satin chrome - for 2115 & 2215 lock (2915SC)	No	10
7	E/P cylinder upright lock (L-2215-78SS/SL)	No	29
8	Paraplegic facility indicator bolt AS (37651AS)	No	3
9	Escutcheon on rose bathroom (SS5004-73SS)	Pairs	22,0
10	Escutcheon on rose profile (SS5305-05SS)	Pairs	46,0
11	Escutcheon on rose profile (SS5305-05H)	No	15
12	Maglock 1200LBS mon LED (45US12VL006011)	No	9
13	ZL Bracket 1200LBS Magloc (45B012LZ006080)	No	9
<u>HANDLES</u>			
14	Mechanical coordinator double door SIL EN 1-4 (FD461-DC500)	No	3
15	Single Panic Bolt Touch Bar 900mm with Dogging Device (J-882TD-SIL)	No	8
16	OAD for J-Series & Tesa panic devices knob handle - excludes cylinder (MMODPBSCGR)	No	6
17	SS dove lever handle on 152x152mm ss backplate profile (SS6166-05SS)	Pairs	29,0
18	150mm Pull handle BT (SS5515-150BTSS)	No	25
Carried Forward			R
Bill No. 9 Ironmongery			

Brought Forward			
19	350mm Pull handle BTB (5213BBSS)	Pairs	46,0
20	22mm Diameter tubular ss dove pull handle on 152 x 304mm back plate - blank (SS5D152X304-06)	No	22
21	SS dove pull handle on back plate blank - 152 x 76mm plate (SS5D63-06SS)	No	22
22	22mm Diameter tubular ss dove pull handle rh profile on 152 x 304mm back plate - euro cylinder (SS5D152X304R-05)	No	7
23	22mm Diameter tubular ss dove pull handle lh profile on 152 x 304mm back plate - euro cylinder (SS5D152X304L-05)	No	12
24	SS BTB pull handle - 300 centres 22mm diameter (PHD-BB-300-22SS)	Pairs	10,0
<u>PUSH PLATES AND KICK PLATES</u>			
25	Push Plate - 152 x 304mm (SS5023-304W)	No	9
26	Push plate lh profile - 152 x 304mm ss - euro cylinder (SS503L-05-304W)	No	12
27	Push plate rh profile - 152 x 304mm ss - euro cylinder (SS5023R-05-304W)	No	14
28	Push plate profile - 152 x 76mm (SS5063-05SS)	No	22
29	Kick plate 200 x 800mm (SS5089-200W)	No	96
<u>DOOR CLOSERS</u>			
30	R&P closer EN 1-4 SC SIL (DC300SC)	No	1
31	Cam motion closer EN 1-4 SIL (DC500)	No	85
32	Cam motion closer 3-6 SIL DA (DC700DA)	No	3

Carried Forward

Bill No. 9
Ironmongery

Brought Forward		R	
<u>SAPS SIGNAGE</u>			
33	1100 x 1100mm cast aluminium SAPS emblem - backing plate out aluminium sprayed blue, cast aluminium star mounted on top of backing (SN01). Signage to be mounted to wall. Aluminium star mounted on top of backing cast bronze SAPS emblem, same sizes as above, individual letters, cut out aluminium letters sprayed blue/black/white & applied on pins. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-7, annexed to these bills of quantities.	No	1
34	1800 x 1200mm National flag, must be displayed according to SO (G) 202. It will be of 100% polyester multi filament webbing, the finished width and thickness is 25mm and 1.5mm. (SN02). Refer to Architects Drawing UKU-A-7001-7, annexed to these bills of quantities.	No	1
35	1800 x 1200mm Service flag. It will be of 100% polyester multi-filament webbing, the finished width and thickness is 25mm and 1.5mm. (SN03). Refer to Architects Drawing UKU-A-7001-7, annexed to these bills of quantities.	No	1
36	2450 x 1220mm 'Welcome Ikageng Police Station' sign to be constructed from 1mm white chromadek sheet. Poles to 50 x 50 x 1.6mm square tube steel poles with a height of 3600mm. Poles to be primer coated and sprayed blue. Poles is to be cast in reinforced concrete 600 x 830mm deep concrete bases, allow for excavations and formwork to bases (SN04). (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-7, annexed to these bills of quantities.	No	1
37	2450 x 1220mm 'Batho Pele Principles' sign to from 1mm white chromadek sheet. Poles to 50 x 50 x 1.6mm square tube steel poles with a height of 3600mm. Poles to be primer coated and sprayed blue. Poles is to be cast in reinforced concrete 600 x 830mm deep concrete bases, allow for excavations and formwork to bases. (All text to be confirmed by SAPS Architect). (SN05). Refer to Architects Drawing UKU-A-7001-7, annexed to these bills of quantities.	No	1
Carried Forward		R	
Bill No. 9 Ironmongery			

Brought Forward				R
38	600 x 1600mm Directory Sign. Single sided system; aluminium single sign holder extrusion (clear anodize); clear cover with silicone seal (glossy/non-glare); metal (aluminium) end caps (clear anodize); or similar approved. Lettering to be done in white. Background to be painted blue. Poles is to be cast in reinforced concrete 600 x 830mm deep concrete bases, allow for excavations and formwork to bases (SN06 & SN07). (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-7, annexed to these bills of quantities.	No	2	
39	1100 x 1100mm cast aluminium SAPS emblem - backing plate out aluminium sprayed blue, cast aluminium star mounted on top of backing (SN08). Signage to be mounted to wall. Aluminium star mounted on top of backing cast bronze SAPS emblem, same sizes as above. Individual letters, cut our aluminium letters sprayed blue/black/white & applied on pins. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	1	
40	1100 x 1100mm cast aluminium SAPS emblem - backing plate out aluminium sprayed blue, cast aluminium star mounted on top of backing (SN09). Signage to be wall mounted. Aluminium star mounted on top of backing cast bronze SAPS emblem, same sizes as above. Individual letters, cut our aluminium letters sprayed blue/black/white & applied on pins. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	1	
41	1100 x 1100mm cast aluminium SAPS emblem - backing plate out aluminium sprayed blue, cast aluminium star mounted on top of backing (SN10). Signage to be wall mounted. Aluminium star mounted on top of backing cast bronze SAPS emblem, same sizes as above. Individual letters, cut our aluminium letters sprayed blue/black/white & applied on pins. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	1	
Carried Forward				R
Bill No. 9 Ironmongery				

Brought Forward				R
42	1100 x 1100mm cast aluminium SAPS emblem - backing plate out aluminium sprayed blue, cast aluminium star mounted on top of backing (SN11). Signage to be wall mounted. Aluminium star mounted on top of backing cast bronze SAPS emblem, same sizes as above. Individual letters, cut out aluminium letters sprayed blue/black/white & applied on pins. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	1	
43	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN12). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	1	
44	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN13). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	1	
45	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN14). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	2	
Carried Forward				R
Bill No. 9 Ironmongery				

Brought Forward		R	
46	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN15). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	10
47	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN16). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	14
48	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN17). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	2
49	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN18). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	4
Carried Forward		R	
Bill No. 9 Ironmongery			

Brought Forward				R
50	150 x 300mm wall mounted sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in black. Background to be painted blue (SN19). Signage to be mounted by specialist, shop drawings are to be presented to Architect for approval. (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-8, annexed to these bills of quantities.	No	1	
51	200 x 200mm 'Toilets' Sign. Double sided system; aluminium single sign holder extrusion (clear anodize); clear cover (glossy/non-glare); plastic (abs) end caps (grey); black steel base; or similar approved. Lettering to be done in white. Background to be painted blue (SN20). (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-9, annexed to these bills of quantities.	No	5	
52	Blue Light with wording 'Police' on it. Writing must be in white. It can be wall-mounted or on a 3m pole. (SN21). (All text to be confirmed by SAPS Architect). Refer to Architects Drawing UKU-A-7001-9, annexed to these bills of quantities.	No	1	
53	594 x 842mm (A1) Snap frames with silver aluminium frame. (SN22). Refer to Architects Drawing UKU-A-7001-9, annexed to these bills of quantities.	No	6	
54	Double sided wall mounted standing aluminium sign frame suggestion box with plastic feet. Size to be 215mm wide and 297mm high with 2 interchangeable sign frames on either side. To be supplied fully assembled with all parts and accessories including locks and keys, non-reflective polycarbonate inserts to be supplied cut to size for the A4 frames. The products green certification and SABS testing to be supplied. (SN25). Refer to Architects Drawing UKU-A-7001-9, annexed to these bills of quantities.	No	1	
<u>GENERAL SIGNAGE</u>				
55	Tea/Kitchen sign 152 x 152 x 1.2mm SS	No	5	
56	Female sign 152 x 152 x 1.2mm SS	No	4	
57	Male sign 152 x 152 x 1.2 SS	No	4	
Carried Forward				R
Bill No. 9 Ironmongery				

Brought Forward				R
58	Male/female sign 152 x 152 x 1.2 SS	No	4	
59	Paraplegic sign 152 x 152 x 1.2 SS	No	3	
60	Electrical Shock sign	No	10	
STATUTORY SIGNAGE				
<u>Supply, delivery & installation to be in accordance with SANS 1186 & SANS 10400. The following signage reference codes are applicable in reference to the fire signage drawings.</u>				
<u>Statutory signage to be SABS approved and photo luminescent, external signage to be UV rated</u>				
<u>Green and white single sided signage screwed fixed on to walls as per manufacturer's details</u>				
61	Combination of 2 No. of 190 x 190mm signage. Signage include arrow (left arrow) and running man. Type E2	No	10	
62	Combination of 2 No. of 190 x 190mm signage. Signage include arrow (down arrow) and running man. Type E3	No	20	
<u>Statutory signage to be SABS approved and photo luminescent, external signage to be UV rated</u>				
<u>Red and white single sided signage screwed fixed on to walls as per manufacturer's details</u>				
63	380 x 190mm Exit signage. Type E6	No	10	
64	Combination of 3 No. of 190 x 190mm signage. Signage include arrow (down arrow), fire hose reel and fire extinguisher. Type F4	No	10	
65	Combination of 3 No. of 190 x 190mm signage. Signage include arrow (left arrow), fire hose reel and fire extinguisher. Type F5	No	2	
66	Combination of 3 No. of 190 x 190mm signage. Signage include fire extinguisher, fire hose reel and arrow (right arrow). Type F6	No	2	
67	Combination of 2 No. of 190 x 190mm signage. Signage include arrow (down arrow) and fire extinguisher. Type F13	No	10	
Carried Forward				R
Bill No. 9 Ironmongery				

Brought Forward				R
68	Combination of 2 No. of 190 x 190mm signage. Signage include arrow (down arrow) and fire hydrant. Type F15	No	20	
69	380 x 190mm Fire Exit Keep Clear signage. Type F45	No	20	
<u>SUNDRIES</u>				
70	Analogue clock with SAPS badge branded on black background. (SN24). Refer to Architects Drawing UKU-A-7001-9, annexed to these bills of quantities.	No	1	
71	Straight mounting plate for door closers	No	88	
72	Patent Fixing Screw - Nickel Plated	No	316	
73	Door Stop	No	95	
74	Dust Proof Strike	No	11	
75	flushbolt 150mm box ss	No	22	
76	Hat & Coat Hook with Buffer	No	22	
<u>"BATHROOM FITTINGS"</u>				
77	18/10 stainless steel soap dispenser in satin finish. To be surface mounted 150mm above and to the left of individual sinks. (Code 359705)	No	15	
78	Rodan ROD672 0.8mm thick satin finished stainless steel double toilet roll holder with spindle system for 2 rolls maximum. (Code 359987)	No	25	
79	18/10 stainless steel paper towel dispenser in satin finish. To be surface mounted 1300mm above floor level at bottom edge. (Code 359716)	No	15	
80	18/10 stainless steel hands free electric hand dryer in satin finish. To be surface mounted 1300mm above floor level at bottom edge. (Code 359989)	No	15	
81	18/10 stainless steel standard size waste bins in satin finish. To be surface mounted 1000mm above floor level at top edge. (Code 359731)	No	15	
Carried Forward				R
Bill No. 9 Ironmongery				

Brought Forward		R	
<u>PARAPLEGIC FITTINGS</u>			
82	32mm Stainless steel rear straight grab rail fixed to walls Code (8939Z000)	No	3
83	32mm Stainless steel chamfered side grab rail fixed to walls Code (8940Z000)	m	3
Carried to Summary		R	
Bill No. 9 Ironmongery			

Item No	Unit	Quantity	Rate	Amount
<u>BILL NO. 10</u>				
<u>METALWORK</u>				
<u>(CPAP WORK GROUP NO. 136 UNLESS OTHERWISE STATED)</u>				
<u>PREAMBLES</u>				
The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "General Preambles for Trades 2017" as published by the Association of South African Quantity Surveyors", and Supplementary Preambles for further description and amplification of work in this section				
<u>SUPPLEMENTARY PREAMBLES</u>				
<u>Descriptions of bolts, anchors, etc.</u>				
Descriptions of bolts shall be deemed to include nuts and washers.				
Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.				
Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described.				
Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres.				
<u>Aluminium doors, windows, etc.</u>				
Doors and windows shall comply with AAAMSA design criteria.				
Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed.				
The Contractor is advised that the design, supply and installation of the aluminium windows, doors and shopfronts are to be carried out in strict accordance with the Architect's specification and all aluminium profiles, manufacturing and fixing methods are to comply with				
Carried Forward			R	
Bill No. 10 Metalwork				

Brought Forward

R

AAMSA specifications and installation standards.

The Contractor to provide shop drawings for approval by the Architect. The Contractor shall submit shop drawings for approval by the Architect within two weeks of appointment. The Contractor shall only proceed with the works after written approval has been given by the Architect.

The Contractor is to allow for and calculate tolerances for expansion and contraction of all aluminium profiles.

The contractor is to provide a waterproofing guarantee for all shopfront and windows.

The Contractor is to confirm all window and shopfront sizes with the Architect.

The following certificates shall be provided prior to commencement of work on site:

1. A copy of the relevant AAAMSA performance test certificate from the manufacturer/contractor supplying the architectural aluminium product.
2. A certificate of conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively.
3. A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process.
4. A certificate of conformance confirming that glazing has been installed in accordance with SANS 10137 ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked.
5. A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against de-lamination and colour degradation for a period of not less than five years.

Carried Forward

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Bill No. 10
Metalwork

R.

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Brought Forward

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Ironmongery

All ironmongery to aluminium windows, doors, shopfronts, roller shutter doors, etc. is to be high quality adjustable stainless steel friction hinges with restrictors included with self tapper stainless steel screw fixing of plastic handle and lock piece supplied and fixed by the contractor. The Contractor is to provide for approval by the Architect samples of these ironmongery. All ironmongery shall be by the Architect prior to installation.

The Contractor to supply all relevant shopfronts with catches, handles, hinges, etc. to match shopfronts and doors, all to the Architects approval and as per Architect's drawing & schedules.

Sliding gear

All sliding gear to sliding doors and windows to be supplied by the contractor unless otherwise specified. The contractor to provide samples for approval by the Architect of these sliding gear. All sliding gear shall be by the Architect prior to installation.

Joints and sealants

All joints in frames shall be made by mechanical means.

An silicone sealant is to be provided for both sides of all internal and external shop fronts between the aluminium frames and brick wall or concrete column and between the aluminium frame and plaster finish.

GALVANISED STEEL GATES, SCREENS, ETC.

Hot dipped galvanised steel gates, etc.

- 1 810 x 2094mm High, single steel gate including 50 x 50 x 2mm square tubing frame with flatex 345 mesh welded between 12 x 12mm solid square bars, and 2mm thick steel plate welded between 12 x 12mm solid square bars, all in accordance with SANS Specification 121 (SABS ISO 1461) including hinges formed out of 19 x 2mm thick mild steel piping. Gate type G01. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP10, annexed to these bills of quantities.

No

3

Carried Forward

R

Bill No. 10
Metalwork

Brought Forward				R
2	810 x 2102mm High, single steel gate including frame which is manufactured from steel angles and 2mm thick steel sheet shaped into sizes, all in accordance with SANS Specification 121 (SABS ISO 1461). Gate type G02. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP10, annexed to these bills of quantities.	No	17	
3	4200 x 2100mm High, sliding steel framed gate including 50 x 50 x 2mm square tubing frame by specialist, all in accordance with SANS Specification 121 (SABS ISO 1461). Gate type G05. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP10, annexed to these bills of quantities.	No	2	
4	4340 x 3050mm High, swing steel gate, all steel work to be hot dipped galvanised and in accordance with the SANS specifications. Gate type G06. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP10, annexed to these bills of quantities.	No	1	
Hot dipped galvanised steel screens, etc.				
5	Screenex Galvanised or Betafence 358 Doubleskin Zincalu steel mesh or other equally approved laid into 50 x 50 x 5mm angle iron frames, screen mesh to be laid in panels approximate size 3270 x 3590mm long. Mesh welded into frame and sandwiched between frame of 40 x 40 x 3mm angle welded to mesh and main frame. Frames exceeding 1800mm in length to have an additional 40 x 40 x 3mm angle T-support placed and welded centrally onto the mesh, welding spots to be finished with cold galvanising on site. Frames to be bolted to walls with M6 expansion bolts at 200mm centres. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP3, annexed to these bills of quantities.	No	3	
Carried Forward				R
Bill No. 10 Metalwork				

Brought Forward				R
6	Screenex Galvanised or Betafence 358 Doubleskin Zincalu steel mesh or other equally approved laid into 50 x 50 x 5mm angle iron frames, screen mesh to be laid in panels approximate size 2545 x 7000mm long. Mesh welded into frame and sandwiched between frame of 40 x 40 x 3mm angle welded to mesh and main frame. Frames exceeding 1800mm in length to have an additional 40 x 40 x 3mm angle T-support placed and welded centrally onto the mesh, welding spots to be finished with cold galvanising on site. Frames to be bolted to walls with M6 expansion bolts at 200mm centres. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP3, annexed to these bills of quantities.	No	1	
7	Screenex Galvanised or Betafence 358 Doubleskin Zincalu steel mesh or other equally approved laid into 50 x 50 x 5mm angle iron frames, screen mesh to be laid in panels approximate size 2545 x 7900mm long. Mesh welded into frame and sandwiched between frame of 40 x 40 x 3mm angle welded to mesh and main frame. Frames exceeding 1800mm in length to have an additional 40 x 40 x 3mm angle T-support placed and welded centrally onto the mesh, welding spots to be finished with cold galvanising on site. Frames to be bolted to walls with M6 expansion bolts at 200mm centres. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP3, annexed to these bills of quantities.	No	2	
8	Purpose made flatex 345 or other equally approved hot dipped galvanised internal fixed screens, overall size 930 x 1030mm to steel window, screen to be welded to inside of window with 40 x 40 x 5mm mild steel angle iron, 40 x 5mm mild steel flat bar and two openings at bottom corners in grill to open window. Window Type W04. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	36	
9	Purpose made flatex 345 or other equally approved hot dipped galvanised internal fixed screens, overall size 780 x 1080mm to steel window, screen to be welded to inside of window with 40 x 40 x 5mm mild steel angle iron, 40 x 5mm mild steel flat bar and two openings at bottom corners in grill to open window. Window type W05. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	11	
Carried Forward				R
Bill No. 10 Metalwork				

Brought Forward				R
10	Purpose made flatex 345 or other equally approved hot dipped galvanised external hinged screens, overall size 930 x 1030mm to steel window, screen to be fixed with heavy duty hinges, 100 x 75 x 8mm MS angle and cover plate, 40 x 40 x 5mm mild steel angle iron, 40 x 5mm mild steel flat bar welded to angle iron frame. 50 x 50 x 5mm mild steel angle iron, bolted to wall with M6 expansion bolts and 40 x 40 x 40 x 5mm mild steel lug for padlock. Window type W04. Tenderer's are referred to Architect's drawings drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	36	
11	Purpose made flatex 345 or other equally approved hot dipped galvanised external hinged screens, overall size 780 x 1080mm to steel window, screen to be fixed with heavy duty hinges, 100 x 75 x 8mm MS angle and cover plate, 40 x 40 x 5mm mild steel angle iron, 40 x 5mm mild steel flat bar welded to angle iron frame. 50 x 50 x 5mm mild steel angle iron, bolted to wall with M6 expansion bolts and 40 x 40 x 40 x 5mm mild steel lug for padlock. Window type W05. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	11	
<u>HOT DIPPED GALVANISED SUNDRY STEELWORK</u>				
<u>Brackets, etc. to roof timber, benches, shelvings, etc.</u>				
12	Double slotted H25 wallband fixed to wall to manufacturer's specifications and including wallband saddle H30 for heavy loading	m	124	
13	250mm straight shelf bracket fixed to underside of timber shelves and slotted wallband	No	275	
<u>GALVANISED MILD STEEL HANDRAILS, BALUSTRADING, ETC.</u>				
Carried Forward				R
Bill No. 10 Metalwork				

Brought Forward		R
<p><u>Hot dipped galvanised welded and bolted balustrading including bolting with and including approved fixing plate and bolts</u></p>		
14	50mm Diameter horizontal hot dipped galvanised steel hollow round bar continuous balustrades welded to 75 x 8mm flat bar stanchion posts at approximately 1500mm centres recessed into 88mm diameter x 260mm deep core in concrete or brickwork and fixed into recess with non shrink grouted with 200 x 75 x 5mm galvanised mild steel covered plate.	m 9
15	50mm Diameter raking hot dipped galvanised steel hollow round bar continuous balustrades welded to 75 x 8mm flat bar stanchion posts at approximately 1500mm centres recessed into 88mm diameter x 260mm deep core in concrete or brickwork and fixed into recess with non shrink grouted with 200 x 75 x 5mm galvanised mild steel covered plate	m 114
16	50mm Diameter raking hot dipped galvanised steel hollow round bar handrail set raking with support brackets at 1200mm centres comprising 12mm diameter x 110mm long hot dipped galvanised steel rod with one end welded to rail other end bent and epoxied into brickwork including to 75mm diameter steel fixing / cover plate.	m 14
<p><u>(CPAP WORK GROUP NO. 140 UNLESS OTHERWISE STATED)</u></p>		
<p><u>ALUMINIUM WINDOWS, ETC.</u></p>		
Carried Forward		R
<p>Bill No. 10 Metalwork</p>		

Brought Forward				R
<p><u>Aluminium windows complete with subframes, ironmongery, glass, sealing, etc., and fixing to brickwork or concrete or steel</u></p> <p><u>All windows to with AAAMSA performance criteria A2 and able to meet the mechanical performance requirements of SANS 613 for wind loads up to 1500Pa.</u></p> <p><u>Glazing shall be executed strictly on conformance with glass manufacturer's recommendation and SANS 10137:2011 and SANS 10400 Parts B, N, XA.</u></p> <p><u>Frames to be installed strictly according to manufacturer's specifications.</u></p>				
17	Purpose made 'charcoal finish' powder coated aluminium window comprises of one fixed panel and two opening panels, all glazing with 6.38mm laminated safety glass with and including tinting to reduce vision from outside, overall size 1320 x 1200mm high. Window Type W01. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	67	
18	Purpose made 'charcoal finish' powder coated aluminium window comprises of one opening panel, all glazing with 6.38mm laminated safety glass with and including obscure privacy glazing film and tinting to reduce vision from outside, overall size 660 x 660mm high. Window Type W02. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	47	
19	Purpose made 'charcoal finish' powder coated aluminium window comprises of one opening panel, all glazing with 6.38mm laminated safety glass with and including tinting to reduce vision from outside, overall size 910 x 910mm high. Window Type W03. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	15	
20	Purpose made 'charcoal finish' powder coated aluminium window comprises of one fixed panel and one sliding panel, all glazing with 6.38mm laminated safety glass with and including tinting to reduce vision from outside, overall size 700 x 1000mm high. Window Type W06. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	2	
Carried Forward				R
Bill No. 10 Metalwork				

Brought Forward				R
21	Purpose made 'charcoal finish' powder coated aluminium clerestory window comprises of one fixed panel, all glazing with 6.38mm laminated safety glass with and including tinting to reduce vision from outside, overall size 1200 x 430mm high. Window Type W07. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	13	
22	Purpose made 'charcoal finish' powder coated aluminium window comprises of one fixed panel, all glazing with 6.38mm laminated safety glass with and including 1-way mirror finish, overall size 570 x 910mm high. Window Type W08. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	1	
<u>FIRE RATED ALUMINIUM WINDOW, ETC.</u>				
<u>Aluminium windows with two hour fire rating, complete with subframes, ironmongery, glass, sealing, etc., and fixing to brickwork or concrete or steel</u>				
<u>All windows to with AAAMSA performance criteria A2 and able to meet the mechanical performance requirements of SANS 613 for wind loads up to 1500Pa.</u>				
<u>Glazing shall be executed strictly on conformance with glass manufacturer's recommendation and SANS 10137:2011 and SANS 10400 Parts B, N, XA.</u>				
<u>Aluminium thermal break frame all to SANS 10400XA regulations.</u>				
<u>Frames to be installed strictly according to manufacturer's specifications.</u>				
23	Purpose made 'charcoal finish' powder coated aluminium window comprises of one fixed panel and two opening panels, all glazing with 6mm thick 2 hour fire rated Pyran S borosilicate glass with and including tinting to reduce vision from outside, overall size 1320 x 1200mm high. Window Type W01. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	8	
<u>ALUMINIUM SLIDING DOORS, ETC.</u>				
Carried Forward				R
Bill No. 10 Metalwork				

Brought Forward				R
<p><u>Aluminium sliding doors complete with subframes, ironmongery, glass, sealing, etc., and fixing to brickwork or concrete or steel</u></p> <p><u>All doors to with AAAMSA performance criteria A2 and able to meet the mechanical performance requirements of SANS 613 for wind loads up to 1500Pa.</u></p> <p><u>Glazing shall be executed strictly on conformance with glass manufacturer's recommendation and SANS 10137:2011 and SANS 10400 Parts B, N, XA.</u></p> <p><u>Aluminium thermal break frame all to SANS 10400XA regulations.</u></p> <p><u>Frames to be installed strictly according to manufacturer's specifications.</u></p>				
24	<p>Purpose made 'charcoal finish' powder coated aluminium sliding door comprises of one fixed panel and two sliding panels with and including "Besam" or equally approved automatic slider. All glazing with 6mm laminated safety glass with and including tinting to reduce vision from outside, overall size 2925 x 2100mm high. Door type D08. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.</p>	No	2	
25	<p>Purpose made 'charcoal finish' powder coated aluminium sliding door comprises of two fixed panels and two sliding panels with and including "Besam" or equally approved automatic slider. All glazing with 6mm laminated safety glass with and including tinting to reduce vision from outside, overall size 4920 x 2100mm high. Door type D09. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.</p> <p><u>ALUMINIUM AUTOMATIC SLIDING DOORS, ETC.</u></p>	No	1	
Carried Forward				R
<p>Bill No. 10 Metalwork</p>				

Brought Forward

R

Aluminium automatic sliding doors complete with subframes, ironmongery, glass, sealing, etc., and fixing to brickwork or concrete or steel

All doors to with AAAMSA performance criteria A2 and able to meet the mechanical performance requirements of SANS 613 for wind loads up to 1500Pa.

Glazing shall be executed strictly on conformance with glass manufacturer's recommendation and SANS 10137:2011 and SANS 10400 Parts B, N, XA.

Aluminium thermal break frame all to SANS 10400XA regulations.

Frames to be installed strictly according to manufacturer's specifications.

- 26 Purpose made 'charcoal finish' powder coated electronically operated, aluminium sliding door comprises of two fixed panels and two sliding panels with and including "Besam" or equally approved automatic slider. All glazing with 6mm laminated safety glass with and including tinting to reduce vision from outside, overall size 4250 x 2300mm high. Door type D07. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.

No

1

- 27 Purpose made 'charcoal finish' powder coated electronically operated, aluminium sliding door comprises of one fixed panels and two sliding panels with and including "Besam" or equally approved automatic slider. All glazing with 6mm laminated safety glass with and including tinting to reduce vision from outside, overall size 2925 x 2100mm high. Door type D08. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.

No

2

Carried Forward

R

Bill No. 10
Metalwork

Brought Forward		R	
28	<p>Purpose made 'charcoal finish' powder coated electronically operated, aluminium sliding door comprises of two fixed panels and two sliding panels with and including "Besam" or equally approved automatic slider. All glazing with 6mm laminated safety glass with and including tinting to reduce vision from outside, overall size 4920 x 2100mm high. Door type D09. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.</p> <p><u>FIRE RATED ALUMINIUM SLIDING DOOR, ETC.</u></p> <p><u>2 Hour Fire Rating aluminium sliding doors complete with subframes, ironmongery, glass, sealing, etc., and fixing to brickwork or concrete or steel</u></p> <p><u>All windows to with AAAMSA performance criteria A2 and able to meet the mechanical performance requirements of SANS 613 for wind loads up to 1500Pa.</u></p> <p><u>Glazing shall be executed strictly on conformance with glass manufacturer's recommendation and SANS 10137:2011 and SANS 10400 Parts B, N, XA.</u></p> <p><u>Aluminium thermal break frame all to SANS 10400XA regulations.</u></p> <p><u>Frames to be installed strictly according to manufacturer's specifications.</u></p>	No	2
29	<p>Purpose made 'charcoal finish' powder coated 2 hour fire rated aluminium sliding door, comprises of one fixed panel and two sliding panels and including "Besam" or equally approved automatic slider. All glazing with 6mm laminated safety glass with and including tinting to reduce vision from outside, overall size 2925 x 2100mm high. Door Type D08. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.</p>	No	2
Carried Forward		R	
Bill No. 10 Metalwork			

Brought Forward				R
30	Purpose made 'charcoal finish' powder coated 2 hour fire rated aluminium sliding door, comprises of two fixed panels and two sliding panels and including "Besam" or equally approved automatic slider. All glazing with 6mm laminated safety glass with and including tinting to reduce vision from outside, overall size 4920 x 2100mm high. Door Type D09. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	1	
	<u>Aluminium framed shower door, factory glazed with 6mm toughened obscure safety glass, and fix in strict accordance with the manufacturers specifications:</u>			
31	872 x 2200mm High shower door	No	8	
	<u>(CPAP WORK GROUP NO. 136 UNLESS OTHERWISE STATED)</u>			
	<u>GALVANISED PRESSED STEEL DOOR FRAMES</u>			
	<u>1.6mm Double rebated frames suitable for one brick wall</u>			
32	Frame for single door size 910 x 2110mm high including hinges welded to frame. Door Type D01. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	75	
33	Frame for single door size 1010 x 2110mm high including hinges welded to frame. Door Type D02. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	5	
34	Frame for single door size 810 x 2110mm high including hinges welded to frame. Door Type D03. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	25	
35	Frame for double door size 1510 x 1882mm high including hinges welded to frame. Door Type D06. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	7	
Carried Forward				R
Bill No. 10 Metalwork				

Brought Forward		R	
<u>STEEL STRONGROOM DOORS, VENTILATORS, ETC</u>			
<u>Approved strongroom doors etc suitable for 230mm walls, fixed to brickwork or concrete</u>			
36	164 x 910 x 2110mm Single strongroom steel door, and 480kg in weight, all to manufacturers specifications including 50mm frame, category 2 (light duty) strongroom door to manufacturers specifications with rustproof undercoat by manufacturer two coats of universal SABS approved gloss enamel paint to door and door frame. Ironmongery to include 8 bolts of 40mm diameter (4 front, 4 back). All to manufacturers specifications. 2 x 7-lever security keylock to manufacturer's specifications. Colour by architect (elsewhere measured). Door type D05. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	7
<u>Approved strongroom ventilators</u>			
37	Ventilator size 250 x 250mm	No	7
<u>GALVANISED PRESSED STEEL DOORS</u>			
<u>Steel doors suitable for one brick wall</u>			
38	810 x 2110mm High single solid steel door, all steel work to be hot dipped galvanised and all in accordance to SAPS and Five Star Specifications. Door type D13. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	14
39	910 x 2110mm High single solid steel door, all steel work to be hot dipped galvanised and all in accordance to SAPS and Five Star Specifications. Door type D14. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	4
<u>GALVANISED PRESSED STEEL WINDOWS</u>			
Carried Forward		R	
Bill No. 10 Metalwork			

Brought Forward				R
<u>Windows, doors, etc of rolled sections</u>				
40	Purpose made steel window, overall size 850 x 950mm high security cell window with two stage barrier installation, as per manufacturers specification, with 30 x 16mm manganese grade SS14/7 or Creusabro 8000 (water laser) steel bar built 150mm into wall and 230 x 1,6mm mild steel lug built into wall with 6.4mm laminated safety glass, internal fixed screens and external hinged screens (internal and external screens, elsewhere measured). Window Type W04. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	36	
41	Purpose made steel window, overall size 700 x 1000mm high security cell window with two stage barrier installation and 100 x 50 x 2,5mm steel open channel frame with glazing beads, steel mesh with 6.4mm thick laminated glass, provide for window to be tinted to reduce vision from outside. Fitted with 16mm diameter bright mild steel bars at 80mm centres with M8 expansion bolts to fix frame onto wall, including 8mm rivets to secure speech profile at 150mm centres with timber spacers to hold glass in position. Window Type W05. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP11, annexed to these bills of quantities.	No	11	
<u>GALVANISED STEEL BURGLAR BARS</u>				
<u>Galvanised mild steel burglar bars comprises of 12mm vertical round bars welded on 40 x 5mm flat bar frame at 80mm centres. Frames to be bolted to walls with M6 expansion bolts at 500mm centres. All visible bolts must be tack welded.</u>				
42	Burglar bar size 2550 x 3000mm high including opening for a single gate, gate type G01 (gate elsewhere measured).	No	1	
43	Burglar bar size 3350 x 3000mm high including opening for a single gate, gate type G01 (gate elsewhere measured).	No	1	
44	Burglar bar size 3350 x 3000mm high	No	1	
45	Burglar bar size 4700 x 2500mm high	No	1	
Carried Forward				R
Bill No. 10 Metalwork				

Brought Forward				R
<u>GALVANISED PRESSED STEEL TRANSFORMER ROOM DOORS AND FRAMES</u>				
<u>Transformer Room Doors</u>				
46	Double transformer room door size 1810 x 2110mm high including steel frame. Door type D10. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 1003 - SP9, annexed to these bills of quantities.	No	5	
<u>PINNING BOARDS</u>				
<u>Anodized aluminium framed felt pinning board plugged and screwed to walls with counter sunk brass screws and cupped washers</u>				
47	Pinning board, size 1500 x 900mm high. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 7001 - 9, annexed to these bills of quantities.	No	9	
<u>SUNDRIES</u>				
48	Galvanised spiral intersecting cross type razor wire(barbed wire) with 3 to 5 clips on every to neighbour coil loop. Tenderer's are referred to Architects drawing No. 132002 UKU - A - 1003 - SP3 , annexed to these bills of quantities.	m	161	
49	Snap frame with a "silver finish" aluminium frame, overall size 594 x 842mm high. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 7001 - 9, annexed to these bills of quantities.	m	6	
50	Double sided wall mounted standing aluminium frame suggestion box with plastic feet and two interchangeable sign frames on either side, with and including all parts and accessories including locks, keys and non-reflective polycarbonate inserts, cut to size for the A4 frames, overall size 215 x 297mm high. Green certification and SABS testing is to be supplied. Tenderer's are referred to Architect's drawing No. 132002 UKU - A - 7001 - 9, annexed to these bills of quantities.	m	1	
Carried to Summary				R
Bill No. 10 Metalwork				

Item No	Unit	Quantity	Rate	Amount
<u>BILL NO. 11</u>				
<u>PLASTERING</u>				
<u>(CPAP WORK GROUP NO. 142 UNLESS OTHERWISE STATED)</u>				
<u>PREAMBLES</u>				
The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "General Preambles for Trades 2017" as published by the Association of South African Quantity Surveyors", and Supplementary Preambles for further description and amplification of work in this section				
<u>SUPPLEMENTARY PREAMBLES</u>				
<u>Method</u>				
The method to be used shall be either the monolithic method or the bonded method				
<u>Laying</u>				
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				
<u>SCREEDS</u>				
Carried Forward			R	
Bill No. 11 Plastering				

Brought Forward			R
<u>Screeds wood floated on concrete</u>			
1	30mm Thick screeds (LI)	m2	1 617
2	40mm screed to falls (LI)	m2	11
3	Average 75mm Thick on floors laid to falls and currents (LI)	m2	334
4	75 x 75mm Triangular fillets against walls, kerbs, etc. (LI)	m	274
<u>GRANOLITHIC</u>			
<u>Untinted granolithic on concrete</u>			
5	30mm thick on floors (LI)	m2	961
6	30mm thick on concrete benches (LI)	m2	29
7	75mm High coved skirting (LI)	m	648
<u>INTERNAL PLASTER</u>			
<u>One coat cement plaster steel floated on brickwork</u>			
8	On walls (LI)	m2	6 073
9	On narrow widths (LI)	m2	438
<u>One coat cement plaster steel floated on concrete</u>			
10	On concrete walls (LI)	m2	394
11	On concrete soffits (LI)	m2	618
12	On concrete beams (LI)	m2	55
13	On narrow widths (LI)	m2	9
<u>EXTERNAL PLASTER</u>			
<u>One coat cement plaster steel floated on concrete</u>			
14	On concrete beams (LI)	m2	55
Carried Forward			R
Bill No. 11 Plastering			

Brought Forward					
<u>CORNER PROTECTORS, DIVIDING STRIPS, ETC.</u>					
15	3 x 32mm Flat section aluminium dividing strips between different floor finishes	m	37	R	
Carried to Summary				R	
Bill No. 11 Plastering					

Item No		Unit	Quantity	Rate	Amount
	<u>BILL NO. 12</u>				
	<u>TILING</u>				
	<u>(CPAP WORK GROUP NO. 144 UNLESS OTHERWISE STATED)</u>				
	<u>PREAMBLES</u>				
	The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "General Preambles for Trades 2017" as published by the Association of South African Quantity Surveyors", and Supplementary Preambles for further description and amplification of work in this section				
	<u>SUPPLEMENTARY PREAMBLES</u>				
	<u>Fixing</u>				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat				
	Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts as recommended by the manufacturer of the tiles				
	<u>WALL TILING</u>				
	<u>Porcelain wall tiles (PC R 350.00/m2) excluding VAT, fixed with approved adhesive to plaster (plaster elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>				
1	On splashback (LI)	m	39		
2	On walls (LI)	m2	289		
	Carried Forward			R	
	Bill No. 12				
	Tiling				

Brought Forward			R
3	On narrow widths (LI)	m2	47
4	Circular cutting for pipe size not exceeding 100mm diameter	No	32
5	Circular cutting for pipe size exceeding 100mm and not exceeding 100mm diameter	No	48
<u>FLOOR TILING</u>			
<u>Porcelain floor tiles (PC R 350.00/m2) excluding VAT, fixed with approved adhesive to screeds (screeds elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>			
6	On floors (LI)	m2	1 617
7	100mm High skirting (LI)	m	1 577
<u>Non-slip mosaic tiles (PC R 1500.00/m2) excluding VAT fixed with approved adhesive on waterproofing surface on top of screeds (waterproofing and screeds elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>			
8	To shower floors (LI)	m2	11
<u>SUNDRIES</u>			
9	10mm Aluminium straight edge trim	m	261
Carried to Summary			R
Bill No. 12 Tiling			

R. R.J. Lm

Item
No

Unit Quantity Rate Amount

BILL NO. 13

PLUMBING & DRAINAGE

(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)

PREAMBLES

The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "General Preambles for Trades 2017" as published by the Association of South African Quantity Surveyors", and Supplementary Preambles for further description and amplification of work in this section

SUPPLEMENTARY PREAMBLES

Sealing of edges

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

R

Bill No. 13
Plumbing and Drainage (Provisional)

R.

RZ

hm

Brought Forward

Polycorp 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 Maksal 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 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.

Carried Forward

Bill No. 13
Plumbing and Drainage (Provisional)

<p style="text-align: right;">Brought Forward</p> <p><u>Paper wrapping to pipes</u></p> <p>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</p> <p><u>Densyl petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd</u></p> <p>Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with overlaps. Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, Lay flat sheeting, securing of same, etc.</p> <p>Prices for wrapping of pipes shall include for all work as described to couplings in the length.</p> <p><u>Excavations</u></p> <p>No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling</p> <p>"Intermediate material" and "hard material" shall be as defined in "Earthworks"</p> <p><u>Laying, backfilling, bedding, etc. of pipes</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers instructions</p> <p>Where no manufacturers 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</p>			R	
<p style="text-align: right;">Carried Forward</p> <p>Bill No. 13 Plumbing and Drainage (Provisional)</p>			R	

Brought Forward

R

Flush pans

Flush pans shall have straight or side outlets and "P" or "S" traps as necessary

Stainless steel basins, sinks, wash troughs, urinals, etc.

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc. are given separately) 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 inspection chambers, catchpits, etc. shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 95% Mod AASHTO density.

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc. are given separately).

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

Where required, 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)

(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)

RAINWATER DISPOSAL

Carried Forward

R

Bill No. 13
Plumbing and Drainage (Provisional)

**Ikageng New Police Station
Portion 4 of ERF 6934 Ikageng Ext. 4**

Brought Forward			R
<u>1.6mm Gauge aluminium gutter box</u>			
1	250 x 200mm High purpose made box Gutter	m	1 217
2	Extra over gutter box for outlet	No	200
<u>0.9mm Pre-coated aluminium seamless rainwater downpipes colour brown with baked enamel finish, including holder butts, etc.</u>			
3	100 x 100mm Rainwater downpipes	m	908
4	Extra on rainwater pipe for bend	No	400
5	Extra on rainwater pipe for shoe	No	200
<u>Heavy duty uPVC class 12 pipes cast into concrete slabs or columns, fixed to soffit and walls or chased into walls, fixed in structural steel columns, etc. all in accordance with manufacturers specifications</u>			
6	110mm Pipes (LI)	m	154
<u>Extra over Class 12 uPVC Pipes for fittings:</u>			
7	110mm Bend (LI)	No	102
8	110mm Junction (LI)	No	17
<u>Floor Drains</u>			
9	Fulbore 110mm 180 degree vertical roof outlet, centre bolt Saint Gobain or other approved	No	34
<u>(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)</u>			
<u>SANITARY FITTINGS</u>			
<u>WC</u>			
10	Vitreous china Parktown 90 degree outlet top inlet or back inlet flush valve (code: 431600) and double flap plastic seat	No	19
Carried Forward			R
Bill No. 13 Plumbing and Drainage (Provisional)			

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Brought Forward				R
11	25mm Diameter chrome flush valve for wc for concealed installation with push button actuator, 1.2 - 5.0 bar flow pressure, flow rate adjustment, including 25mm supply pipe, stop valve, flush pipe and 300mm extension pipe to wc	No	19	
<u>Wash hand Basin</u>				
12	Bantam vitreous china cloakroom basin color white, size 455x 290mm with one tap holes (LHS), including integrated overflow and chain stay (code 7030)	No	24	
13	Ideal or other equally approved water saver self-closing push button pillar tap, non-hold cold water supply only, chrome finish, with flow time of 6-9secs, code (08212)	No	24	
14	GH angle valve bau 15 x 15mm	No	24	
15	303-32 Basin waste	No	24	
16	ISM Gio bottle trap CP 32mm	No	24	
<u>WC (Paraplegic)</u>				
17	Paraplegic WC (code: 025134) with back inlet flush valve & double flap plastic seat.	No	3	
18	25mm Diameter chrome flush valve for wc for concealed installation with push button actuator, 1.2 - 5.0 bar flow pressure, flow rate adjustment, including 25mm supply pipe, stop valve, flush pipe and 300mm extension pipe to wc	No	3	
<u>Wash hand basin (Paraplegic)</u>				
19	Hibiscus Vitreous china lavatory basin color White (Code: 7023), size 510 x 405mm with one tap hole integrated overflow	No	3	
20	Medical elbow action pillar tap with high waist, chrome finish, code 504-21B & 504-21R	No	3	
21	GH angle valve bau 15 x 15mm	No	3	
22	303-32 Basin waste	No	3	
23	ISM Gio bottle trap CP 32mm	No	3	
Carried Forward				R
Bill No. 13 Plumbing and Drainage (Provisional)				

Brought Forward				R
<u>WC (Cell)</u>				
24	Vandal proof WC Pan manufactured from 1.2mm grade 304 (18/10) stainless steel, fully welded and polished to a no.4 satin finish, circular flushing rim & bowl. (All connections to be outside). Integral 35mm wide fixing flange to bottom sides & top, 7 times bolted to wall and floor complete with expanded metal mesh for mechanical bond for plaster/screed to the pan flange.	No	7	
25	25mm Diameter chrome flush valve for wc for concealed installation with push button actuator, 1.2 - 5.0 bar flow pressure, flow rate adjustment, including 25mm supply pipe, stop valve, flush pipe and 300mm extension pipe to wc	No	7	
<u>Sink/Fountain (cell)</u>				
26	Vandal proof hand wash basin manufactured from 102mm grade 304 AISI (18/10) stainless steel, fully welded and polished to a no4 satin finish, size 340 x 350 x 125mm, including a fitted 15mm push butt-button tap mounted at top with 38 CP brass waste outlet, built flush into brick wall and secured with lugs.	No	7	
<u>Urinals</u>				
27	Vaal wall mounted urinal (code: 705127) with back inlet with automatic flush sensors or manual flush valve (at least one urinal to be installed at lowered heights for kids.	No	3	
<u>Kitchen Sink-Single Bowl</u>				
28	Projectline Model PLN611 stainless steel single bowl inset sink (Code: 821047), overall size 800 x 460mm wide with one 340 x 370 x 150mm deep bowls waste fitting and PVC traps (traps elsewhere measured).	No	7	
29	15mm Chrome plated deck mounted sink mixer with overarm swivel outlet and adjustable flanges (code: NA-970)	No	7	
30	GH angle valve bau 15 x 10mm	No	14	
31	32 x 40mm Butyl rubber "P" or "S" trap jointed to waste outlet fitting and uPVC pipe including clamps	No	7	
Carried Forward				R
Bill No. 13 Plumbing and Drainage (Provisional)				

Brought Forward				R
<u>Showers</u>				
32	15mm Chrome plated wall mounted under wall mixer (code: NA-956)	No	3	
33	Vandal proof shower rose chrome finish code (09033)	No	3	
34	40mm rough brass shower p trap (code: 373SQ) with shallow seal and chrome plated square grating.	No	3	
<u>Shower (cell)</u>				
35	Push Button metering non hold open valve as prison type or other equally approved	No	5	
36	Walcro cirs hexs overhead ceiling shower with resistant sleeve	No	5	
<u>Floor Drains</u>				
37	Herbish HB GT 700 Under counter grease trap	No	1	
38	"Herbish" or other equally approved chemical dosing unit (Enzyme/Bio dosing for grease line) including Bio Fluid	No	1	
39	"Herbish" or other equally approved HBSD100 stainless steel floor drain connected uPVC pipes all in accordance to manufacturer's details	No	10	
40	"Herbish" or other equally approved HB 200 V (H) NW100 stainless steel floor drain connected uPVC pipes all in accordance to manufacturer's details	No	10	
<u>(CPAP WORK GROUP NO. 146 UNLESS OTHERWISE STATED)</u>				
<u>SANITARY PLUMBING</u>				
<u>uPVC Pipes cast into concrete slabs, concrete surface bed, fixed to soffit and walls, or chased into walls, etc. in accordance with manufacturers specifications</u>				
41	50mm Pipes (LI)	m	151	
42	110mm Pipes (LI)	m	221	
Carried Forward				R
Bill No. 13 Plumbing and Drainage (Provisional)				

Brought Forward			R
43	160mm Pipes (LI)	m	39
<u>Extra over uPVC pipes for fittings</u>			
44	50mm Access junction (LI)	No	9
45	110mm Access junction (LI)	No	54
46	110 x 50mm Access junction (LI)	No	17
47	110mm Double access junction (LI)	No	5
48	50mm Junction (LI)	No	9
49	110mm Junction (LI)	No	59
50	110 x 50mm Junction (LI)	No	17
51	110mm Double junction (LI)	No	6
52	110 x 50mm Reducer (LI)	No	11
53	160 x 110mm Reducer (LI)	No	17
54	50mm Bend (LI)	No	41
55	110mm Bend (LI)	No	151
56	50mm End cap (LI)	No	22
57	110mm End cap (LI)	No	55
58	110mm Air admittance valves (LI)	No	40
59	50mm Kimberley sockets (LI)	No	11
60	110mm Kimberley sockets (LI)	No	11
61	110mm Pan connector (LI)	No	29
<u>CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED</u>			
Carried Forward			R
Bill No. 13 Plumbing and Drainage (Provisional)			

Brought Forward			R
<u>WATER SUPPLIES</u>			
All piping embedded into concrete or chased into walls to be twice wrapped in strong approved building paper.			
Rates for surface mounted pipe shall be deemed to include all fixtures and fittings for pipes fixed to walls, in chases, and in ceilings.			
<u>Geberit Mepla or other equally approved pipes fixed to soffit and walls, or chased into walls, chased into concrete, etc. in accordance with manufacturers specifications:</u>			
62	16mm Pipes (LI)	m	27
63	20mm Pipes (LI)	m	421
64	26mm Pipes (LI)	m	167
65	32mm Pipes (LI)	m	157
66	40mm Pipes (LI)	m	65
67	50mm Pipes (LI)	m	32
<u>Extra over Mepla or other equally approved pipes for fittings:</u>			
68	16mm Bend (LI)	No	11
69	20mm Bend (LI)	No	259
70	26mm Bend (LI)	No	52
71	32mm Bend (LI)	No	41
72	40mm Bend (LI)	No	11
73	50mm Bend (LI)	No	6
74	16mm Coupling (LI)	No	11
75	20mm Coupling (LI)	No	86
76	26mm Coupling (LI)	No	38
Carried Forward			R
Bill No. 13 Plumbing and Drainage (Provisional)			

**Ikageng New Police Station
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Brought Forward				R
77	32mm Coupling (LI)	No	36	
78	40mm Coupling (LI)	No	16	
79	50mm Coupling (LI)	No	11	
80	20mm Tees (LI)	No	24	
81	26mm Tees (LI)	No	11	
82	32mm Tees (LI)	No	11	
83	40mm Tees (LI)	No	11	
84	50mm Tees (LI)	No	6	
85	26 x 20mm Tees (LI)	No	58	
86	32 x 20 x 26mm Tees (LI)	No	9	
87	32 x 26 x 26mm Tees (LI)	No	6	
88	32 x 32 x 20mm Tees (LI)	No	16	
89	32 x 32 x 26mm Tees (LI)	No	9	
90	40 x 40 x 26mm Tees (LI)	No	6	
91	40 x 40 x 32mm Tees (LI)	No	9	
92	50 x 50 x 26mm Tees (LI)	No	6	
93	50 x 50 x 32mm Tees (LI)	No	6	
94	26 x 20mm Reducer (LI)	No	11	
95	32 x 26mm Reducer (LI)	No	13	
96	40 x 26mm Reducer (LI)	No	9	
97	40 x 32mm Reducer (LI)	No	6	
98	50 x 32mm Reducer (LI)	No	9	
99	50 x 40mm Reducer (LI)	No	6	
Carried Forward				R
Bill No. 13 Plumbing and Drainage (Provisional)				

Brought Forward			R
<u>Extra over Mepla or other equally approved pipes for brass compression fittings:</u>			
100	15mm Flexible service pipe 300mm girth	No	64
101	15mm Wallplate elbow	No	64
102	22mm Wallplate elbow	No	32
103	20mm Isolating valve	No	105
104	26mm Isolating valve	No	15
105	32mm Isolating valve	No	9
<u>HDPE Class 16 pipes fixed to soffit and walls, or chased into walls, chased into concrete, etc. in accordance with manufacturers specifications:</u>			
106	32mm Pipes (LI)	m	52
107	50mm Pipes (LI)	m	39
108	110mm Pipes (LI)	m	394
<u>Extra over HDPE Class 16 pipes for fittings:</u>			
109	32mm Bend (LI)	No	11
110	50mm Bend (LI)	No	6
111	110mm Bend (LI)	No	9
112	110mm Tees (LI)	No	6
113	110 x 110 x 32mm Tees (LI)	No	11
114	110 x 110 x 50mm Tees (LI)	No	6
<u>Extra over HDPE Class 16 pipes for brass compression fittings:</u>			
115	32mm Isolating valve	No	12
116	50mm Isolating valve	No	8
Carried Forward			R
Bill No. 13 Plumbing and Drainage (Provisional)			

Brought Forward			R
<u>Copper pipes:</u>			
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			
<u>Class 0 copper pipes cast into concrete slabs, concrete surface bed, fixed to soffit and walls, or chased into walls, etc. in accordance with manufacturers specifications</u>			
117	15mm Pipes (LI)	m	16
118	22mm Pipes (LI)	m	178
<u>Extra over class 0 copper pipes for capillary fittings</u>			
119	15mm Fittings (LI)	No	41
120	22mm Fittings (LI)	No	89
<u>Extra over copper pipes for brass compression fittings:</u>			
121	28mm Epoxy coated and lined strainer with element	No	2
122	54mm Epoxy coated and lined strainer with element	No	2
123	28mm Relux (non-return) valves	No	6
124	42mm Relux (non-return) valves	No	4
125	54mm Gate valves	No	14
126	28mm Connecting valves	No	42
127	42mm Connecting valves	No	20
128	54mm Connecting valves	No	34
Carried Forward			R
Bill No. 13 Plumbing and Drainage (Provisional)			

Brought Forward				R
129	DN 26, 130 series balancing valves with venturic device, Caleffi or other approved	No	4	
130	Reliance cast gun metal thermostatic mixing valve 22mm BSP	No	5	
131	20mm Elbow tap connector	No	10	
132	20mm Adaptor with male thread	No	10	
<u>ELECTRIC HEAT PUMPS, WATER HEATERS, EXPANSION VESSELS, ETC.</u>				
133	For the complete supply, delivery and installation of 5kW air to water R410 A heat pump type water heater, heating reservoir water to a temperature of between 55 - 60°C, including controller, all safety features, temperature sensor, tube in shell exchanger, High EER Scroll compressor, intergral single circulating pump set with strainer, flow switch, complete with control panel, with maximum noise level of 65dB(A), fittings, copper pipework, insulation, cladding, bends,tees, and necessary accessories as specified. (AIRCO Model 5kW AKRS-RS 50 or other approved)	No	5	
134	For the complete supply, delivery and installation of 200L Kwikot Superline 400 Dual high pressure electric water heater or other approved. Inner cylinder to be 1.6mm steel and thermofused porcelain enamelled for cylinder longevity and hygiene. Including insulation and cladding, pressure and temperature guages, inlet and outlet flanged connections, drain and drain piping, all safety features, supports and all necessary accessories as specified. (KWIKOT DSG-200-5 or other approved)	No	5	
135	10L Hydroboil, 2,4 kW element rating (ZIP or other approved). Unit to be installed in accordance with manufacturers instructions, connected to 15mm cold water supply and electrical power supply, plugged and screwed to wall.	No	2	
136	5L Hydroboil, 1,5 kW element rating (ZIP or other approved). Unit to be installed in accordance with manufacturers instructions, connected to 15mm cold water supply and electrical power supply, plugged and screwed to wall.	No	1	
<u>GAUGES AND FITTINGS</u>				
Carried Forward				R
Bill No. 13 Plumbing and Drainage (Provisional)				

Brought Forward			R
<u>For the supply, delivery and installation of the pressure gauges and fittings in accordance with the project specification and Standard specification for Mechanical Installation.</u>			
137	Heat Pump circulation pumps (delivery side)	No	2
138	Heat Pump circulation pumps (Inlet side)	No	2
139	Hot water return pumps (delivery side)	No	2
140	Hot water return pumps (Inlet side)	No	2
141	Thermostatic Balancing Valves 32mm diameter	No	2
<u>WATER SUPPLIES TO FIRE APPLIANCES</u>			
<u>SABS approved Black Mild Steel pipes including all holderbats and couplings in the running length with welded type fittings to be used. All pipe in wall/floor chases to be wrapped twice in brown Kraft paper. Pipes passing through opening in brickwork or slab shall be coated with DENZO Protective pipe wrapping. All pipes to be painted with one coat primer and two coats signal red.</u>			
142	25mm Pipes (LI)	m	216
143	32mm Pipes (LI)	m	214
144	40mm Pipes (LI)	m	218
145	100mm Pipes (LI)	m	648
<u>Extra over Black Mild Steel pipes for welded type fittings:</u>			
146	25mm Fittings (LI)	No	105
147	32mm Elbow (LI)	No	35
148	32 x 25mm Elbow (LI)	No	15
149	32 x 25mm Reducer (LI)	No	15
150	40mm Elbow (LI)	No	36
151	40 x 32mm Elbow (LI)	No	12
Carried Forward			R
Bill No. 13 Plumbing and Drainage (Provisional)			

Brought Forward				R
152	40 x 32mm Tees (LI)	No	8	
153	40 x 32mm Reducer (LI)	No	9	
154	100mm Elbow (LI)	No	49	
155	100mm Tees (LI)	No	12	
156	100 x 32mm Tees (LI)	No	24	
157	100 x 65mm Tees (LI)	No	1	
158	100 x 80mm Tees (LI)	No	1	
159	100 x 40mm Reducer (LI)	No	8	
160	100 x 80mm Reducer (LI)	No	7	
<u>SUNDRIES TO FIRE WATER SUPPLIES</u>				
161	25mm M1 Union	No	15	
162	25mm Barrel nipples	No	15	
163	25mm Stop valve	No	15	
164	32mm Stop valve	No	8	
165	40mm Stop valve	No	4	
166	100mm Stop valve	No	5	
167	25mm Coupling (LI)	No	15	
168	32mm Coupling (LI)	No	6	
169	50mm Coupling (LI)	No	13	
170	80mm Coupling (LI)	No	1	
171	100mm Coupling (LI)	No	1	
172	65mm Fire hydrant with instantaneous coupling	No	13	
173	100mm Fire hydrant with instantaneous coupling	No	1	
Carried Forward				R
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