

Section No. 2

Bill No. 13

Tiling

COLLECTION

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Bill No. 13

Tiling

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D.S.

204

MB

MB

Cast iron rainwater inlet/outlet drains.

- 10 80mm Diameter and 90 degree bend full bore inlet with domical inlet grating and outlet to 80mm downpipe. With and including 150x150x150mm high purpose made stainless steel grated box over for keeping debris and stone pitching out of the full bores, complete including fixing to roof slabs

No

3

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D.S.S.

206

MF

SANITARY FITTINGS

**The following in WASH HAND BASINS fixed
complete in position and connected to services**

11	Vaal Anzalea Semi-recessed vitreous china wash hand basin, size 510 x 500 x 160mm or similar approved, wall hung with one tap hole and 62mm diameter flange and internal plug, including integrated overflow, bolted to wall with 2No. 10mm bolts (Code: 8448Z000) and sealed with silicon sealant against wall	No	6
12	Cobra shelter vitreous china round wall hung basin, 495mm long x 430mm wide. 1 x pre-punched tap hole in the centre of the basin, including integrated overflow, expansion bolts and 62mm diameter flange and internal plug and installation manual as per manufacturer. (Code: CSHBAWH2-6DT01) Compatible with Cobra round semi-pedestal (measured elsewhere)	No	7
13	Cobra Shelter semi 300 Round semi-pedestal. 270mm side x 308mm high. Wall fixing set and installation manual included. Compatible with Cobra Shelter round wall hung basin (Code: CWLPERD2-6DT01)	No	10
14	Vaal Weaver midi, 450 x 350mm rectangular vitreous china counter top wash hand basin or similar approved, with one tap hole including integrated overflow and sealed with silicon sealant against wall (Code: CWEBIJ41-2CO0400)	No	1
15	COBRA 345/50 bottle trap, 50mm pvc outlet. Includes: 75mm deep re-seal, adjustable telescopic pipe, and 1 1/4" female inlet x Ø 50mm outlet for PVC tube.	No	17
16	COBRA angle regulating valves - COBRA 832/350F. Including 350mm braided flexi hose.	No	34
17	Cobra Nile Standard 15mm chrome plated basin pillar tap, with tapered flow-straightened (Code: FBN1D1NI-0GT0426). Includes: hot and cold indices, 1/2" BSP male inlet, flanged backnut, and streamline outlet for flow aesthetics.	No	5
18	Cobra Metering chrome plated basin pillar tap, self-closing. 1/2 BSP male iron connection end (Code: FPT2A1M2-0GT01)	No	10

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19	COBRA 309-32 "anti-theft" chrome-plate plug includes: 72mm spindle and spindle-locking tab, and 39mm diameter plug.	No	17
20	Cobra Watertech 15mm chrome plated pillar tap (Code: 505-21B/p-WS/6-nolime) with blue indice and elbow action lever, manufactured in accordance with SANS 226:2009 Type 2 (BS 5412).	No	1
21	Cobra Watertech 15mm chrome plated pillar tap (Code: 505-21R/p-WS/6-nolime) with red indice and elbow action lever, manufactured in accordance with SANS 226:2009 Type 2 (BS 5412).	No	1
22	15 mm Castle -or other approved- ballostop	No	34
<u>The following in PARAPLEGIC WHB complete</u>			
23	Cobra shelter vitreous china basin, size 495 x 430 x 190mm with one taphole, including integrated overflow, bolted to wall with two 10mm bolts (code: 8448Z0) and sealed with silicone sealant where basin meets wall.	No	3
24	Cobra Medical pillar type tap - elbow action pillar tap with high waist and blue indice. (Code: FEAPILEA-4FT01)	No	3
<u>The following in WC suite complete</u>			
25	Cobra Welcome white vitreous china, close coupled toilet suite with washdown pan 90° outlet back inlet box rim wall hung pan, with quality thermoset soft-close seat. Can be used with a concealed flush valve. Flush volume 6/3 litres, subject to the pan being installed with a cistern providing an effective 6/3 litre flush volume. Complete with lid fitments and flush pipe elbow or other approved, ball valves to be of brass and SABS 752 to size, plastic ball floats for ball valves to SABS 1006, specifications having closed fronts of size and shape required to fit the pan, each attached to pan with non-ferrous metal fixing bolts, fixing and installation procedures as per Manufacturer's specifications, securely screw fixed by means of suitable approved wall plugs. (Code: CWLCCST1-6DT01)	No	15
26	15 mm Copper (1.2 mm thick) service pipe average 350 mm girth, bent as necessary, including one straight copper to iron fitting (tap)	No	15

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27	15 mm Chromium plated ballostop	No	15
<u>The following in PARAPLEGIC WC Suite complete</u>			
28	Atlas Lecico white vitreous chine, PARAPLEGIC Close-couple set with Grab rails, excluding seat with side flush at raised height. (Code: PARSETCCB0RAIBE)	No	3
29	MDF heavy duty white toilet seat fitted to WC suite complete (Code: CHISEASTD0MDFUC)	No	3
30	15 mm Copper (1.2 mm thick) service pipe average 350 mm girth, bent as necessary, including one straight copper to iron fitting (tap)	No	3
31	15 mm Chromium plated ballostop	No	3

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The following in URINAL complete

- 32 Lecico Atlas BS50 Urinal (ATLBOXUR10T50UE), 300mm wide x 400mm high white vitreous china Top-Entry spreader with wall brackets.
- 33 Walcro Chrome 330UR single bowl Flush master valve & connector, Junior Econoflush front access box, including palm press button, trail pipe, ball-ostop, stainless steel faceplate & chassis and galvanised steel underwall box. SANS 1240. 258mm x 235mm x 135mm (Code DF8-112)

No

4

No

4

The following in SHOWER complete

- 34 Cobra prestex chrome plated single function shower head 1/2" bsp female inlet includes - shower head with ball joint connector. Water saving : flow restricted to 7.5l/min . Supply and fit 061cp-classic diverter: classic 4 way diverter :2x3/4 bsp female inlets ,1x1/2 bsp female shower outlet and .: includes diverter body exposed parts 2 position under tile diverter with adjustable bell cover and switch lever. (Code: FSWHR101-0GT0156)
- 35 Cobra chrome plated shower arm with flange. 110mm Throw. G1/2M x G1/2M brass construction. (Code: FSACAR10-0GTPP0150)
- 36 Cobra Nile or similar approved shower mixer, waste pipes and fittings complete as per architect specifications (Code: SKU: FSWM1CNI-0GT0426)
- 37 110 x 110mm Lola square shower waste with removable stainless steel grating
- 38 900 x 900 x 1850mm High Chrome with glass infill, corner entry shower frame
- 39 1850mm High Chrome with glass infill, pivot shower door
- 40 1850mm High Chrome with glass infill, single-slide shower door

No

6

No

6

No

6

No

6

No

1

No

4

No

1

STAINLESS STEEL (340 (18/10)) WASH HAND BASINS, WC SUITES, ETC

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The following in BATH/SHOWER complete

- 41 Princess-N rectangular steel enamel bath size 1 700 x 700 x 450mm wide with 40 mm chrome outlet and grating, 32mm Diameter domed pop-up waste, chrome plated brass Cobra code 320 bath overflow complete, including fixing in position and building in. (Code: A2209G0001)
- 42 Cobra Nile wall mounted diverter bath mixer (Code: FBHEW2NI-0GT0426)
- 43 Grohe Vitalio Start 100 hand shower, Vitalio Universal wall shower holder, non-adjustable shower hose, VitalioFlex trend 1750mm 1/2 x 1/2 GROHE Eco-joy 5.7 litre/min flow limiter, GROHE DreamSpray perfect spray pattern with a recommended pressure 1.0 bar 5 colour packaging (Code: G-27950000)
- 44 350 x 350 x 3 mm Mild steel access panel fixed with 6 x 4 mm diameter selftapping screws onto 50 x 50 x 3 mm mild steel angle section mitred, framed and welded frame plugged to brickwork
- 45 Walcro metering Shower rose W-CIRS-V2 with 150NHS shower valve with extension and all accessories, or similar and approved. Mounted min 2400mm above FFL. Connect 38mmØ stainless steel or brass outlet to wastewater system with the trap outside the Cell

No	2
No	2
No	2
No	3
No	3

The following in WC suites fixed complete in position and connected to services (refer to 5 Star Specification : 2012)

- 46 "OVE Model OSPA1" or other approved vandal proof wc pan (concrete filled) manufactured from 1,2mm grade 304 AISI (18/10) stainless steel; fully welded and polished to a no. 4 satin finish; 485 x 390 x 435mm high with circular flushing rim and bowl, full flow "P" trap, 38mm diameter supply flush pipe; both sufficient length to protrude the wall. (All connections to be outside). Integral 35mm wide fixing flange to bottom sides and top 7 times bolted to wall and floor complete with expanded metal mesh for mechanical bond for plaster/screed to the pan flange (POL2012/S1)

No	5
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47 "WALCRO No 104" or other approved brass back entry non hold open toilet flush valve with integral vacuum breaker and modified push-rod connector, complete with 38mm diameter flushpipe, bend and pan connector (POL2012/S1)

No

5

48 Prison type "ECONOFLUSH" as type KF3.404 including elbow, straight pipe and pan connector (POL2012/S1)

No

5

The following in DRINKING FOUNTAIN complete

49 "OVE Model OSBA1/125" or other approved vandal proof hand wash basin, manufactured from 1,2mm grade 304 AISI (18/10) stainless steel; fully welded and polished to a no. 4 satin finish; 340 x 350 x 125mm, full flow "P" trap, 38mm diameter supply flush pipe; both sufficient length to protrude the wall. (All connections to be outside). Including a fitted 15mm timed push-button tap mounted at top with 38mm CP brass waste outlet, built flush into brick wall and secured with steel lugs

No

5

Sinks, washtroughs, etc.

50 "Franke Quiline QLX 621-120" Grade 304 (18/10) 1,2mm thick stainless steel model Oval A wash hand basin size 1 200 x 500mm with pressed bowl, with two tapholes, 90mm basket strainer kitchen sink waste fittings, (Code 357456) excluding waste four times bolted to wall with M6 expansion bolts. (Code: 1990007)

No

2

51 "Franke Quiline QLX 611" Single bowl, Grade 304 (18/10) 1,2mm thick stainless steel model Oval A wash hand basin size 900 x 500mm with pressed bowl, with one taphole, 90mm basket strainer kitchen sink waste fittings, (Code 357456) excluding waste four times bolted to wall with M6 expansion bolts. (Code: 1990003)

No

6

52 "Franke" S2 Catering Stainless Steel Sink Double bowl, Grade 304, 1,2mm thick with a 150mm high integral splash back to the rear and 50 x 10mm turndown with a beaded edge on the remaining sides. Sink with pressed 500 x 500 x 230mm deep bowl with a 40mm waste outlet. The underside sprayed with vermin proof bitumastic sound deadening and supported with a 30x30x3mm framework and galvanised mild steel backing sheet. Unit fixed 900mm high from the top of the front apron to the finish floor level with anchor bolts (bolts specified elsewhere) and fixing legs

No

1

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53	Cobra Star heavy pattern, 15mm Chrome plated one Hole sink mixer with overarm swivel spout, Mounting kit and Flexible Connection Tubes (3396/ST). Includes: aerated swivel outlet, 1/2" BSP female inlets, mounting kit, and 2 x 1/2" female iron 400mm long flexible inlets. SANS 226 Type 2, DZR brass.	No	12
54	"Franke" Saturn Arc or similar approved Stainless steel sink mixer deck type with swivel spout.	No	8
55	Cobra Watertech 40mm Chrome plated unslotted basin waste union (no chain or stay) (317-40). Includes: 70mm diameter flange, 45mm long shank, and 1 1/2" BSP male outlet connection.	No	9
56	COBRA 309-32 "anti-theft" chrome-plate plug Includes: 72mm spindle and spindle-locking tab, and 39mm diameter plug.	No	9
57	COBRA 365/50 bottle trap, 50mm, pvc outlet Includes: a high specification polymer-blend body component, 75mm deep re-seal and adjustable telescopic pipe, and 1 1/2" female inlet x Ø 50mm outlet for PVC tube.	No	9
58	COBRA angle regulating valves - COBRA 832/350F. Including 350mm braided flexi hose.	No	18
59	50 mm Deep seal "P" or "S" trap	No	9
<u>Slop Hopper, etc.</u>			
60	"Basterfield" B22340 Wall mounted drip sink, Grade 304 (18/8) 1,2mm thick stainless steel with 150mm splash back, mounted on gallows brackets or legs	No	1
61	Cobra FJ2.210 Flushmaster Junior flushvalve set	No	1
62	Cobra Watertech Stella 15mm chrome Chrome plated extended bibtap (3306ST/EXT-15). Includes: hot and cold indices, 1/2" BSP male inlet, sliding wall flange, and flow straightener for flow aesthetics.	No	2

PRECAST CONCRETE WASH TROUGHS

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Precast Concrete wash troughs cast from minimum 30MPa concrete. Installed on 2 x standard concrete leg supports. top of trough to be at 900mm AFFL

63 685mm x 320mm x 600mm Deep single bowl pre-cast concrete wash trough, including 40mm waste or sized to suit trough, with plug and stay

No

3

64 1065mm x 320mm x 600mm Deep double bowl pre-cast concrete wash trough, including 2 x waste, 40mm or sized to suit trough, with plug and stay

No

4

TAPS. VALVES. ETC.

Brass

65 15mm Stopcock

No

5

66 22mm Stopcock

No

4

ELECTIC WATER HEATERS

"Approved"

67 "FRANKE" or other approved stainless steel 10 litre Hydro boil complete

No

4

68 150 Litre horizontal high pressure electric water heater

No

6

69 Drip tray to suit 150 litre horizontal geyser with 100mm high upstand with top edge bent over all round including 50mm diameter overflow pipe 3000mm long approximately 3m above ground level

No

6

SANITARY PLUMBING

PIPES. ETC.

uPVC pipes

70 50mm Pipes

m

138

71 110mm Pipes

m

18

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Plumbing and Drainage

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Extra over uPVC pipes for fittings

72	50mm Bend	No	92
73	110mm Bend	No	18
74	50mm Junction	No	41
75	110mm Pan connector	No	18
76	50mm Access bend	No	46
77	50mm Access junction	No	41
78	110mm "GI Two-way" vent valve	No	18

LAGGING

25mm Thick fibre glass insulation wrapped around pipes and fittings including straps, etc.

79	15mm Pipes	m	211
80	22mm Pipes	m	235

Taps, valves, etc.

81	15 mm Brass bib tap heavy pattern low resistance with hose connection and 1/2" threaded outlet	No	21
82	25mm Brass stop valve	No	2

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Plumbing and Drainage

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TESTING, ETC.

- 83 Provide all necessary apparatus, water, etc. for and test the internal drainage system to the satisfaction of the Representative/Agent
- 84 Provide all necessary apparatus, water, etc. for and test the internal hot and cold water and fire reticulation to the satisfaction of the Representative/Agent

Item

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Plumbing and Drainage

USS

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1	Mirror 600 x 1100 mm high with four screws
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Glazing

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MB

	Unit	Quantity	Rate	Amount
SECTION NUMBER 2				
BILL NUMBER 16				
PAINTWORK				
JBCC Work Group No. 152				
SUPPLEMENTARY PREAMBLES				
For Preambles see "PW371 - Specification of Materials and Methods to be used"				
PAINTWORK, ETC TO NEW WORK				
ON FLOATED PLASTER				
<u>Prepare and apply one undercoat of Plascon plaster primer and two coats Plascon Professional superior low sheen "Light Grey/ivory" wall paint or other approved</u>				
1	m2	4 888		
<u>Prepare and apply one undercoat of Plascon plaster primer and two coats Plascon oil-based low-gloss eggshell enamel "Light Grey/ivory" wall paint or other approved</u>				
2	m2	612		
<u>Prepare and apply two coats Plascon Brickseal (WBS1) Thermoplastic brick dressing or other approved</u>				
3	m2	1 168		
<u>Prepare and apply "Marmoran" in deep blue coulor, applied strictly according to manufacturer's specifications or other approved</u>				
4	m2	125		
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Paintwork				

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Section No. 2
Bill No. 16
Paintwork

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5	<u>Prepare for and apply one acrylic fillercoat and two coats teflon based durable low sheen pure acrylic paint with good scrub resistance</u>	m2	475
6	<u>Prepare for and apply one alkali Burn resistant primer as type PP950 and one coat universal undercoat and two coats oil-based low-gloss eggshell enamel paint to architects colour, with and including Flowcrete Flowseal EPW AF (see specification of flowcrete - system 2 complete).</u>	m2	289
	On concrete ceilings "LI"		
	On concrete ceilings "LI"		

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Bill No. 16
Paintwork



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MB

ON FIBRE CEMENT

One coat universal plaster primer and two coats PVA acrylic paint

7 On ceilings "LI"

m2 426

8 On fascias and barge boards "LI"

m2 431

One undercoat detergent and paint one coat "Eggshell" paint or other approved

9 On window cills not exceeding 300mm wide "LI"

m 131

PAINT ON METAL

One coat Glatex 8 metal primer (PL3) and apply two coats Glatex 8 finishing coats or other approved on:

10 Doors "LI"

m2 19

11 Door frames "LI"

m2 125

12 On cell and safe door and frames "LI"

m2 6

13 On gates, grilles, burglar screens, balustrades, etc. (both sides measured over the full flat area) "LI"

m2 97

14 On steel columns, beams, base plates, etc "LI"

m2 499

ON WOOD

One coat "Spick & Span Oil Based Wood Primer (UC2)" under coat and two coats "Plascon Velvaglo Polyurethane Velvet Enamel (VLO)" paint or other approved

15 On doors "LI"

m2 336

Three coats polyurethane clear varnish

16 Skirtings and mouldings not exceeding 300mm girth "LI"

m 180

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Paintwork

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Paintwork

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Open face excavation in earth over sloping site:

- 6 In bulk excavations to reduce levels and cut and form platforms, including setting aside for later re-use or removal.

m3 6 474

Extra over bulk excavation in earth for excavation in:

- 7 Soft rock.

m3 324

- 8 Hard rock.

m3 324

Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 95% or 100% in the case of sand:

- 9 Over site to form platforms, etc.

m3 4 334

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Bill No. 1
Site works and Paving (Provisional)

X

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MP

ROADS, PAVINGS, ETC.,

EXCAVATION, FILLING, ETC

Excavation under paving not exceeding 300mm deep

10 Under floors

m3 3 188

Earth filling supplied by the contractor compacted to 95% Mod AASHTO density

11 150mm Thick Grade G2 Material and compacted to 98% Mod AASHTO

m3 150

12 150mm layers of G5 Material and compacted to 95% Mod, The G5 should be the form of a sugar dolerite, decomposed granite or decomposed sandstone

m3 1 071

13 150mm layers of G6 Material and compacted to 95% Mod, The G6 should be the form of a sugar dolerite, decomposed granite or decomposed sandstone

m3 958

Base course constructed of filling supplied by the Contractor:

14 Base course under paving areas of C4 material (G5 chemically stabilised with 4% cement) Sub-base layer in accordance with SABS 1200 DM compacted to 95% modified AASHTO density.

m3 1 817

Compaction of surfaces:

15 Compaction of ground surface under pavings, roads, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density and 100% Mod AASHTO for sand.

m2 6 555

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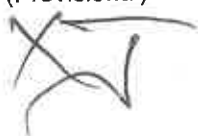
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<u>Coarse river sand filling supplied by the Contractor</u>				
16	Under paving	m3	585	
<u>Asphalt layer on filling</u>				
17	40mm Thick continuous graded asphalt (AC) compacted to 92% Marshall Maximum Theoretical density	m2	1 000	
<u>PRECAST CONCRETE PAVING BLOCKS</u>				
<u>WEED KILLER</u>				
<u>Approved weed killer in strict accordance with manufacturers instructions</u>				
18	Under paving, etc	m2	8 626	
<u>PAVING</u>				
Paving to be laid in accordance with SABS 1200 MJ, SABS 1058 and the Concrete Masonry Association's specifications				
<u>Paving of 60 mm interlocking clay paving bricks of approved colour with butt joints on 20 mm thick river sand bed (elsewhere measured)</u>				
19	Paving in herringbone bond pattern to falls	m2	3 071	
20	Extra over for straight edge blocks	m	1 629	
<u>Paving of 80 mm interlocking concrete paving bricks of approved colour with butt joints on 20 mm thick river sand bed (elsewhere measured)</u>				
21	Paving in stretcher bond to falls	m2	5 555	
<u>19-25mm crushed stone aggregate raked and levelled not exceeding 200mm thick applied in accordance to manufactures specifications</u>				
22	Crushed stone raked and levelled	m2	12	
<u>PRECAST KERBS</u>				
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Bill No. 1
Site works and Paving (Provisional)



Precase concrete finished smooth on exposed surfaces including bedding, cutting and pointing:

23	Kerb (SABS927 fig 12) with 45 x 125mm unreinforced concrete footing, 250 x 250mm triangular concrete haunching at back of each joint and 300 x 150mm concrete infill in front with cement grouted joints, including excavation, backfilling, etc.	m	1 939
24	Ditto, Kerb (SABS 927 fig 12) but circular on plan not exceeding 4m radius formed with short lengths of straight kerb.	m	137
25	Kerb (SABS927 fig 12) with 45 x 125mm unreinforced concrete footing, 250 x 250mm triangular concrete haunching at back of each joint and 300 x 150mm concrete infill in front with cement grouted joints, including excavation, backfilling, etc.	m	112
26	Ditto, Kerb (SABS 927 fig 12) but circular on plan not exceeding 4m radius formed with short lengths of straight kerb.	m	6
27	Cast In-Situ concrete edge beams of Class 20/19 with cement grouted joints, including excavation, backfilling, waterproofing etc.	m3	76

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Site works and Paving (Provisional)

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RETRO-REFLECTIVE ROAD SIGNS, ETC.

Road signs and road markings shall conform to the requirements given in the South African Road Traffic Manual and relevant SABS specifications.

The rate tendered for road signs shall cover the cost of supplying and erecting the completed signboard supports, face, frame and fixing brackets and shall include the cost for providing retro-reflective backgrounds, symbols, characters, legends and borders of the type specified in the South African Road Traffic Manual. The tendered rate shall include for excavations, backfilling and concreting of sign supports.

- 28 900mm Diameter regulation "DISABLED PARKING SYMBOL" sign (R323) in accordance with S.A.B.S. standard fitted and fixed on creosoted pole, 2 700mm high bedded in 450 x 450 x 600mm deep concrete footing, included all necessary excavation, etc.

No 1

STORMWATER DRAINAGE

Class 100D concrete pipes:

- 29 450mm Pipes laid in and including trenches not exceeding 1m deep.
- 30 450mm Pipes laid and including trenches exceeding 1m and not exceeding 2m deep.
- 31 450mm Pipes laid in and including trenches exceeding 2m and not exceeding 3m deep.

m 52

m 206

m 12

Sundries:

- 32 Extra over excavation in earth for pipe trenches, chambers, etc. for excavation in soft rock.
- 33 Extra over excavation in earth for pipe trenches, chambers, etc. for excavation in hard rock.

m3 15

m3 15

The following in headwall:

- 34 Excavate not exceeding 2m deep.
- 35 Cart away surplus material to a suitable dumping site located by the Contractor.

m3 64

m3 38

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Site works and Paving (Provisional)

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36	Reinforced concrete (20MPa) in bases.	m3	2
37	Set of three concrete baffle ribs to top of base size 50 x 25mm high and average 900mm long.	No	4
38	Rough formwork to edge not exceeding 300mm high.	m	26
39	Type 193 fabric reinforcement to bases.	m2	13
40	One brick walls.	m2	12
41	Plaster on brick walls.	m2	24
42	Plaster on narrow widths.	m2	5

INSPECTION CHAMBERS, MANHOLES, ETC.

Precast concrete circular inspection chambers (covers elsewhere):

43	Inspection chamber 1000mm diameter and exceeding 1250mm and not exceeding 1500mm deep internally.	No	2
44	Inspection chamber 1000mm diameter and exceeding 1500mm and not exceeding 1750mm deep internally.	No	1
45	Inspection chamber 1000mm diameter and exceeding 1750mm and not exceeding 2000mm deep internally.	No	2

Sumps, catchpits, inspection chambers, etc (gratings and covers elsewhere):

The following in catchpits, manholes, etc. of 100mm thick 25Mpa/20mm concrete base, one brick walls in NFX hardburnt clay bricks rendered internally, and including 3:1 cement benching, excavations, part return and compact and carting away, etc.

46	Catchpit 600 x 600mm and exceeding 1000mm and not exceeding 1250mm deep internally.	No	1
47	Catchpit 600 x 600mm and exceeding 1250mm and not exceeding 1500mm deep internally.	No	3
48	Catchpit 600 x 600mm and exceeding 1500mm and not exceeding 1750mm deep internally.	No	3
49	Catchpit 600 x 600mm and exceeding 2000mm and not exceeding 2250mm deep internally.	No	1

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MB

50 Kerb inlet Catchpit 3600 x 1200mm and exceeding 1000mm and not exceeding 1250mm deep internally.

No

7

Gratings, covers, etc:

51 40mm Thick precast manhole lid.

No

5

52 600 x 600 x 60kg Dished cast iron grating set in mortar

No

8

53 Cut-off Drain with RS40 banded mentis grating with and including 40x5.5 bearer bars, complete with all angle support, lugs etc. (surface bed and masonry elsewhere) see engineers drawing 3855 at the back of the bill of quantities

m

89

The following in soakaways, french drains, etc:

54 Selected 200-300mm "Hand Stone" filling.

m3

34

55 2.5mm thick Galvanised and PVC coated wire mesh laid over soak away for reno mattress and Gabion Baskets.

m2

176

56 Risk of collapse to sides of soakaway excavations not exceeding 1,5m deep.

m2

37

57 Extra over soakaway excavations for carting away surplus material from excavations to a dumping site to be located by the contractor.

m3

48

58 Earthfilling obtained from excavations or stock piles on site compacted to 93% backfilled to soakways.

m3

7

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LOFFELSTEIN RETAINING WALLS

Loffelstein TB300 Type blocks in Retaining walls

- 59 For block retaining walls - Design, supply and construct concrete block walls @ minimum 80 degrees (approved by the engineer in writing with slider panel to close the top row of blocks) varying in height from 1m to not more than 5m high, complete including foundations, blocks, all required geotextiles, wick drains or similar drainage behind wall, concrete canal on top of wall, backfill behind wall with material available on site and all other appurtenances. Allow 5% cement stabilized backfill (1m wide, full depth) in cut areas. Contractor shall provide a certified design for approval before commencing with any of the block walls.

m2 268

- 60 Earthfilling obtained from excavations or stock piles on site compacted to 93% backfilled to retaining walls.

m3 340

Sub-soil drains.

- 61 110mm uPVC slotted drainage pipe laid in and including trench exceeding 4.00m and not exceeding 5m deep with 500 x 500mm washed 25mm stone casing and wrapped in u24 non-woven, spun-bonded, punched continous polyyster fabric, including part return, ram, carting away, etc.

m 353

ALUMINIUM FLAGPOLE

The following in a 8 85m high Standard Government type Aluminium Flagpole as "Aluweld" or other approved and erected on 600 x 600 x 800mm deep Class C concrete base incl excavations, carting away, etc.

- 62 8,85mm High flagpole comprising 130mm and 60mm outside diameter aluminium tubing tapered by way of an aluminium cone casting, welded and complete with spherical top cap, two pulleys, two cleats, two halyards (ropes), four flagrope clamps, swivel type base with four M20 x 550mm long anchorbolts for fixing flagpole baseplate including concrete base (Base size 1500 x 1500 x 550mm deep)

No 2

LANDSCAPING

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<u>Ground preparation</u>			
63	Cultivation, fine grading and preparation of areas to be planted	m2	1 725
<u>Topsoil, compost, lime and fertilizer</u>			
64	Topsoil supplied by the contractor in plant beds, grassed areas and holes for trees, shrubs, etc	m3	51
65	Compost supplied by the contractor in plant beds, grassed areas and holes for trees, shrubs, etc	m3	75
66	Bark-chip Mulch supplied by the contractor in plant beds, grassed areas and holes for trees, shrubs, etc	m3	23
67	3:1:8 slow release organic fertilizer supplied by the contractor in plant beds, grassed areas and holes for trees, shrubs, etc	kg	166
68	Super phosphate fertilizer supplied by the contractor in plant beds, grassed areas and holes for trees, shrubs, etc	kg	121
69	"Kikuyu" sods approximately 80mm thick	m2	590
<u>Trees</u>			
70	Combretum erythrophyllum (50L)	No	4
71	Kirkia acuminata (50L)	No	11
72	Heteropyxis natalensis (50L)	No	10
73	Bolusanthus speciosus (50L)	No	12
74	Aloe marlothii (10L)	No	11
75	Euphorbia tirucalli (10L)	No	14
76	Adenium multiflorum (10L)	No	6
<u>Mixed flowering shrubs and groundcovers</u>			
77	Tulbaghia violaceae (128m2 @ 7 plants/m2) 4L	m2	128
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MB

78	<i>Aptenia cordifolia</i> (450m2 @ 9plants/m2) 2L	m2	450
79	<i>Delospermum lydenburgense</i> (48m2 @ 6 plants/m2) 2L	m2	48
80	<i>Crassula capitella</i> 'campfire' (48m2 @ 6plants/m2) 2L	m2	48
81	<i>Bulbine frutescens</i> (48m2 @ 6 plants/m2) 2L	m2	48
82	<i>Aristida junciformis</i> (54m2 @ 5 plants/m2) 2L	m2	54
83	<i>Melinis repens</i> (54m2 @ 5 plants/m2) 2L	m2	54
84	<i>Chlorophytum comosum</i> (25m2 @ 8 plants/m2) 2L	m2	25
85	<i>Sansevieria aethiopica</i> (25m2 @ 5 plants/m2) 4L	m2	25
86	<i>Plectranthus verticillatus</i> (25m2 @ 8 plants/m2) 2L	m2	25
87	<i>Plumbago auriculata</i> (230m2 @ 2 plants/m2) 2L	m2	230
88	Hydroseeding of Endemic veld grass seed mix	m2	8 825
<u>Decorative edging, rocks, pebbles etc.</u>			
89	Dumprock of sandstone colour, 200mm thick in plant beds with and including a bidim layer to bottom	m2	60
90	Pebbles of sandstone colour, 150mm thick in plant beds with and including a bidim layer to bottom	m2	50
91	"Vanstone" or other approved Garden Edging Key Kerb with 45 x 125mm unreinforced concrete footing, 250 x 250mm triangular concrete haunching at back of each joint and 300 x 150mm concrete infill in front with cement grouted joints, including excavation, backfilling, etc.	m	290

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10 SS 234

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Maintenance

- 92 Allow for maintaining grassing, trees, flowering etc. for a period of 3months, including watering, weeding, cutting, replacing dead plants, etc.

"WILSON STONE" or other approved fixtures

- 93 1800mm precast concrete bench, such as Wilson Stone* Turin Bench or equal, smooth Grey
- 94 1800mm precast concrete rest set, such as Wilson Stone* Turin Rest Set or equal, smooth Grey
- 95 450x450x770h mm precast concrete bin, such as Wilson Stone* the Turin, smooth Grey finish, including fibreglass canopy
- 96 1250mm AE precast concrete tree ring, such as Wilson Stone* the Car Park Tree Ring, smooth Grey finish
- 97 200 x400 x1175h mm precast concrete Drinking fountain, such as Wilson Stone* Clifton Drinking Fountain or equal approved
- 98 WALCRO* 109 DRINKING FOUNTAIN DEMAND FAUCET TAP CP 15mm

Item

No

5

No

5

No

6

No

12

No

1

No

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Item
No

Unit

Quantity

Rate

Amount

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BILL NUMBER 2

**WATER SUPPLY AND FIRE SERVICES
(PROVISIONAL)**

JBCC Work Group No. 148

WATER SUPPLIES

Note:

Rates for piping, etc., have to include all adaptors, flanges, etc.

General

Where ever possible, abridged descriptions have been used for those items in this Bill which appear under the main trade headings in previous/subsequent Bills. The full descriptions of these items in the Preambles, as referred to above, to the various trade bills are to, and do apply equally to this Section.

Reference

Special reference is made to SABS 1200 specifications for civil works.

Special reference is made to Specifications and details of Department of Public Works Drainage Detail (December 1998).

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Water supplies (Provisional)

1055 237

NYS

Protection of existing services

The contractor must make allowance against the relevant items for the following:

- (a) Necessary care to be taken when excavating near existing services in or across the path of excavations.
- (b) Protection and maintaining such service in operation by means of temporary support or shoring as necessary.
- (c) Delays and disruption of the progress of the work due to the existence of the service.
- (d) Repairs necessitated by damage caused by the Contractor.

SABS specifications references

Where reference is made to SABS 1200 specifications (all sections) it will be deemed to exclude clause 8 "Measurements and Payment".

Nature of ground

The tenderer must acquaint himself with the material to be excavated in and are requested to study the Geotechnical Survey Report attached to Part C4: Site Information of the procurement document

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.

Prescribed tests

All prescribed tests are to be executed by an approved, accredited laboratory

Concrete pipes

Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings

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Polypropylene pipes

Polypropylene pipes 42 mm diameter and under shall be seamless copper coloured class 16 pipes jointed with brass compression fittings as designed for use with copper pipes as stated.

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.

All pipe diameters are to match sizes as utilised for copper pipes.

Polyethylene pipes

Polyethylene pipes 75 mm diameter and under up to 42 mm shall be seamless copper coloured class 16 Type IV HDPE pipes jointed with polymer 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.

All pipe diameters are to match sizes as utilised for copper pipes.

C.O.D. Fibre Cement Pressure Pipes

Pipes shall be jointed with "Triplex" couplings. A lubricant (soft soap) is to be used in connecting the couplings to the pipe or fittings. The couplings are to be unsupported on the bedding when pipes are laid.

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.

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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.

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing". In case of pipes with diameters not exceeding 60 mm 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 case of pipes with diameters exceeding 60 mm all sizes are given and no claim for extra bushes, reducers, etc., will be entertained.

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley 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/Engineer thereof prior to backfilling.

"Soft rock" and "hard rock" shall be as defined in "Earthworks".

Saddles

Saddles to be the Magnum uPVC type with stainless steel bolts and screw pieces complete with Talbot lockable clamp and compression external screw-thread adaptor.

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uPVC pressure pipes and fittings

Pipes for water supply shall be of the class stated.

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

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

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley 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 "Earthworks"

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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 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 pipes, fittings and specials

Pipes of Nominal Bore up to 150 mm:

Substitute "screwed" in L3.4.2 with "flanged".

Pipes of Nominal Bore over 150 mm:

Add the following:

"All mild steel pipes must be manufactured from Grade B steel with minimum plate thickness of 6,0 mm except where specified otherwise."

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Corrosion protection

Cast Iron Pipes and Fittings:

Substitute L3.9.1 with the following:

"All internal surfaces shall be grit blasted to SA 2½ standard and then coated with Copon EP 2300 epoxy paint to a minimum thickness of 350 micron."

Joints, Bolts, Nuts and Washers:

Substitute L3.9.5 with the following:

"All joints, bolts, nuts and washers shall be cadmium-plated or stainless steel."

Rates

Rates for pipe items are to be all inclusive prices and rates (except where allowed for elsewhere) are for the completed work as described in the respective items and shall include all labour, pipes, **bedding and filling complete in layers not exceeding 300 mm (unless otherwise specified) and compacted** all sundry work, equipment cost, guards, lighting, profit and maintenance.

Under paved areas and buildings the sand bedding and filling must be stabilised with 4 % cement.

Rates for inspection chambers, etc., are to be all inclusive prices and rates (except where allowed for elsewhere) for the completed work as described in the respective items and shall include all labour, pipes, concrete-floors and slabs, brickwork, plastering, compacting, all sundry work, equipment cost, guards, lighting, profit and maintenance.

The Contractor is referred to Drawing no's 208640VSO/15 to 17 annexed to these Bill of Quantities.

Pipework, fittings, etc.

All underground steel pipes and fittings, after installation, shall be protected against corrosion according to PSL 1.2

Maintenance period

The maintenance period for the following work shall be 12 calendar months.

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**High density polyethylene class 16 piping
complying with SABS 533 Part III**

1	32 mm Pipes laid in and including trenches not exceeding 1000 mm deep	m	3
2	40 mm Pipes laid in and including trenches not exceeding 1000 mm deep	m	234
3	63 mm Pipes laid in and including trenches not exceeding 1000 mm deep	m	95
4	110 mm Pipes laid in and including trenches not exceeding 1000 mm deep	m	227

**High density polyethylene class 16 piping
complying with SABS 533 Part III**

5	63 mm Pipes laid in and including trenches not exceeding 1000 mm deep	m	108
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The following in HDPE compression (16 Bar) fittings

6	32 x 20 Reducer	No	2
7	32 x 90° Elbow	No	2
8	32 x 32 Equal Tee	No	2
9	32 un-Equal Tee	No	2
10	40 x 90° Elbow	No	7
11	40 x 32 Reducer	No	2
12	40 x 22 Reducer	No	5
13	40 x 40 Equal Tee	No	2
14	63 x 63 Euqual Tee	No	1
15	63 x 90° Elbow	No	4
16	63 x 40 Reducer	No	4
17	110 x 110 Euqual Tee	No	2
18	110 un-Equal Tee	No	2

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19	110 x 90° Elbow	No	7
20	110 x 63 Reducer	No	3
<u>The following in valves, etc</u>			
21	32mm Stainless steel sluice/gate valve with teflon seat	No	3
22	40mm Isolating valve	No	7
23	40mm In-line strainer	No	3
24	40mm Non-return valve	No	3
25	40mm adjustable pressure reducing valve set to 4.0BAR	No	5
26	40mm Stainless steel sluice/gate valve with teflon seat	No	3
27	63mm Non-return valve	No	3
28	63mm In-line strainer	No	2
29	63mm Isolating valve	No	3
30	63mm adjustable pressure reducing valve set to 4.0BAR	No	2
31	110mm Isolating valve	No	2
<u>The following in Valve Chamber</u>			
32	Standard valve chamber size 337 x 337 x 390mm high comprising of Class 25/19 concrete footing and collar, with 200mm diameter Class B COD fibre cement pipe vertically into ground and covered with Besaans-du Plessis size 115mm diameter x 102 Type 7 stopcock box cast into concrete collar	No	18
<u>Sundries</u>			
33	Cut into existing HDPE pipe in ground and connect new 110mm HDPE water pipe	No	1.00

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BOREHOLE

Borehole

34 Allow the PC amount of Two Hundred and Sixty Thousand Rand (R 260 000.00) for Borehole complete

Item

260 000.00

35 Allow for profit and attendance

Item

TESTING :

36 Allow for testing the whole of the water reticulation system and for any re-testing necessary after taking out and replacing any defective work to the satisfaction of the Representative.

Item

EMERGENCY WATER TANK

REINFORCED CONCRETE

37 Concrete base and beams for water tank

m3

20

GENERAL FORMWORK

Smooth formwork to sides and soffits of

38 Up stand Ground Beams for tank support "LI"

m2

35

39 70mm chamfered edge to ground beams "LI"

m

70

REINFORCEMENT (Provisional)

Mild steel reinforcement

High tensile steel reinforcement

40 8mm-25mm Diameter rods

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SOIL DRAINAGE (PROVISIONAL)

SUPPLEMENTARY PREAMBLES

Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or other approved may be used with prior approval from the architect

JBCC Work Group No. 146

REPAIR OF SEWER INFRASTRUCTURE

Sewer pipe repairs, all pipe and fittings to be checked with Engineer before installing

Free Flow uPVC drain pipes including bedding, backfilling and compacting of pipe trenches

- | | |
|---|---|
| 1 | 160mm Pipe and excavations not exceeding 1m deep |
| 2 | 160mm Pipe and excavations exceeding 1m and not exceeding 2m deep |
| 3 | 160mm Pipe and excavations exceeding 2m and not exceeding 3m deep |

Unit	Quantity	Rate	Amount
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<u>Extra over Free Flow uPVC pipe for fittings</u>			
4	160mm Bend	No	24
5	160mm Access bend	No	11
6	160mm Access junction	No	6
7	160mm Rodding eye	No	6
8	160mm Gulley P-trap	No	3
<u>Sundries</u>			
9	15MPa/19mm Mass concrete encasing around 160mm horizontal drain pipe including all necessary formwork	m	15
<u>Sundries</u>			
10	Extra over excavations to trenches, holes, etc., for excavations in soft rock	m3	16
11	Ditto, but hard rock.	m3	16
12	Imported sand in bedding and surround to pipework well compacted in layers, including any additional excavation, risk of collapse, etc	m3	33
13	Keeping excavations free of water		Item
<u>Precast concrete circular manholes</u>			
14	Standard precast manhole, 1 050 mm internal diameter exceeding 1 000 mm and not exceeding 1 250 mm deep internally complete with precast concrete rings, cover slab, double seal cast iron manhole cover and frame (SABS 558 Type 2A heavy duty in roads and Type 8A medium duty elsewhere), unreinforced concrete footing and benching in bottom, dished down to channels and finished smooth with plaster.	No	2
15	Standard precast manhole, 1 050 mm internal diameter exceeding 1 250 mm and not exceeding 1 500 mm deep internally complete with precast concrete rings, cover slab, double seal cast iron manhole cover and frame (SABS 558 Type 2A heavy duty in roads and Type 8A medium duty elsewhere), unreinforced concrete footing and benching in bottom, dished down to channels and finished smooth with plaster.	No	1

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- 16 Standard precast manhole, 1 050 mm internal diameter exceeding 1 500 mm and not exceeding 1 750 mm deep internally complete with precast concrete rings, cover slab, double seal cast iron manhole cover and frame (SABS 558 Type 2A heavy duty in roads and Type 8A medium duty elsewhere), unreinforced concrete footing and benching in bottom, dished down to channels and finished smooth with plaster.
- 17 Standard precast manhole, 1 050 mm internal diameter exceeding 1 750 mm and not exceeding 2 000 mm deep internally complete with precast concrete rings, cover slab, double seal cast iron manhole cover and frame (SABS 558 Type 2A heavy duty in roads and Type 8A medium duty elsewhere), unreinforced concrete footing and benching in bottom, dished down to channels and finished smooth with plaster.
- 18 Standard precast manhole, 1 050 mm internal diameter exceeding 2 000 mm and not exceeding 2 250 mm deep internally complete with precast concrete rings, cover slab, double seal cast iron manhole cover and frame (SABS 558 Type 2A heavy duty in roads and Type 8A medium duty elsewhere), unreinforced concrete footing and benching in bottom, dished down to channels and finished smooth with plaster.
- 19 Standard precast manhole, 1 050 mm internal diameter exceeding 2 250 mm and not exceeding 2 500 mm deep internally complete with precast concrete rings, cover slab, double seal cast iron manhole cover and frame (SABS 558 Type 2A heavy duty in roads and Type 8A medium duty elsewhere), unreinforced concrete footing and benching in bottom, dished down to channels and finished smooth with plaster.
- 20 Standard precast manhole, 1 050 mm internal diameter exceeding 2 500 mm and not exceeding 2 750 mm deep internally complete with precast concrete rings, cover slab, double seal cast iron manhole cover and frame (SABS 558 Type 2A heavy duty in roads and Type 8A medium duty elsewhere), unreinforced concrete footing and benching in bottom, dished down to channels and finished smooth with plaster.

No

3

No

3

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2

SEPTIC TANK AND SOAK AWAY.

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<u>The following in septic tank and soak away, as per "CALCAMITE" or other approved</u>			
21	33500 liter Modular Septic tank complete	No	1
22	Eazisoak infiltration Chamber	No	150
23	Eazisoak Infiltration End Cap	No	6
24	Supervision by specialist to monitor installation		Item
25	Supply and Delivery to Dundonald Police Station		Item
26	Excavate not exceeding 2m deep.	m3	56
27	250 Micron plastic waterproof membrane laid over soakaway.	m2	32
28	Risk of collapse to sides of soakaway excavations not exceeding 1,5m deep.	m2	104
29	Extra over soakaway excavations for carting away surplus material from excavations to a dumping site to be located by the contractor.	m3	56
30	Earthfilling obtained from excavations or stock piles on site compacted to 93% backfilled to soakways.	m3	12
<u>TESTING :</u>			
31	Allow for testing the whole of the soil drainage system and for any re-testing necessary after taking out and replacing any defective work to the satisfaction of the Representative.		Item

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Soil Drainage (Provisional)

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FENCING AND GATES (PROVISIONAL)

Fencing prices are to include for site clearance and grading to even lines 1 m each side of fence line unless otherwise described, all necessary excavations in earth, risk of collapse and disposal of surplus excavated material

DEMOLITIONS

-WORK GROUP 102-

Removal of existing fence

- 1 Take down and remove existing wire mesh fencing 2
400mm high including 300 mm flat wrapped, with post
as indicated by the engineer

SITE CLEARANCE

-WORK GROUP 104-

- 2 Allow for digging up and removal of all grass, shrubs, rubbish and vegetable soil for a width of 500mm on either side of new fence line including forming 50mm high free space between underside of fence and ground surface by reducing or making up levels as required

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Fencing, etc (Provisional)

155 253

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