

**SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION**

Item
No

Quantity

Rate

Amount

SECTION NO.4

BILL NO.3

**WET SERVICES INSTALLATION
(PROVISIONAL) (CPAP WORK GROUP NO.
170 UNLESS OTHERWISE STATED)**

SUPPLEMENTARY PREAMBLES

General

The Model Preambles for Trades 2017 as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained

The bill of quantities must be read in conjunction with the rest of the contract documents and drawings.

A price must be submitted for every item. Items for which no prices are given will be regarded as being covered by other items in the Bills.

The quantities measured in the Bill of Quantities for work and material must not be viewed as a limitation of the amount of work to be done and material provided by the contractor in the complete execution of the work.

The general descriptions and data of the work given in the specification, drawings or schedules are not fully repeated in the Bill of Quantities and reference to the other documents for complete information is therefore important and necessary.

No variations or omissions may be done to the Bill of Quantities by the tenderer, any such variations or omissions will not be recognized and the text of the Bill of Quantities will be strictly adhered to.

Material must be ordered as determined on site and not from the drawings or Bill of Quantities. The Employer will not accept any responsibility for surplus or inadequately ordered material. Payments will only be made for the actual re-measured quantities as installed.

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Brought Forward		R	
All fittings and accessories shall always include the connections thereto. Unless otherwise stated in the Bill of Quantities, all prices shall allow for the following items: Supply, deliver to site, and store new unused and undamaged and of the best quality available and complete with small materials necessary for the installation, testing, commissioning and rendering in proper working order. Installation, fixing in position, running or laying, as applicable, in a thorough and workmanlike manner. Making of all connections necessary. Tenderer to ensure the proper working and serviceability of all items installed. Complete labelling with engraved labels to indicate all functions and instructions which otherwise would be unclear to ordinary users. Corrosion protection to be applied where necessary. All profits, overheads, supervision, transport and skilled and unskilled labour. Approval and inspection by the Engineer Compliance with the Specification. The installation is to comply with the project specifications if listed in this document. Tenderers to insure all cost related to specialist subcontractors preliminaries & general are price within the main contractors preliminaries & general section, as no additional cost for subcontractors preliminaries & general shall be entertained. Main contractors preliminaries & general shall be deemed to include subcontractors preliminaries & general cost.			
<u>HOT & COLD WATER RETICULATION</u>			
Carried Forward		R	
Section No. 4 Bill No. 3 Wet Services			

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**SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION**

Brought Forward			R
<u>For the supply, delivery, installation, testing and commissioning of the following Heat pumps and Geysers</u>			
1	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.	No	1
2	For the complete supply, delivery and installation of 200L 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	No	1
3	For the complete supply, delivery and installation of 3.5kW 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.	No	13
4	For the complete supply, delivery and installation of 100L 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	No	3
Carried Forward			R
Section No. 4 Bill No. 3 Wet Services			

CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

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SOUTH AFRICAN POLICE SERVICES
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Brought Forward			R
<u>For the Supply, delivery, installation and commissioning of Extra over pipe for fittings (Geberit Mepla Gunmetal, PEX, similar or other approved) including all necessary crimps fixed to soffit, walls, or chased into walls, etc.</u>			
<u>BENDS-90° specified to be Geberit Mepla, PEX, similar or other approved</u>			
17	elbow: 90°, d=16mm	No	10
18	elbow: 90°, d=20mm	No	342
19	elbow: 90°, d=26mm	No	63
20	elbow: 90°, d=32mm	No	10
21	elbow: 90°, d=40mm	No	5
22	elbow: 90°, d=50mm	No	5
<u>COUPLING specified to be Geberit Mepla, PEX, similar or other approved</u>			
23	coupling: 90°, d=16mm	No	10
24	coupling: 90°, d=20mm	No	100
25	coupling: 90°, d=26mm	No	50
26	coupling: 90°, d=32mm	No	30
27	coupling: 90°, d=40mm	No	20
28	coupling: 90°, d=50mm	No	20
<u>TEES specified to be Geberit Mepla, PEX, similar or other approved</u>			
29	T-piece, equal: d=20mm	No	22
30	T-piece, equal: d=26mm	No	10
31	T-piece, equal: d=32mm	No	10
32	T-piece, equal: d=40mm	No	10
33	T-piece, equal: d=50mm	No	5
Carried Forward			R
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	Brought Forward		R
34	T-piece, equal: d=20mm	No	10
35	T-piece, reduced: d=26mm, d1=26mm, d2=20mm	No	20
36	T-piece, reduced: d=26mm, d1=20mm, d2=20mm	No	22
37	T-piece, reduced: d=32mm, d1=20mm, d2=26mm	No	1
38	T-piece, reduced: d=32mm, d1=26mm, d2=26mm	No	1
39	T-piece, reduced: d=32mm, d1=32mm, d2=20mm	No	1
40	T-piece, reduced: d=32mm, d1=32mm, d2=26mm	No	1
41	T-piece, reduced: d=40mm, d1=40mm, d2=26mm	No	1
42	T-piece, reduced: d=40mm, d1=40mm, d2=32mm	No	1
43	T-piece, reduced: d=50mm, d1=50mm, d2=26mm	No	1
44	T-piece, reduced: d=50mm, d1=50mm, d2=32mm	No	1
	<u>REDUCER specified to be Geberit Mepla, PEX, similar or other approved</u>		
45	reducer: d=26mm, d1=20mm	No	10
46	reducer: d=32mm, d1=26mm	No	12
47	reducer: d=40mm, d1=26mm	No	8
48	reducer: d=40mm, d1=32mm	No	5
49	reducer: d=50mm, d1=32mm	No	8
50	reducer: d=50mm, d1=40mm	No	5
	<u>Isolating valves specified to be Geberit Mepla, PEX, similar or other approved</u>		
51	20mm	No	150
52	26mm	No	1
53	32mm	No	1
	<u>GAUGES AND FITTINGS</u>		
	Carried Forward		R
Section No. 4 Bill No. 3 Wet Services			

SOUTH AFRICAN POLICE SERVICES
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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>			
54	Heat Pump circulation pumps (delivery side)	No	14
55	Heat Pump circulation pumps (Inlet side side)	No	14
56	Hot water return pumps (delivery side)	No	14
57	Hot water return pumps (Inlet side)	No	14
<u>STRAINERS</u>			
<u>For the supply, delivery and installation of the strainers in accordance with the project specification. Complete with connection flanges and fittings:</u>			
58	28 mm dia epoxy coated and lined strainer with element	No	2
59	54 mm dia epoxy coated and lined strainer with element	No	2
<u>For the supply, delivery, installation, testing and commissioning of the following Hydroboils</u>			
60	10L Hydroboil, 2,4 kW element rating (ZIP or other approved)	No	1
<u>ELBOW TAP CONNECTOR specified to be Geberit Mepla, PEX, similar or other approved</u>			
61	Elbow tap connector 90°: d=20mm, Rp=1/2", L=3.6cm	No	10
<u>ADAPTER specified to be Geberit Mepla, PEX, similar or other approved</u>			
62	Adapter with male thread: d=20mm, R=1/2"	No	10
<u>INTERNAL SEWER DRAINAGE INSTALLATION</u>			
Carried Forward			R
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<u>For the Supply, delivery, installation and commissioning of pipes and fittings (UPVC Class 2 in accordance to SANS 966-1) including all necessary fixations and equal couplings in the running lengths fixed to soffit, walls, or chased into walls, etc.</u>			
<u>uPVC Pipe:</u>			
63	50 mm uPVC pipe	m	240
64	110 mm uPVC pipe	m	100
<u>uPVC Y-Junction 45°:</u>			
65	uPVC d=50mm-d1=50mm-d2=50mm	m	1
66	uPVC d=110mm-d1=110mm-d2=110mm	m	1
67	uPVC d=110mm-d1=110mm-d2=50mm	m	1
68	uPVC Double Junction d1=110mm-d2=110mm d3=110mm d4=110mm	m	1
<u>uPVC T-Piece 90°:</u>			
69	uPVC d=50mm-d1=50mm-d2=50mm	m	1
70	uPVC d=110mm-d1=110mm-d2=110mm	m	1
71	uPVC d=110mm-d1=110mm-d2=50mm	m	1
72	uPVC Double Junction d1=110mm-d2=110mm d3=50mm d4=50mm	m	1
<u>uPVC reducer</u>			
73	UPVC reducer: d=160mm, d1=110mm	m	1
74	UPVC reducer: d=110mm, d1=50mm	m	1
<u>uPVC Bends</u>			
75	UPVC bend: 45°, d=50mm	No	48
76	UPVC bend: 45°, d=110mm	No	24
Carried Forward			R
Section No. 4 Bill No. 3 Wet Services			

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Brought Forward			R
77	UPVC bend : 90°, d=50mm	No	134
78	UPVC bend : 90°, d=110mm	No	48
<u>uPVC end caps, etc.</u>			
79	110 mm end caps	No	50
80	50 mm end caps	No	20
<u>Air admittance valvess</u>			
81	110mm dia	No	10
<u>uPVC Kimberley sockets</u>			
82	110mm dia	No	10
83	50mm dia	No	10
<u>Floor Drains</u>			
84	152mm x 152mm stainless steel type (for showers)	No	10
85	Stainless steel type Floor Drain with Flange Size 240mm x 240mm (all other areas)	No	1
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 3			
Wet Services			

SOUTH AFRICAN POLICE SERVICES
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SECTION SUMMARY - MECHANICAL INSTALLATION

Bill No		Page No	Amount
1	HVAC Installation	152	
2	Fire Installation	161	
3	Wet Services	170	
Section No. 4		Carried to Final Summary	R

SOUTH AFRICAN POLICE SERVICES
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Quantity

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SECTION NO. 5

BILL NO. 1

GENERAL SITEWORKS, ETC

The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition).

SUPPLEMENTARY PREAMBLES

View site

Before submitting his tender the contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained

Notices

Special care is to be exercised not to interfere unnecessarily with any electrical or telephone installations, etc., that may be met with and due notice is to be given to the Principal Agent when any disconnections or removal of wires, fittings, etc., are necessary and the Contractor is to afford every facility to the electricians, etc. carrying out this work

The Contractor will be responsible for the processing of all applications in respect of the removal and/or termination of Municipal services

Explosives

No explosives whatsoever may be used for demolition purposes unless otherwise stated

Carried Forward

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Section No. 5
Bill No. 1
General Siteworks, Etc

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**SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION**

Brought Forward	R
<u>Existing Equipment</u>	
Rates shall include for the disconnection and removal of all equipment housed in the area of the demolitions. All equipment removed must be handed over to the Employer	
<u>Making good</u>	
Prices of all works described throughout these Bills of Quantities are to include for making good, whether specifically mentioned or not	
<u>Carting away of excavated material</u>	
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	
<u>Filling</u>	
Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material	
<u>Testing</u>	
Prices for filling are to include for all necessary density tests in accordance with SABS 1200D	
<u>General</u>	
The Contractor shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining premises. He shall provide proper protection and provide, erect and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent	
Water supply pipes and other piping that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the Principal Agent	
Carried Forward	R
Section No. 5 Bill No. 1 General Siteworks, Etc	

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Brought Forward				R
The Contractor is to keep accurate records for the removal of all items measured under this section. Where buildings, walls, etc. are demolished, photographs must be taken and kept as records, should discrepancies later arise when claims are made Special care is to be exercised not to interfere unnecessarily with any electrical or telephone installations, etc., that may be met with and due notice is to be given to the Principal Agent when any disconnections or removal of wires, fittings, etc., are necessary and the Contractor is to afford every facility to the electricians, etc. carrying out this work. The Contractor will be responsible for the processing of all applications in respect of the removal and/or termination of Municipal services <u>Watering, etc</u> The Contractor is to allow for watering the works with a jet or spray from a hose sufficiently to prevent any nuisance from dust <u>EARTHWORKS (PROVISIONAL)</u> <u>(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)</u> <u>SITE CLEARANCE, ETC (PROVISIONAL)</u>				
1	Digging up and removing from site rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	14,640	
Carried Forward to Summary of Section No. 5				R
Section No. 5				
Bill No. 1				
General Siteworks, Etc				

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 5</u>			
	<u>BILL NO. 2</u>			
	<u>BULK EARTHWORKS (PROVISIONAL)</u>			
	<u>(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)</u>			
	The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition).			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	The Contractor is advised that all quantities measured are NET and no allowance has been made for bulking. The Contractor is to ensure that when pricing any section pertaining to Earthworks, all rates are deemed to include for bulking.			
	<u>BULK EXCAVATION, FILLING, ETC</u>			
	<u>Digging up topsoil</u>			
1	Digging up topsoil to an average depth of 200mm and preserving for use as filling	m3	1,110	
	<u>Open face excavation in earth over sloping site</u>			
	<u>Excavation in earth not exceeding 2m deep</u>			
2	Open face excavation to reduce levels "cut to stockpile"	m3	661	
3	Open face excavation to reduce levels "cut to fill from stockpile"	m3	640	
	<u>Extra over all excavations for carting away</u>			
4	Surplus material from stock piles on site to a dumping site to be located by the contractor	m3	21	
	<u>Extra over bulk excavation in earth for excavation in</u>			
5	Intermediate rock	m3	780	
	Carried Forward			
	Section No. 5 Bill No. 2 Bulk Earthworks (Provisional)			

SOUTH AFRICAN POLICE SERVICES
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Brought Forward			R
<u>Keeping excavations free of water</u>			
6	Keeping excavations free of water other than subterranean water	Item	
<u>G7 Imported filling supplied by the contractor, compacted to 95% Mod AASHTO density</u>			
7	Over site to form platforms	m3	535
<u>Prescribed density tests on filling</u>			
8	"Modified AASHTO Density" test	No	6
9	"Field Density" test including "Optimum Moisture Content" (four readings per test)	No	6
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 2			
Bulk Earthworks (Provisional)			

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SOUTH AFRICAN POLICE SERVICES
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Item
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Quantity

Rate

Amount

SECTION NO. 5

BILL NO. 3

DRAINAGE, ETC (CPAP WORK GROUP NO. 146 UNLESS OTHERWISE STATED)

The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition).

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the client

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.

Stormwater channels

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

Concrete pipes

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

Laying, backfilling, bedding, etc of pipes

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

Carried Forward

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Section No. 5
Bill No. 3
Drainage, Etc

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Brought Forward

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Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

SABS 1200L : Medium-pressure pipelines

SABS 1200LD : Sewers

SABS 1200LE: Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB : 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 1200LB : Bedding (Pipes).

Unless otherwise described bedding of rigid pipes shall be Class B bedding.

SANS 1200L : Medium-pressure pipelines

SANS 1200LD : Sewers

SANS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : 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 SANS 1200LB : Bedding (Pipes).

Unless otherwise described bedding of rigid pipes shall be Class B bedding.

General

Descriptions of pipes laid in and including trenches and of inspection chambers, catch pits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site.

Tenderers are referred to drawing no 586/912 - Rev P1 indicating the typical manhole details, connections, etc.

Carried Forward

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Section No. 5
Bill No. 3
Drainage, Etc

SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

Brought Forward		R
<u>As built drawings</u>		
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).		
<u>Prices</u>		
Prices of all pipes shall include for short lengths and cuttings, for all joints in the length, including necessary couplings and for all jointing to fittings		
Prices of all joints between pipes of dissimilar and between taps, valves, etc. and, shall include in all cases for the couplings or adapters. Prices of flanged and bolted joints between pipes of dissimilar and between valves, etc. and pipes, shall include for flanges drilled as required, flange adapters, rubber insertion rings and necessary bolts and nuts		
Prices for all pipes in ground shall include for laying in ground, including digging trenches in earth, provision for risk of collapse to sides of excavations, except where specifically measured in detail, keeping excavations free from water, bedding as described and for filling in and ramming in 150 mm thick layers to 95% Modified AASHTO. Price of concrete encasement around pipes, bends, etc. and concrete anchor blocks, shall include for all additional excavation and formwork required		
<u>SOIL DRAINAGE (PROVISIONAL)</u>		
Note: Prices for all soil drainage pipes in ground are to include for bedding on and surrounding with approved selected granular material from site or supplied and carted on to site by the contractor to a minimum thickness of 150mm below and 300mm above the pipe including compaction and cart away surplus excavated material from site		
<u>uPVC Class 34 HD pipes laid in Class B bedding</u>		
1	160mm Pipe in ground including excavation exceeding 1m not exceeding 2m deep (LI)	325
		m
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Section No. 5 Bill No. 3 Drainage, Etc		

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Brought Forward			R
2	160mm Pipe in ground including excavation exceeding 2m not exceeding 3m deep (LI)	m	41
<u>Extra over uPVC Class 34 pipes for fittings</u>			
3	160mm bend (LI)	No	84
4	160mm junction (LI)	No	42
<u>Precast concrete manholes</u>			
5	750mm Diameter precast concrete circular inspection chamber not exceeding 1500mm deep internally including HD pre-cast concrete cover and frames (measured elsewhere), 25 Mpa concrete base with Mesh Ref 245, (Type B). Refer to Engineer's drawing No 586/912 (LI)	No	1
6	1000mm Diameter precast concrete circular inspection chamber exceeding 1000mm and not exceeding 2000mm deep internally including HD pre-cast concrete cover and frames (measured elsewhere), 25 Mpa concrete base with Mesh Ref 245, (Type B). Refer to Engineer's drawing No 586/912 (LI)	No	31
7	1250mm Diameter precast concrete circular inspection chamber exceeding 2000mm and not exceeding 3000mm deep internally including HD pre-cast concrete cover and frames (measured elsewhere), 25 Mpa concrete base with Mesh Ref 245, (Type B). Refer to Engineer's drawing No 586/912 (LI)	No	11
<u>Covers</u>			
8	750mm Diameter heavy duty concrete manhole cover and frame	No	1
9	1000mm Diameter heavy duty concrete manhole cover and frame	No	31
10	1250mm Diameter heavy duty concrete manhole cover and frame	No	11
<u>Sundries</u>			
11	Extra over excavation in earth for pipe trenches, chambers, etc., for excavation in intermediate material	m3	732
Carried Forward			R
Section No. 5 Bill No. 3 Drainage, Etc			

SOUTH AFRICAN POLICE SERVICES
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Brought Forward			R
<u>Testing</u>			
12	Allow for testing the whole of the soil drainage installation to the satisfaction of the Principal Agent and Local Authorities. All defective work is to be taken out and replaced at the Contractor's expense and the whole re-tested until found satisfactory	Item	
<u>STORM WATER DRAINAGE (PROVISIONAL)</u>			
Note: Prices for all stormwater drain pipes in ground are to include for Class D bedding, excavations, backfilling, risk of collapse, keeping excavations free from water and for cart away surplus excavated material from site			
<u>Class 100D reinforced concrete pipes with ogee joints with approved rubber collars, laid on bedding in accordance with Class 'D' of SABS 1200</u>			
13	300mm Pipe in ground including excavation exceeding 1m not exceeding 2m deep (LI)	m	714
14	300mm Pipe in ground including excavation exceeding 2m not exceeding 3m deep (LI)	m	33
15	375mm Pipe in ground including excavation exceeding 1m not exceeding 2m deep (LI)	m	23
16	375mm Pipe in ground including excavation exceeding 2m not exceeding 3m deep (LI)	m	15
17	450mm Pipe in ground including excavation exceeding 2m not exceeding 3m deep (LI)	m	61
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Section No. 5 Bill No. 3 Drainage, Etc			

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Brought Forward				R
<u>Sumps, manholes, etc</u>				
<u>Excavate for and build manhole formed of precast concrete manhole rings 1000mm diameter and 1300mm diameter concrete slab, the cover slab unit rebated for and fitted with 490mm diameter heavy duty concrete manhole cover and frame (measured elsewhere) including cutting and fitting precast concrete rings around drain pipes, benching, etc. All openings and joints between manhole rings to be primed and sealed with an approved sealer in cement mortar (Bitu-joint or similar sealant) partial benching</u>				
18	Brick catch pit size internally 800 x 800mm exceeding 1000mm and not exceeding 2000mm deep to invert fitted with and including 450 diameter pre-cast HD cover and 1265 x 1265mm pre-cast frame (measured elsewhere) including excavations, backfill, bedding, etc. (Type 1). Refer to Engineer's drawing No 586/915 REV P2 (LI)	No	9	
19	Brick catch pit size internally 800 x 800mm exceeding 2000mm and not exceeding 3000mm deep to invert fitted with and including 450 diameter pre-cast HD cover and 1265 x 1265mm pre-cast frame including excavations, backfill, bedding, etc. (Type 1). Refer to Engineer's drawing No 586/915 REV P2 (LI)	No	3	
20	Brick manhole size internally 300 x 300mm not exceeding 1000mm deep to invert fitted with and including 350 x 350mm 80 x 5.5mm RSD0 Rectagrid B type grid inlet and frame including excavations, backfill, bedding, etc. (Type 4). Refer to Engineer's drawing No 586/914 REV P2 (LI)	No	2	
21	Brick manhole size internally 460 x 460mm exceeding 1000mm and not exceeding 2000mm deep to invert fitted with and including 450 x 450mm iron grid inlet grating and frame including excavations, backfill, bedding, etc. (Type 3). Refer to Engineer's drawing No 586/914 REV P2 (LI)	No	6	
22	Brick manhole size internally 460 x 690mm exceeding 1000mm and not exceeding 2000mm deep to invert fitted with and including 450 x 600mm iron grid inlet grating and frame including excavations, backfill, bedding, etc. (Type 2). Refer to Engineer's drawing No 586/914 REV P2 (LI)	No	41	
Carried Forward				R
Section No. 5 Bill No. 3 Drainage, Etc				

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SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

Brought Forward			R
23	Brick manhole size internally 460 x 690mm exceeding 2000mm and not exceeding 3000mm deep to invert fitted with and including 450 x 600mm iron grid inlet grating and frame including excavations, backfill, bedding, etc. (Type 2). Refer to Engineer's drawing No 586/914 REV P2 (LI)	No	10
<u>Covers</u>			
24	490mm Diameter heavy duty concrete manhole cover and frame	No	71
<u>Headwall</u>			
25	Storm water head wall outlet formed of one brick wall 600 x 1100mm long with two one brick 35 degree splayed wing walls average 300mm high and 1000mm long, the wall on and including 1100 x 250mm thick (25Mpa/19mm) concrete apron slab and the area between the walls filled in with 150mm thick (25Mpa/19mm) concrete surface bed, including Reno mattress size 6000 x 2000 x 230mm high. Refer to Engineer's drawing No 455/904 (LI)	No	6
<u>Sundries</u>			
26	Extra over excavation in earth for pipe trenches, chambers, etc., for excavation in intermediate material (LI)	m3	1,354
27	Unreinforced concrete 25Mpa /19mm stone anchor encasing size 450 x 1000mm around 300mm horizontal concrete pipe in ground including any necessary formwork and additional excavation, etc. (LI)	No	20
28	Unreinforced concrete 25Mpa /19mm stone anchor encasing size 450 x 1075mm around 375mm horizontal concrete pipe in ground including any necessary formwork and additional excavation, etc. (LI)	No	18
29	Unreinforced concrete 25Mpa /19mm stone anchor encasing size 450 x 1000mm around 450mm horizontal concrete pipe in ground including any necessary formwork and additional excavation, etc. (LI)	No	12
Carried Forward			R
Section No. 5 Bill No. 3 Drainage, Etc			

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SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

	Brought Forward		R	
	<u>Testing</u>			
30	Allow for testing the whole of the storm water drainage installation to the satisfaction of the Principal Agent and Local Authorities. All defective work is to be taken out and replaced at the Contractor's expense and the whole re-tested until found satisfactory	Item		
	Carried Forward to Summary of Section No. 5			
	Section No. 5			
	Bill No. 3			
	Drainage, Etc			

SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

Item
No

Quantity

Rate

Amount

SECTION NO. 5

BILL NO. 4

**WATER AND FIRE SUPPLIES, ETC (CPAP
WORK GROUP NO. 148 UNLESS
OTHERWISE STATED) (PROVISIONAL)**

The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition).

SUPPLEMENTARY PREAMBLES

"Polycop" polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

uPVC pressure pipes and fittings

Pipes for water supply shall be of the class stated

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

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

Carried Forward

R

Section No. 5
Bill No. 4
Water and Fire Supplies, Etc

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SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

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>Fixing of pipes</u> Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc., casting in, building in or suspending not exceeding 1m below suspension level <u>Reducing fittings</u> Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc. will be entertained <u>Laying, backfilling, bedding, etc. of pipes</u> Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers instructions	
Carried Forward	R
Section No. 5 Bill No. 4 Water and Fire Supplies, Etc	

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SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

Brought Forward	R
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 <u>"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.</u> Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied with minimum 15mm lap per spiral unless otherwise described Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including all mastic, tape, "Layflat" sheeting, securing of same, etc Prices for wrapping of pipes shall include for all work as described to couplings in the length <u>General</u> Descriptions of pipes laid in and including trenches and of inspection chambers, catch pits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site	
Carried Forward	R
Section No. 5 Bill No. 4 Water and Fire Supplies, Etc	

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SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

Brought Forward			R
<u>WATER SUPPLIES (PROVISIONAL)</u>			
<u>HDPE 100 Pipes</u>			
1	100mm Pipe laid in and including trenches not exceeding 1m deep (LI)	m	480
<u>Extra over HDPE PE 100 compression type pressure fittings</u>			
2	100mm Bend	No	24
3	100mm Reducing Tee	No	12
4	100mm Adaptor	No	12
5	100mm Reducer	No	8
6	100mm End cap	No	2
<u>Taps, valves, etc</u>			
7	100mm Isolation valve.	No	15
<u>Valve chambers, etc</u>			
8	Isolation valve chamber size internally 600 x 600mm not exceeding 1m deep to invert fitted with and including Valve Box Type 3A (SABS558) including excavations 20mpa concrete base, backfill, bedding, etc. Refer to Engineer's drawing No. 562/925. (LI)	No	15
<u>Testing</u>			
9	Allow for testing the whole of the water supply installation to the satisfaction of the Principal Agent and Local Authorities. All defective work is to be taken out and replaced at the Contractor's expense and the whole re-tested until found satisfactory	Item	
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 4			
Water and Fire Supplies, Etc			

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SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 5</u>			
	<u>BILL NO. 5</u>			
	<u>APRONS, V DRAINS, ETC</u>			
	The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition).			
	<u>EARTHWORKS (PROVISIONAL) (CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)</u>			
	<u>Excavation in earth not exceeding 2m deep</u>			
1	Reduced levels under floors (LI)	m3	14	
	<u>CARTING AWAY</u>			
	<u>Extra over all excavations for loading, carting and dumping surplus excavated material</u>			
2	Off site to be located by the contractor (LI)	m3	14	
	<u>COMPACTION</u>			
	<u>Compaction of surfaces</u>			
3	Compaction of ground surfaces under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod. AASHTO density (LI)	m2	88	
	<u>TESTS</u>			
	<u>Prescribed density tests on filling</u>			
4	Modified AASHTO Density test	No	3	
5	"Field Density" test including "Optimum Moisture Content" (four readings per test)	No	3	
Carried Forward			R	
Section No. 5 Bill No. 5 Aprons, V Drains, Etc				

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SOUTH AFRICAN POLICE SERVICES
CONSTRUCTION OF THE NEW MASHAYILANGA POLICE STATION

Brought Forward			R
<u>SOIL POISONING</u>			
<u>Soil insecticide in accordance to SANS 5859</u>			
6	Under floors, etc. including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming (LI)	m2	88
<u>CONCRETE, FORMWORK AND REINFORCEMENT (CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)</u>			
<u>REINFORCED CONCRETE CAST ON/IN FORMWORK</u>			
<u>25MPa/19mm Concrete</u>			
7	Surface beds, slabs, etc to falls and currents (LI)	m3	14
<u>CONCRETE SUNDRIES</u>			
<u>Finishing top surfaces of concrete with a wood float finish</u>			
8	Concrete channel to falls (LI)	m2	88
<u>Test blocks</u>			
9	Prepare a set of six concrete cubes each cube size 150 x 150 x 150mm for strength cubes and deliver to an approved laboratory for testing and pay all charges in connection therewith (LI)	Sets	6
<u>ROUGH FORMWORK (DEGREE OF ACCURACY II) (CPAP WORK GROUP NO. 111)</u>			
<u>Rough formwork to sides</u>			
10	V drains, paving and ramps not exceeding 300mm high (LI)	m	88
Carried Forward			R
Section No. 5 Bill No. 5 Aprons, V Drains, Etc			