

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

<u>Manholes</u>			
149	Supply and install pre-fabricated manholes and lids to accommodate multiple diameter sleeves, as specified and as indicated on drawings	No	5
<u>Excavations</u>			
<u>Excavate for cable and sleeve trench including temporary support of sides, keeping excavations dry, backfilling and compacting to the Engineer's specification and includes PVC warning tape</u>			
<u>Trenching shall be calculated using the formula below : 0.5 mm deep x 0.45 mm wide x length of trench</u>			
150	Excavate in soft ground, backfill and compact to MOD AASHTO 95% (LI)	m3	14
151	Excavate in soft rock, backfill and compact to MOD AASHTO 95% (LI)	m3	7
152	Excavate in hard rock, backfill and compact to MOD AASHTO 95% (LI)	m3	4
<u>SOLAR</u>			
Solar PV installation, including hybrid inverter with battery storage (minimum 4 hours capacity). Important: PV panels dependent if existing municipal building roof structure permits the mounting of PV panels. Preliminary size =100kWp (as per item 1.36.1 of the Project Specification – C3.5.1)			
<u>Setting Out</u>			
153	Supply and install 665 Watt Solar Panel on a carport structure (Tier 1 approved solar panels)	No	150
154	Supply and install 665 Watt Solar Panel on a IBR structure (Tier 1 approved solar panels)	No	16
155	Supply and install Array Mounting Structures (if not included elsewhere) installed onto an IBR roof (Similar or equal to Renusol or equal and approved) (as per Project Specification)	No	16

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156	Supply and install PV string DC cabling BLACK 6mm2 (as per Project Specification)	m	2,400
157	Supply and install PV string DC cabling RED 6mm2 (as per Project Specification)	m	2,400
158	Supply and install 6mm2 MC4 Male + Female Pair	No	60
159	Supply and Install minimum IP65 rated DC string protection boxes with DC isolator, fuse and type 2 1000V SPD	No	2
160	Supply and install solar PV earthing	m	1,500
161	Supply and install solar PV structure lightning protection (Air Termination system) as per SANS standards		Item
162	Supply and install aluminum purpose made trunking (P8000 or similar) to run DC cable along the structure include accessories	m	200
163	Supply and install 100x50 aluminum cable tray to run strings on IBR roof	m	60
164	Supply and install 50kW 3 Phase True Hybrid Inverter complete with MPPT (Sunsynk, Deye, Victron, or other equal and approved) (as per Project Specification). 5 years warranty	No	2
165	60 kWh Lithium Iron Phosphate (LiFePO4) (Freedom Won or other equal and approved) HV Battery to power the essential loads of the municipal building during 4 hours of load shedding, including powder coated battery cabinet (if required). With 10 years warranty	No	6
166	Supply and install of battery accessories (DC busbars, fuses, comms, controllers, BMS and etc)		Item
167	Supply and install of 100A battery Disconnect with O/C protection	No	2
168	Supply and install of 200A rated 2 inputs and 1 output DC busbar	No	2
169	Supply and install Energy Management System to include generator integration with screen display.monitoring system to be integrated with inverter for remote monitoring		Item

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170	Supply and install DC labeling		Item
171	Supply and install monitoring system to be integrated with inverter for remote monitoring		Item
172	AC Inverter integration DB with type 1+2 SPD - IP66 as per SLD		Item
173	Inv-Load DB with type 2 SPD - IP66 as per SLD		Item
174	Gen Input DB with type 2 SPD - IP66 as per SLD		Item
175	Allow for the Generator remote start module or Relay and it DB		Item
176	100kW rated Change-over / Bypass switch to isolate the system	No	1
177	35mm ² 4C+E SWA ECC cu LV AC Cabling between Inverter and Solar DB	m	60
178	50mm ² 4C+E ECC cu LV AC Cabling between Essential DB and Generator for bypas	m	30
179	35mm ² 4C+E ECC cu LV AC terminations	No	14
180	70mm ² 4C ECC cu LV AC Cabling between Solar DB and Tie-in point and betwween Grid input and AC-in DB	m	30
181	95mm ² 4C ECC cu LV AC Cabling between Solar DB and Tie-in point and betwween Grid input and AC-in DB	m	30
182	95mm ² 4C ECC cu LV AC terminations	No	4
183	70mm ² 4C ECC cu LV AC terminations	No	4
184	50mm ² 4C ECC cu LV AC terminations	No	8
185	100x75 cable ladder	No	30
186	Supply and install Fire protection & Suppression system including cooling system to keep at recommended temperature		Item
187	Modification to existing Distribution Board or new Distribution Board as per site investigations		Item
188	Solar PV Plant System Testing and Commissioning		Item

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189	Testing and Commissioning of Equipment and Installation. Issuing Certificate of Compliance for Entire Installation		Item
190	Extensive Client Training Plan	Hrs	2.00
191	12 Month Maintenance, including off-site monitoring of the system for the duration of the maintenance period		Item
192	Any other item required to make a functional system		Item
193	Miscellaneous		Item
194	Application, notification and liaison with the Eskom Supply Authority over the entire period of the installation of the Rooftop Solar PV Installation (as per Project Specification)		Item
195	Detailed Design of the Rooftop Solar PV System including all auxiliary systems and facilities (as per Project Specification)		Item
196	Supply and install pre-fabricated ECONO-MAX (equal, similar or improved) CARPORT, as specified and as indicated on drawings to mount 150 (75ea) solar panels, including all earthing and lightning protection	No	150
197	Structure related civil works		Item
198	Structure resurfacing		Item
	<u>Cable Sleeves</u>		
	<u>Supply and Install PVC Sleeves, including all trenching, preparation, backfilling and compaction, manholes with all accessories, etc.</u>		
199	200mm PVC Sleeve	m	640

Excavations
Excavate for cable and sleeve trench including temporary support of sides, keeping excavations dry, backfilling and compacting to the Engineer's specification and includes PVC warning tape

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Trenching shall be calculated using the formula below :
0.5 mm deep x 0.45 mm wide x length of trench

200	Excavate in soft ground, backfill and compact to MOD AASHTO 95% (LI)	m3	62
201	Excavate in soft rock, backfill and compact to MOD AASHTO 95% (LI)	m3	10
202	Excavate in hard rock, backfill and compact to MOD AASHTO 95% (LI)	m3	10

Manholes

203	Supply and install pre-fabricated manholes and lids to accommodate multiple diameter sleeves, as specified and as indicated on drawings	No	8
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GENERATOR

120kVA 3-Phase Generator with AMF

204	3-Phase Generator (Deutz engine equivalent or improved) Intregrated Automatic Mains-Failure (AMF). Generator to include Auto Changeover Panel (with PLC) and all requied Accessories (Supply and Install)	No	1
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Generator Base Plinth

205	Construction of 7000 x 4000 x 350mm, 25Mpa Concrete Plinth. Plinth to Protrude above ground by 100mm. Installation of 6 x 2.4m Ref 245 mesh as reinforcement (Supply and Install)	No	1
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Earth and Bonding

206	Supply and Install Earthing and Bonding of Generator (Distribution Panel). Testing of Earth Installation to be done by Specialist Contractor			SUM
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Low Voltage Cable Installations

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	<u>Supply and installation of 600/1000V PVC PVC SWA PVC cables with copper conductors and Bare Copper Earth Wire (E.C.C.) including cable lables at each end and including all trenching, backfilling, compacting to regulation.</u>		
207	120mm x 4 Core 600/1000V PVC SWA ECC Cu Cable	m	62
	<u>Termination of LV cable as specified including connection of conductors, cable lugs, captive glands, shrouds, etc for the following cable sizes.</u>		
208	120mm x 4 Core 600 / 1000V PVC SWA	No	2
	<u>Cable Sleeves</u>		
	<u>Supply and Install PVC Sleeves, including all trenching, preparation, backfilling and compaction, manholes with all accessories, etc.</u>		
209	160mm PVC Sleeve	m	62
	<u>Excavations</u>		
	<u>Excavate for cable and sleeve trench including temporary support of sides, keeping excavations dry, backfilling and compacting to the Engineer's specification and includes PVC warning tape</u>		
	<u>Trenching shall be calculated using the formula below : (0.5 mm deep x 0,45 mm wide x length of trench)</u>		
210	Excavate in soft ground, backfill and compact to MOD AASHTO 95% (LI)	m3	14
211	Excavate in soft rock, backfill and compact to MOD AASHTO 95% (LI)	m3	7
212	Excavate in hard rock, backfill and compact to MOD AASHTO 95% (LI)	m3	3
	<u>Manholes</u>		
213	Supply and install pre-fabricated manholes and lids to accommodate multiple diameter sleeves, as specified and as indicated on drawings	No	3

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MECHANICAL WORK

Note: The following trade is measured according to SANS1200

SUPPLEMENTARY PREAMBLES

Specifications, drawings, etc

Tenderers are referred to the specification and drawings numbered LSG-2319-FIRE-500, LSG-2319-HVAC-100, LSG-2319-WETP-200, LSG-2319-WETP-300, annexed to these bills of quantities for the mechanical work, for the full descriptions of the following items which are to be read and priced in conjunction with the said specification and drawings

Ductwork

Descriptions of ducts shall be deemed to include stiffeners, jointing materials, sealants, couplers in the running length and access/inspection panels in accordance with the specification

Dampers

Descriptions of smoke and fire dampers shall be deemed to include fusible links, sleeves, frames, supports and access openings in ducts

Air diffusion

Descriptions of air terminals, grilles, louvres and the like shall be deemed to include necks, frames, supports and flexible connections

Fans

Descriptions of fan assemblies shall be deemed to include supports from the structure, flexible or other connections to ductwork, vibration isolation mountings and airtight inspection doors

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Sound attenuators

Descriptions of sound attenuators shall be deemed to include flanged or flexible connections to ducts and supports from the structure

Fan coil units, fan air terminals and fan heaters

Descriptions of fan coil units, fan air terminals and fan heaters shall be deemed to include connection points for water, air and electrical supply, for air grilles, dust trays, condensate trays and vibration isolation mountings. Flexible ducts, flexible hose and connecting cables for connecting these units to each other or to water pipe, and electrical supply are separately measured

Major equipment

Descriptions of major equipment such as chillers, air handling units and the like shall be deemed to include connections to water, air and electrical supply and/or discharge points, supports, bearers, vibration insulation mountings, filters, insulation, inspection ladders and gangways, access doors and panels and painting etc as specified

Piping

Pipe diameters are nominal internal unless otherwise stated

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 diameter 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 diameters are given and no claim for extra bushes, reducers, etc will be entertained

Fixing of pipes

Unless 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

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Pump sets

Descriptions of pumps shall be deemed to include connections to water and electrical supply and/or discharge points, vibration insulation mountings, insulation, drip trays with outlets, pressure gauges, etc

Valves

Descriptions of valves shall be deemed to include flanged or screwed connections to pipes, reducers, supports, etc

Insulation

Descriptions of insulation shall be deemed to include priming the pipes with zinc chromate primer before the insulation is applied, painting the insulation when completed and applying vapour barrier where specified

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

MISCELLANEOUS

The costs for the following items shall not be included in the cost rates for work listed in the rest of the BOQ.

- | | | | |
|---|---|--|--|
| 1 | Complete supply and install LPG gas system for kitchen c/w Galvanised cage, 4x 48kg LPG cylinder, stainless steel manifold, isolation valves, pigtails, manual change over valve, 4403 regulator, stop cock valve, brackets, etc. | | |
|---|---|--|--|

SUM

HVAC

Tenderers are to refer to Drawing No.: LSG-2319-HVAC-100

All cost rates for the items in the BOQ must be the full installed, tested and commissioned cost, incl. all necessary fixings, supports, clamps, etc. Branded items shall be equal and approved.

Air-conditioning - Split Units

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"LG", "Samsung", "Daikin" or other equal and approved inverter split unit (R32 refrigerant), c/w indoor unit, outdoor unit, 20m insulated copper refrigerant piping & pipework accessories (as shown on drawing), insulated drainage to nearest drain point, drain pump, mountings, anti-vibrational dampers, elec. and comm. wiring and all other materials required for a full installation

2	IDU-1/ODU-1 - mid-wall - 2.7kW - indoor unit: M11AJH.NJ2; outdoor unit: M11AJH.UJ2	No	4
3	DU-2/ODU-2 - mid-wall - 3.5kW - indoor unit: M13AJH.NJ2; outdoor unit: M13AJH.UJ2	No	1
4	IDU-3/ODU-3 - mid-wall - 10kW - indoor/outdoor unit: M38AKH	No	2
5	IDU-4/ODU-4 - 4-way ceiling cassette c/w standard dec. panel - 2.5kW - indoor unit: CT09 NR2; outdoor unit: UU09W ULD	No	1
6	IDU-5/ODU-5 - 4-way ceiling cassette c/w standard dec. panel - 3.5kW - indoor unit: CT12 NR2; outdoor unit: UU12W	No	1
7	IDU-6/ODU-6 - 4-way ceiling cassette c/w standard dec. panel - 5kW - indoor unit: CT18 NQ4; outdoor unit: UU18W UE4	No	1
8	IDU-7/ODU-7 - ducted unit - 5kW - indoor unit: CM18 N14; outdoor unit: UU18W UE4	No	1
9	IDU-8/ODU-8 - ducted unit - 14kW - indoor unit: UM60 N34; outdoor unit: UU61W U32	No	4
10	C-1 - PREMTB100 - hardwired remote controller, c/w connection, wiring to relevant split unit	No	12
11	Extra over for Bluchem treatment on condenser unit	No	12

Air-conditioning - Console Units

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"YORK", "Dunham-Bush", "Mclaren" or other equal and approved inverter console unit, c/w wall collar (unit to protrude into room to remain flush with external wall), elec. and comm. wiring and all other materials required for a full installation. External wall grille measured elsewhere

12	AC-1 - console unit - 2.6kW - YPKE09C1	No	11
13	AC-2 - console unit - 4.34kW YPKE15C1	No	5
14	Extra over for Bluchem treatment on coils	No	16

VENTILATION

Extract air fan - "Vortice", "Luft", "Systemair" or other equal and approved wall-mounted, in-built, c/w timer, controls, wiring, fixings, etc.

15	EFW-1 - "Vortice Vario 150/6 ARI" @ 60l/s	No	6
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Extract air fan - "Systemair", "AMS", "Luft" or other equal and approved in-line circular duct c/w timer, on/off switch, speed controller, wiring, flanges, flexible collars, fixings, supports, anti-vibrational mountings, etc.

16	EF-1 - "Systemair Prio silent XP 150EC"	No	5
17	EF-2 - "Systemair Prio 150EC"	No	1
18	EF-3 - "Systemair Prio silent XP 160EC"	No	1
19	EF-4 - "Systemair Prio silent XP 200EC"	No	1

Supply air fan - "Systemair", "AMS", "Luft" or other equal and approved in-line circular duct c/w timer, on/off switch, speed controller, wiring, flanges, flexible collars, fixings, supports, anti-vibrational mountings, etc.

20	FF-1 - "Systemair Prio silent XP 150EC"	No	1
21	FF-2 - "Systemair Prio silent XP 200EC"	No	1

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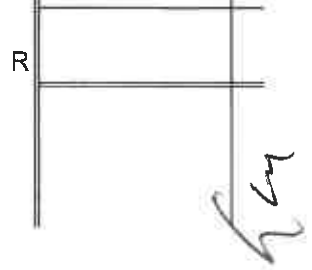
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<u>Galvanised sheet metal ductwork (incl. of area of bends and transformations) c/w neoprene rubber gaskets, vanes, hangers, clamps, supports, etc. - insulated with 15mm Compriflex / Thermaflex, vapour sealed, etc.</u>			
22	0.8mm rectangular	m2	30
23	Ø200mm circular	m	2
24	Ø250mm circular	m	3
25	Ø300mm circular	m	8
<u>Flexible ducting - wire reinforced, insulated with fiberglass, internally and externally lined with foil face and inclusive of Q-bands, duct spigots and duct tape</u>			
26	Ø200mm	m	3
27	Ø300mm	m	7
<u>Galvanised sheet metal ductwork (uninsulated), (incl. of area of bends and transformations) c/w neoprene rubber gaskets, vanes, hangers, clamps, supports, etc.</u>			
28	0.8mm rectangular	m2	60
29	Ø100mm circular	m	20
30	Ø125mm circular	m	12
31	Ø150mm circular	m	6
32	Ø200mm circular	m	1
<u>Flexible ducting - wire reinforced, un-insulated and inclusive of Q-bands, duct spigots & duct tape</u>			
33	Ø100mm circular	m	19
34	Ø125mm circular	m	9
35	Ø150mm circular	m	5

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**Grilles / diffusers - "TROX", "Rickard", "Systemair"
or other equal and approved**

36	EV-1 - "TROX LVS" extract air disc valve - Ø100mm	No	19
37	EV-2 - "TROX LVS" extract air disc valve - Ø125mm	No	7
38	EV-3 - "TROX LVS" extract air disc valve - Ø150mm	No	2
39	FV-1 - "TROX Z-LVS" fresh air disc valve - Ø125mm	No	2
40	FV-2 - "TROX Z-LVS" fresh air disc valve - Ø150mm	m	3
41	RD-1 - "RICKARD RCV" return air grille c/w hinged filter frame, plenum box, OBD - 600x600 mm and Ø300mm spigot	No	3
42	SD-1 - "RICKARD CSW" swirl diffuser - 600 x 600mm and Ø200mm neck	No	3
43	SD-2 - "RICKARD CSW" swirl diffuser - 600 x 600mm and Ø250mm neck	No	4
44	SG-1 - "RICKARD DDG3" supply air double deflection grille c/w OBD - 300 x 100mm	No	1
45	D-1 - supply and install compact dehumidifier 2l, wall-mounted c/w drainage to nearest drain point.	No	2

Aluminium weather louvre - "Trox", "Systemair" or other equal and approved painted to architect's approval c/w wire mesh screen and plenum

46	WL-1 - "Trox WG-AL-3" - 500 x 150mm	No	1
47	WL-2 - "Trox WG-AL-3" - 1200 x 150mm	No	1
48	WL-3 - "Trox WG-AL-3" - 300 x 200mm	No	1
49	WL-4 - "Trox WG-AL-3" - 350 x 200mm	No	1
50	WL-5 - "Trox WG-AL-3" - 400 x 200mm	No	2
51	WL-6 - "Trox WG-AL-3" - 500 x 200mm	No	2
52	WL-7 - "Trox WG-AL-3" - 400 x 250mm	No	1
53	WL-8 - "Trox WG-AL-3" - 1300 x 250mm	No	1

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54	WL-9 - "Trox WG-AL-3" - 500 x 300mm	No	1
55	WL-10 - "Trox WG-AL-3" - 550 x 350mm	No	1
56	WL-11 - "Trox WG-AL-3" - 760 x 400mm	No	16
57	FAF-1 - washable primary filter c/w sliding frame - 350 x 200mm	No	1
58	FAF-2 - washable primary filter c/w sliding frame - 500 x 200mm	No	1
59	FAF-3 - washable primary filter c/w sliding frame - 400 x 250mm	No	1
60	FAF-4 - washable primary filter c/w sliding frame - 1300 x 250mm	No	1
61	BDD-1 - rectangular back draft damper - 200 x 150mm	No	2
62	BDD-2 - rectangular back draft damper - 150 x 200mm	No	1

PUMPS

Pumps (Domestic and Fire)

All cost rates for the items in the Bills of Quantities must be the fully installed, tested and commissioned cost, incl. all necessary fixings, supports, clamps, etc. Branded items shall be equal and approved

63	BP-1 - "Wilo", "Grundfos", DAB Pumps" or other equal and approved domestic water booster pump: 2x Wilo Helix V1606-1/PN16/400v/4kw vertical multistage pumps (duty / standby). 2x Common 80mm 304 st/steel manifolds (suction/discharge). 1x H.D.G. skid base c/w panel stand. 4x Isolating valves. 2x non return valves. 1x Pressure relief valve 1x Pressure gauge. 1x 24l Hydrosphere. 1x 304 st/steel fittings and sundries. 1x Dual 4kw VSD MCC panel c/w indicator lights, switches, flip/flop, duty assist low level protection etc. 2x pressure transducers. Required flow 6 l/s at 46m		
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64 FP-1 - "Wilo", "Grundfos", DAB Pumps" or other equal and approved fire booster pump at 20 l/s @ 46m. Electric (primary) / diesel (secondary) / jockey c/w the following:
 1 x Wilo Giga N 50-250 CI/BZ/MS c/w bnz w/rings fitted
 1 x Kirloskar 3R1040 fire diesel engine c/w heat exchanger
 1 x Stub shaft
 1 x Wilo Giga N 50-200 CI/BZ/MS c/w bnz w/rings fitted
 1 x 30kw, 2P, 400v, B3 IP55 electric motor
 2 x Flexible couplings
 1 x Wilo Helix V 608-1/PN16/1.5kw, 400v jockey pump
 3 x 24lts Hydrospheres
 1 x Fabricated steel skid base c/w panel stand
 1 x 8hr Fuel tank and stand
 2 x Battery and cables
 1 x Suction manifold c/w valves and bellows and NRV's
 1 x Discharge manifold c/w valves and bellows and NRV's
 1 x Jockey pump and heat exchanger pipework
 3 x Pressure gauges
 1 x 30kw S/D IP55 MCC panel c/w 1x pressure switch
 1 x 12v DC IP55 MCC panel c/w 2x pressure switches
 1.5kw DOL IP55 MCC panel c/w 1x pressure switch.

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SECTION SUMMARY - SECTION 3: SPECIALIST INSTALLATIONS

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**SOUTH AFRICAN POLICE SERVICES
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**GENERAL SITE WORKS, ROADS AND
PAVING (PROVISIONAL)**

**SUBJECT TO ESCALATION AS INDICATED
BELOW**

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

SUPPLEMENTARY PREAMBLES

Any reference to trade names in the Bills of Quantities or Architect's specification or drawings shall deem to mean "or other equal and approved".

NOTES

The following works shall be executed according to SANS 1200. Measurement and payment items as per SANS 1200 shall be disregarded.

Nature of ground

Tenderer's are referred to a geo-technical investigation report identifying the site and soil conditions which is attached as an annexure to these bill of quantities

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

Testing

Prices for filling are to include for all necessary density and other tests.

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CONSTRUCTION OF THE NEW BHOSIKI POLICE STATION**

The Tenderer is referred to Section 2 and the JBCC CPAP work groups for similar items, which will apply equally to the work in this Bill unless otherwise described.

NOTE: The following items shall be deemed to fall into Work Group No. 104 for JBCC CPAP

SITE CLEARANCE

Site clearance

1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc. (LI)	m2	10,000
2	Stripping average 150mm thick layer of top soil and stockpiling on site (LI)	m3	1,500

BULK EXCAVATION, FILLING, ETC.

Note: The costs of soil, compaction, etc. tests in accordance with SABS 1200 are to be included in the rates for the relevant works

EXCAVATIONS, ETC.

Open face excavation in earth over sloping site

3	Excavate in all material to form platforms and spoil at dumping site to be located by contractor	m3	3,500
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Extra over bulk excavations in earth for excavation in

4	Intermediate rock	m3	500
5	Hard rock	m3	600

Extra over all excavations for carting away

6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	3,500
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<u>Compaction of surfaces</u>		
7	Compaction of ground including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2 6,500
<u>Keeping excavations free of water</u>		
8	Keeping excavations free of water in all excavations in External Works	Item
<u>FILLING, ETC.</u>		
<u>G9 fill material supplied and carted on site by the Contractor, compacted in layers not exceeding 150mm to 93% Mod. AASHTO density</u>		
9	Fill to platform	m3 1,900
<u>G5 fill material supplied and carted on site by the Contractor, compacted in layers not exceeding 150mm to 95% Mod. AASHTO density</u>		
10	Fill to platform	m3 350
<u>G5 fill material supplied and carted on site by the Contractor, compacted in layers not exceeding 150mm to 98% Mod. AASHTO density</u>		
11	Fill to platform	m3 700
<u>THE FOLLOWING IN INTERNAL ROADS AND PARKING AREAS</u>		
<u>NOTE: The following items shall be deemed to fall into Work Group No. 104 for JBCC CPAP</u>		
<u>Excavate to reduce levels under paving etc</u>		
12	Reduced levels under roads, paving, etc and stockpile on site (LI)	m3 2,200
<u>Extra over bulk excavation in earth for excavation in</u>		
13	Intermediate rock (LI)	m3 213
14	Hard rock (LI)	m3 107

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<u>Extra over all excavations for carting away</u>		
15	Extra over all excavations for carting surplus excavated material and spreading, levelling and lightly compacting on site where directed average 500m from the excavations (Measured nett- no allowance made for bulking)	m3 2,134
<u>Keeping excavations free of water</u>		
16	Keeping excavations free of all water other than subterranean water	Item
<u>Compaction of surfaces</u>		
17	Scarify earth surface to a depth of 150mm, breaking down over size material and reconsolidate to 90% modified AASHTO density	m2 3,500
<u>Filling supplied by the contractor under parking areas, roadways, etc</u>		
18	Base course of G2 filling compacted to 102% Mod AASHTO density	m3 420
19	Base course of G5 compacted to 95% Mod AASHTO density	m3 90
20	Subbase course of G5 compacted to 97% Mod AASHTO density	m3 420
21	Subbase course of G7 compacted to 93% Mod AASHTO density	m3 90
22	Subbase course of G7 compacted to 95% Mod AASHTO density	m3 420
23	Subbase course of G9 compacted to 93% Mod AASHTO density	m3 550

NOTE: The following items shall be deemed to fall into Work Group No. 154 for JBCC CPAP

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<p><u>60mm Thick 25MPa precast concrete interlocking block paving of 202 x 101mm grey paving blocks in accordance with SANS 1058, laid to falls on and including 20mm thick sand layer with joints filled in with sand, compacted with a vibration compactor</u></p>		
24	Paving to parking areas etc. to falls, including necessary straight edge blocks	m2 550
25	Circular cutting	m 75
<p><u>80mm Thick 35MPa precast concrete interlocking block paving of 202 x 101mm grey paving blocks in accordance with SANS 1058, laid to falls on and including 20mm thick sand layer with joints filled in with sand, compacted with a vibration compactor</u></p>		
26	Paving to parking areas etc. to falls, including necessary straight edge blocks	m2 2,750
27	Circular cutting	m 75
<p><u>"Hyvar X" or other equally approved soil herbicide at a rate of 50 gram/m2</u></p>		
28	Under paving etc.	m2 3,500
<p><u>KERBS, ETC</u></p>		
<p><u>Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing</u></p>		
29	150 x 200mm High kerbs (SANS 927 fig 4) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc.	m 574
30	150 x 400mm High kerbs (SANS 927 fig 12) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc.	m 77
31	Ditto, but circular on plan not exceeding 4m radius	m 44
32	Ditto, but circular on plan exceeding 4m and not exceeding 20m radius	m 60
33	200 x 300mm Concrete edge beam of class 20/19mm concrete	m 95

ROAD SIGNS

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**SOUTH AFRICAN POLICE SERVICES
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Provision and erection of regulatory traffic signs

34	Standard "STOP" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	2
35	Standard "SPEED LIMIT" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	2
36	Standard "BICYCLE PARKING" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	1
37	Standard "PARKING RESERVED" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	21
38	Standard "DISABLED PARKING" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	5
39	Standard "UNAUTHORISED" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	2
40	Standard "NO ENTRY" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	2
41	Standard "NO PARKING" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc	No	2

ROAD MARKINGS

Two coats reflective road marking paint on paving

42	Line 100mm wide	m	325
43	Line 150mm wide	m	60

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44	Numeral or letter symbols	No	14
45	Traffic arrow 780 x 2970mm wide extreme	No	5

GUARD RAILS

"Armco" or other equal and approved galvanized steel guard rails for road safety fixed to 1800mm long x 175mm diameter timber posts at 4000mm centres

46	Steel guardrails fixed to timber posts	m	100
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u>			
	<u>BILL NO. 2</u>			
	<u>COVERED WALKWAYS, CANOPIES, RAMPS ETC. (PROVISIONAL)</u>			
	<u>SUBJECT TO ESCALATION AS INDICATED BELOW</u>			
	The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	Any reference to trade names in the Bills of Quantities or Architect's specification or drawings shall deem to mean "or other equal and approved"			
	<u>NOTE: The following items shall be deemed to fall into Work Group No. 104 for JBCC CPAP</u>			
	<u>EXCAVATION, FILLING, ETC.</u>			
	<u>EXCAVATIONS, ETC.</u>			
	<u>Excavation in earth or compacted filling not exceeding 2m deep</u>			
1	To reduce levels under floors, etc. (LI)	m3	18	
2	Holes (LI)	m3	3	
	<u>Extra over all excavations for carting away</u>			
3	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	21	
	<u>Risk of collapse of excavations</u>			
4	Sides of trench and hole excavations not exceeding 1,5m deep (LI)	m2	18	
	<u>FILLING, ETC.</u>			
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CONSTRUCTION OF THE NEW BHOSIKI POLICE STATION

G9 fill material supplied and carted on site by the Contractor, compacted to 95% Mod. AASHTO density

5	Under floors, steps, pavings, etc.	m3	10
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Filling of coarse river sand supplied by the contractor, consolidated

6	Under floors, steps, pavings, etc.	m3	51
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Compaction of surfaces

7	Compaction of natural or excavated ground surface under floors etc., including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	102
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SOIL INSECTICIDE

Soil insecticide in accordance with SANS 5859

8	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming (Certificate to be supplied before payment is made)	m2	102
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9	To bottoms and sides of trenches and holes etc.	m2	23
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NOTE: The following items shall be deemed to fall into Work Group No. 110 for JBCC CPAP

UNREINFORCED CONCRETE

15MPa/19mm concrete

10	Blinding under ground beams on excavated surfaces (LI)	m3	0.3
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REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

25MPa/19mm concrete

11	Bases (LI)	m3	3
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12	Surface beds and ramps cast in panels on waterproofing (LI)	m3	8
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CONSTRUCTION OF THE NEW BHOSIKI POLICE STATION

CONCRETE SUNDRIES

Finishing top surface of concrete smooth with a steel wire brush finish in

13	Surface beds, slabs, etc. (LI)	m2	102
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NOTE: The following items shall be deemed to fall into Work Group No. 111 for JBCC CPAP

ROUGH FORMWORK (DEGREE OF ACCURACY II)

Rough formwork to sides

14	Edges, risers, ends and reveals not exceeding 300mm high (LI)	m	146
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MOVEMENT JOINTS, ETC.

Expansion joints with 10mm bitumen impregnated softboard between horizontal concrete surfaces

15	Not exceeding 300mm high to edges of surface beds	m	70
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Saw cut joints

16	3 x 40mm Saw cut joints in top of concrete	m	204
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NOTE: The following items shall be deemed to fall into Work Group No. 114 for JBCC CPAP

REINFORCEMENT (PROVISIONAL)

High tensile steel reinforcement to structural concrete work

17	Bars in various diameters	t	0.30
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Fabric reinforcement

18	Type 395 fabric reinforcement in concrete surface beds, slabs, etc.	m2	102
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NOTE: The following items shall be deemed to fall into Work Group No. 120 for JBCC CPAP

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DAMPPROOFING OF WALLS AND FLOORS

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape

19	Under surface beds (LI)	m2	102
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NOTE: The following items shall be deemed to fall into Work Group No. 124 for JBCC CPAP

PROFILED METAL SHEETING AND ACCESSORIES

Concealed Fix Zinc coating 0.58mm thick 700mm cover profile spelter top coat (Non-standard colour to Architect's approval) and backing coat (Non-standard colour to Architect's approval). Finish with approved zinc coat finishing to both sides on covered walkways or when exposed to bottom. Colours (Non standard) to Architect's approval. Galvanised steel roof sheeting, fixed to steel intermediate purlins at max 2500mm centres and eaves and ridge purlins at 2100mm centres using clips fixed with 10No.16 x 16mm long self-drilling wafer head screws. No. 3 drill point fasteners or fixed to timber intermediate purlins at 2500mm centres and eaves and ridge purlins at 2100mm centres using clips fixed with 10No.11 x 45mm long self-drilling wafer head screws, type 17 drill point fasteners, all in accordance with the manufacturer's specifications. A written and approved five year guarantee of water-tightness shall be issued after approval of roofs by the manufacturer. (0)

20	Roof sheeting with pitch not exceeding 25 degrees, fixed to steel purlins	m2	115
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