



Tender

**BUSHVELD ENERGY FACTORY IN ZONE 1A OF THE
ELIDZ**

AT THE

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE

**CONTRACT NO: EB/BUSH/01/19/Z1A
BUSHVELD ENERGY FACTORY IN ZONE 1A OF THE
ELIDZ**

ENVELOPE B: FINANCIAL PROPOSAL

East London IDZ
Lower Chester Road
Sunnyridge, East London

Contact person: Ms. Anathi Mzantsi
Email: anathi@elidz.co.za

Imvelo Quantity Surveyors
81 Beaconsfield Drive
Beacons Bay
5241

Contact Person: Mike Rooney
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Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

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PART C1: AGREEMENTS AND CONTRACT DATA

C1.1 CONTRACT DATA EC

C1.1: CONTRACT DATA – EMPLOYER

	The Conditions of Contract are clauses 1 to 42 of the JBCC series 2000 Principal Building Agreement (Edition 5 of July 2007) prepared by the Joint Building Contracts Committee. Copies of these conditions of contract may be obtained from the Association of South African Quantity Surveyors, Master Builders Association, South African Association of Consulting Engineers, South African Institute of Architects, Association of Construction Project Managers, Building Industries Federation South Africa, South African Property Owners Association or Specialist Engineering Contractors Committee.
	Definitions The definitions used in this document and the interpretation thereof are as listed in the Principal Building Agreement. The word or phrase of a definition is in bold text and shall bear the meaning assigned to it in the Principal Building Agreement. Where such word or phrase is not highlighted it shall bear the meaning consistent with the context of its use. The listed defined word or phrase does not qualify as a definition where information required to be stated in the contract data has not been provided.
	Provision of Contract Data Spaces requiring information must be filled in, shown as “not applicable” or deleted but not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided, the information should be annexed hereto and cross referenced to the applicable clause of the contract data.
	Reference Clauses Where relevant the Principal Building Agreement clause applicable to the required information is printed in italics under the Contract Data clause number ie. <i>[27.4.2]</i>
1.0	CONTRACTING AND OTHER PARTIES
1.1 <i>[1.2]</i>	Employer: East London Industrial Development Zone SOC Ltd Postal address: P O BOX 5458 Greenfields East London Tel: (043) 702 8200 Fax: (043) 7028251 Email: gary@elidz.co.za Tax/VAT registration No. 4900 213 598 Physical address: Lower Chester Road Sunnyridge East London Code 5201
1.2 <i>[5.1]</i>	Principal Agent Smale & Partners Architects Physical address: 123 Western Avenue, Vincent, East London Code 5247 Tel: 043 726 9327 Fax: 043 726 9329 Email: info@smale.co.za
1.3 <i>[5.2]</i>	Agent (1) Project Managers Lukhozi Consulting Engineers Agent's service: PROJECT MANAGERS Physical address:

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	The Quarry, Quartzite Dr, Selborne, East London Code 5201 Tel: 043 721 1321 Fax: 086 663 7202 Email: c.brink@lukhozi.co.za
1.4 [5.2]	Agent (2) Agent's services: ARCHITECTS Smale and Partner Architects Physical address: 123 Western Avenue, Vincent, East London Code 5247 Tel: 043 726 9327 Fax: 043 726 9329 Email: info@smale.co.za
1.5 [5.2]	Agent (3) Imvelo Quantity Surveyors Agent's service: QUANTITY SURVEYOR Physical address: 81 Beaconsbury Drive, Beacon Bay Code 5241 Tel: 043 748 5209 Fax: 043 748 5203 Email: mike@imvelogs.co.za
1.7 [5.2]	Agent (4) HSC Consulting Agent's service: CIVIL ENGINEERS Physical address: 18 St Mark Rd, Southernwood, East London Code 5200 Tel: 043 743 9528 Fax: 043 743 5347 Email: hsc@hsc.co.za
1.8 [5.2]	Agent (5) HSC Consulting Agent's service: STRUCTURAL ENGINEERS Physical address: 18 St Mark Rd, Southernwood, East London Code 5200 Tel: 043 743 9528 Fax: 043 743 5347 Email: hsc@hsc.co.za
1.9 [5.2]	Agent (6) Carifro Consulting Engineers Agent's service: ELECTRICAL ENGINEERS Physical address: 6 Belgrave Road, Belgravia Code 5201 Tel: 043 743 8266 Fax: N/A Email: el@carifro.com
1.10 [5.2]	Agent (7) Carifro Consulting Engineers Agent's service: MECHANICAL ENGINEERS Physical address:

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	6 Belgrave Road, Belgravia Code 5201 Tel: 043 743 8266 Fax: N/A Email: el@carifro.com	
1.11 [5.2]	Agent (8)	
	To be appointed	
	Agent's service:	
	SHEQ Consultant	
	Physical address:	
 Code Tel: Fax: Email:	
1.12 [5.2]	Agent (9)	
	To be appointed	
	Agent's service:	
	Environmental Consultant	
	Physical address:	
 Code Tel: Fax: Email:	
1.12 [5.5]	Interest of principal agent or other agents in the project	No
1.12	The principal agent named in 1.3 is responsible for the preparation of the contract data schedule. Failure to complete the contract data schedule in full may result in the tender being disqualified.	
2	CONTRACT AND SITE INFORMATION	
2.1 [1.7]	The law applicable to this agreement shall be that of the	Republic of South Africa
2.2 [1.1]	Works identification: The expansion of an existing manufacturing facility in Zone 1A of the ELIDZ	
2.3 [1.1]	Site description:	The site is in Zone1A of the EAST LONDON IDZ (Refer to Envelope A Volume 1 of 2: Technical Specification Part C4 Site Information for detail)
2.4 [15.2.1]	Possession of the site is to be given on:	PROVISIONAL: 22 February 2021
2.5 [15.3]	Period for the commencement of the works after the contractor takes possession of the site: (working days)	1
2.6 [15.4]	Completion of the works in sections is required	Yes
[28.0]	Number of sections	3
2.7 [3.3] [31.16.2]	Waiver of the contractor's lien or right of continuing possession is required	Yes
2.8 [16.1]	Defined restrictions to the site area. Where "yes" the specific requirements are described below or detailed in the contract documents:	No
2.9 [16.4]	Geotechnical investigation of the site has been undertaken. Where "yes" results are included in the contract documents.	Yes
2.10 [16.6]	Existing premises will be occupied. Where "yes" the specific requirements are described below or detailed in the contract documents	No

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

2.11 [16.7]	Provision of temporary services is required. Where "yes" the specific requirements are described below or detailed in the contract documents				Yes
2.11.1	Water	Option A	Contractor	his cost	
		Option B	Employer	free of charge	
		Option C	Employer	metered (contractor cost)	C
2.11.2	Electricity	Option A	Contractor	his cost	
		Option B	Employer	free of charge	
		Option C	Employer	metered (contractor cost)	C
2.11.3	Telecom	Option A	Contractor	his cost	A
		Option B	Employer	free of charge	
		Option C	Employer	metered (contractor cost)	
2.11.4	Ablutions	Option A	Contractor	his cost	A
		Option B	Employer	free of charge	
2.12 [16.8]	Protection of existing trees and shrubs is required. Where "yes" the specific requirements are described below or detailed in the contract documents				No
3.0	INSURANCES AND SECURITIES				
3.1	Contract works insurance to be effected by the:			(Employer/ Contractor)	Employer
[10.1.1]	For the sum of			(amount)	Contract Sum + 18%
[12.6]	The contractor is responsible, in the case of storm, subsidence, landslip or collapse, earthquake or earth tremor, fire and lightning, theft/ malicious damage, for the deductible of			(amount)	R 25,000
	The contractor is responsible, in all other cases, for the deductible of			(amount)	R 10,000
3.2	Supplementary / Special insurance to be effected by			(Employer/ Contractor)	Employer
[10.1.2]	For the sum of			(amount)	Contract Sum + 18%
[11.1] [11.2] [11.3] [12.6]	The contractor is responsible for the deductible of 0.1% of the Contract Sum with a minimum of R2,500.00 and a maximum of R 25,000.00 per incident.				
3.3	Public liability insurance to be effected by			(Employer/ Contractor)	Joint Names
[10.1.3]	Spread of Fire for the Sum of			(amount)	R 250,000
	All other cases for the Sum of			(amount)	R20,000,000
[12.6]	The contractor is responsible, in the case of Damage to Underground Services, for the deductible of			(amount)	R 25,000
	The contractor is responsible, in the case of Third Party Damage, for the deductible of			(amount)	R 15,000
3.4	Support insurance to be effected by the				Employer
[11.1.1]	For the sum of			(amount)	NA
	With a deductible of			(amount)	NA
3.5	Special insurance to be effected by			(Employer/ Contractor)	NA
	Type				
	For the sum of			(amount)	NA
	With a deductible of			(amount)	NA

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4.0	PRACTICAL COMPLETION DATES AND PENALTIES			
4.1	For the works as a whole		Date	Penalty Amount
[24.3.1] [30.1] [30.2] [30.3]	The date for practical completion and the penalty per calendar day		NA	NA
4.2	For the works in sections		Date	Penalty Amount
[24.3.1] [28.1]	The date for practical completion and the penalty per calendar day	Section 1	02 Jul 21	R 40,000
		Section 2	03 Sep 21	R 40,000
		Section 3	24 Sep 21	R 40,000
5.0	DOCUMENTS AND GENERAL			
5.1 [3.7]	No of Construction documents to be supplied to the contractor			3
5.2 [3.9]	The priced document may be used as a specification of materials and goods and work methods			No
5.3 [3.10]	The contractor shall provide a schedule of rates			No
5.4 [3.11]	Changes made to JBCC standard documents			Yes
		(Addendum No)		NA
5.5 [3.11]	On acceptance of the tender the priced document is to be submitted within the stated working days	(No. of)		The priced document is to be submitted as part of the tender and returned as part of Envelope B: Financial Proposal
5.6 [22.2]	Work to be undertaken by direct contractors			Yes
				Installation of crane Installation of MCC Containers Installation of Tanks and associated equipment Installation of utilities/services (RO Plant, Scrubber, Cooling Tower, Generator, Compressor) Installation of high-level walkways
5.7 [24.9]	On achievement of practical completion the contractor is to hand over manuals etc. related to the works as listed below:			
	(1) Electrical Installation	(2)		Sprinkler Installation
	(3) Fire Detection Installation	(4)		Air Conditioning Equipment Installation
5.8	Interim payment certificate to be issued by	(Date of Month)		25 th day of the month
6.0	CHANGES MADE TO THE STANDARD JBCC DOCUMENT			

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	Note: All changes in detail must be listed below or provided in	(Addendum No)	NA
1.1	<p>The definition of “BILLS OF QUANTITIES” is amended by replacing it with the following:</p> <p>BILLS OF QUANTITIES: The document drawn up in accordance with the Standard System of Measuring Building Work 1999 sixth Edition (Revised). The contractor shall have priced the document to reflect the contract sum.</p>		
1.1	<p>The definition of “CONSTRUCTION PERIOD” is amended by replacing it with the following:</p> <p>CONSTRUCTION PERIOD: means the period commencing on the date that possession of the site is given to the contractor and ending on the date of practical completion.</p>		
1.1	<p>The definition of “WORKING DAYS” is amended by replacing it with the following:</p> <p>WORKING DAYS: Twenty-four (24) hour days commencing at midnight (00:00) which excludes Sundays and statutory holidays.</p>		
3.1	<p>Clause 3.1 shall be amended as follows:</p> <p>Replace clause 3.1 with No clause</p>		
3.3	<p>Delete the following in the third line of clause 3.3</p> <p>“of having received a payment guarantee from the employer [3.1]”</p>		
7.2	<p>Add the following clause after clause 7.1:</p> <p>7.2 Without limiting the generality of the provisions of clause 7.0, the contractor's attention is drawn to the provisions of the Construction Regulations, 2014 issued in terms of the Occupational Health and Safety Act, 1993. It is specifically stated that the employer shall prepare a documented health and safety specification for the works (refer to Envelope A: Technical Proposal: Volume 1 of 2 C3.3 for a copy of the relevant specification and baseline risk assessment) and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price against this item for compliance with the Act and the Regulations and the provisions of the aforementioned health and safety specification.</p>		
7.3	<p>Add the following clause after clause 7.2:</p> <p>7.3 Construction Environmental Management Plan (C4): The Construction Environmental Management Plan (CEMP) REV8 January 2016, incorporates specifications derived from recommendations in the Strategic Environmental Assessment (SEA), ELIDZ Rezoning Environmental Impact Assessment (EIA) and comments Report. Department of Economic Affairs, Environment and Tourism's Conditions of Approval for the rezoning EIA, together with specifications for good "environmental practice" for construction work. The purpose of the CEMP is to translate the recommendations of the SEA and the Rezoning EIA into a contractual environmental management plan which will be strictly applied during the construction of the works. A copy of the CEMP is attached (refer to Envelope A: Technical Proposal: Volume 1 of 2 C3.4 for a copy of the relevant specification) and tenderers are to familiarize themselves with the provisions contained therein and allow for compliance with the same.</p>		

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14.3.2	<p>Add the following to the end of clause 14.3.2:</p> <p>The expiry date for the security to be provided in terms of clause 14.3 and 14.4 shall be one hundred and eighty (180) calendar days after the date for practical completion for the work as a whole.</p> <p>Should the terms of the construction guarantee have an expiry date add the following clause after clause 5.2 on the JBCC Construction Guarantee form:</p> <p>5.3. The guarantor has failed to extend the guarantee when requested to do so by the Employer if the certificate of final complete in respect of the variable construction guarantee and certificate of practical completion in respect of the fixed construction guarantee under the contract has not been issued by the date, 30 calendar days prior to the expiry date of the construction guarantee, and that the construction guarantee is called up in terms of 5.0</p>
15.1.2	<p>Documents to be provided five (5) working days after the acceptance of the tender</p> <ul style="list-style-type: none"> • OHS Plan/File • Construction Guarantee • Construction Programme
18.0	<p>Add the following clause after clause 18.4.</p> <p>18.5 The contractor shall notify the principal agent if any encroachments of adjoining foundations, buildings, structures, pavements, boundaries, etc. exist in order that the necessary arrangements may be made for the rectification of any such encroachments.</p>
19.1	<p>Amend clause 19.1 as follows:</p> <p>Delete "Where required in the priced document"</p>
19.1.1	<p>Amend clause 19.1.1 as follows:</p> <p>Substitute clause 19.1.1 with the following:</p> <p>The contractor will, throughout the entire contract period be responsible for the proper and adequate protection of all workers and visitors on the site from injury and damage resulting from the works and for the proper security of the site at all times. Furthermore, the contractor must allow for all necessary temporary hoardings, hoardings with gantries, fans, safety screens, barriers, access gates, covered gangways, walkways, overhead protection against falling objects and materials, security fences, etc. for the enclosure of the works and elements thereof for the protection of the public and others as required by prevailing BCMM bylaws, the Construction Regulations 2014 issued in terms of Occupational Health and Safety Act 1993, any other Laws and Regulations and/or demanded by his own site requirements. Allowance must furthermore be made for periodic adjustment of any enclosure or protection and for their eventual removal.</p> <p>Hoardings and Temporary Fencing prescribed by the Employer and have been measured in the Provisional Bills of Quantities.</p> <p>All other hoarding must be priced for under this clause in the Preliminaries Bill and no claims for additional hoardings and temporary fencing will be entertained.</p> <p>All site establishment, offices and storage of materials will be strictly limited to the area demarcated (See C3.1: Scope of Work, paragraph 1.5 Temporary works) and the Contractors Site Area depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities, which must be suitably fenced with 1,8m high 'Bonnox' fencing covered with shadecloth to the satisfaction of the Principal Agent. The contractor shall be responsible for keeping such areas in a clean, sanitary and orderly condition.</p>

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

19.1.2	<p>Add the following to the end of Clause 19.1.2:</p> <p>The office accommodation for meetings is to be adequately sized and equipped with a sound working table and chairs to accommodate at least twenty (20) people for site meetings. The room is to be well vented with air-conditioning and fitted with two large white boards and pin boards with markers and erasers. Two plug points to be provided within the room. The access area around the offices and the toilets shall be surfaced with clean crushed stone, which shall be well drained, kept free from mud and maintained throughout the contract period. The office accommodation shall be located within Contractors Site Area depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities</p>
19.1.3	<p>Add the following clause after clause 19.1.2</p> <p>Clause 19.1.3 An office for the Clerk of Works and Resident Engineers. The office shall consist of one room with a floor area of at least 30 m² and a ceiling height of at least 2.5 m, shall be weatherproof, shall have either a wooden boarded floor that is at least 150mm above the ground or a concrete surface bed, and shall be provided with a ceiling and a lining to the walls, or equivalent insulation, with an acceptable type of door with a secure lock, and opening windows of glazed area at least 7 m². The office shall be well ventilated with air-conditioning and shall be so insulated as to provide comfortable and dust free working conditions. The office shall have 10 power points and acceptable lighting. The following furniture needs to be provided: 10 chairs, 5 desks, 5 filing cabinets, 2 drawing racks. The access and the areas around the meeting room and office shall be surfaced with clean crushed stone. Furthermore, an adequate level parking area shall be provided also surfaced with clean crushed stone. Both areas shall be well drained, kept free of mud and maintained throughout the contract period. The contractor shall allow for the proper maintenance and regular cleaning of the meeting room and office during the contract period to ensure clean usable facilities at all times and shall clear away and make good on completion. The office for the Clerk of works and Resident Engineers shall be located within Contractors Site Area depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities</p>
19.1.4	<p>Add the following new clause after Clause 19.1.3:</p> <p>The Contractor must provide a temporary access road to the Contractors Site Camp as depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities which must be made up of adequate layer works to accommodate the Contractors and the Tenants site traffic for the duration of the the contract. The temporary access road is to be maintained by the Contractor for the duration of the contract and the Contractor must re-instate/ rehabilitate contractors site and the access road from in accordance with Clause PS 6 of the CEMP Rev 8 January 2016 included in Part C3.4 in Envelope A: Volume 1 of 2 of these tender documents which sets out the Employers re-instatement requirements.</p>
19.1.5	<p>Add the following new clause after Clause 19.1.4:</p> <p>The Contractor must provide a sewer and a metered water and electrical connection to the Tenants site camp/ laydown area.</p>
19.2	<p>Amend the third sentence to clause 19.2 as follows:</p> <p>The contractor shall provide and erect a project notice board size 2.5m x 3.5m.</p>
19.3	<p>Add the following to the end of clause 19.3:</p> <p>The contractor shall re-instate/ rehabilitate the area used for site establishment (contractors yard area) as set out in Clause PS 6 of the CEMP Rev 8 January 2016 included in Part C3.4 in Envelope A: Volume 1 of 2 of these tender documents.</p>

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

29.2.1	Clause 29.2.1 shall be amended as follows: Replace clause 29.2.1 with No clause	
31.9	Amend by substituting seven (7) calendar days with thirty (30) calendar days.	
34.10	Amend by substituting seven (7) calendar days with thirty (30) calendar days.	
31.5.3	The Contract is to be adjusted using CPAP indices. (Clause 32.13) [31.5.3]: Yes. Base month is DECEMBER 2020 Where CPAP is applicable, the contract sum will be adjusted in accordance with the JBCC Contract Price Adjustment Provisions (CPAP) as set out in the CPAP Indices Application Manual for use with P0151 indices published by Statistics South Africa, dated 1 January 2013 and any amendments thereto:	
	1)	Glass etc. measured in specialist section Metalwork, will be adjusted in terms of the index for that work group unless specifically stated otherwise in the Provisional Bills of Quantities
	2)	All electrical installations in buildings and power distribution systems shall be adjusted in terms of the index for Work Group 160 Electrical Installation. In case of uninterruptible power supplies, elevators, escalators and hoists, generating sets, motor-alternator sets and intercommunication systems shall be in accordance with Work Group 170
	3)	With reference to Work Group 190 a proportion of the value related preliminaries pro rata to the amount of work excluded from adjustment, shall be excluded from Contract Price Adjustment Provisions, if Option A has been selected for the adjustment of preliminaries
	4)	Further to clause 3.4.4 of the CPAP Indices Application Manual, the listing of additional items for exclusion by tenderers, will not be permitted
	5)	Where V results in a negative amount after application of the formula in clause 8.3 of the CPAP Indices Application Manual the factor of 0.55 shall be substituted by 1.45
31.16.2	The Employer will not be providing a payment guarantee for the waiver of the Contractor's lien or right of continuing possession of the site.	
7.0	DECLARATION BY THE PRINCIPAL AGENT	
	I, the principal agent named in 1.2 above, declare that the information provided above is provisional at the time of calling for tenders. Where necessary, should any of the above information need to be varied, tenderers will be forthwith informed thereof in writing	
		Principal Agent
		Date

C1.2 JBCC FORM OF GUARANTEE



Construction Guarantee

for use with the
JBCC Principal Building Agreement

GUARANTOR DETAILS AND DEFINITIONS

Guarantor means			
Physical address			
Guarantor's signatory 1		Capacity	
Guarantor's signatory 2		Capacity	
Employer means			
Contractor means			
Principal Agent means			
Works means			
Site means			
Agreement means	The JBCC Series 2000 Principal Building Agreement		
Contract Sum means	The accepted amount inclusive of tax of		
Amount in words			
Guaranteed Sum means	The maximum aggregate amount of		
Amount in words			
Construction Guarantee	(Insert Variable or Fixed)		(Insert expiry date)

AGREEMENT DETAILS

Sections:	Total sections (No or n/a)		Last section (No / Identification or n/a)	
Principal Agent issues:	Interim payment certificates, Final payment certificate, Practical completion certificate/s and Final completion certificate/s			

1.0 VARIABLE CONSTRUCTION GUARANTEE

- 1.1 Where a variable Construction Guarantee in terms of the Agreement has been selected this 1.0 with 3.0 to 13.0 shall apply. The Guarantor's liability shall be limited to the diminishing amounts of the Guaranteed Sum as follows:

GUARANTOR'S LIABILITY

- 1.1.1 Maximum Guaranteed Sum (not exceeding 10.0% of the contract sum) in the amount of:

Amount in words: _____

- 1.1.2 Reducing to the Guaranteed Sum (not exceeding 6.0% of the contract sum) in the amount of:

Amount in words: _____

PERIOD OF LIABILITY

From and including the date of issue of this Construction Guarantee and up to and including the date of the interim payment certificate certifying in excess of 50% of the contract sum

From and including the day after the date of the aforesaid interim payment certificate and up to and including the date of the only practical completion certificate or last practical completion certificate where there are sections

- 1.1.3 Reducing to the Guaranteed Sum (not exceeding 4.0% of the contract sum) in the amount of:
-
- Amount in words: _____
- 1.1.4 Reducing to the Guaranteed Sum (not exceeding 2.0% of the contract sum) in the amount of:
-
- Amount in words: _____
- 1.2 For avoidance of doubt the Guarantor's liability limits set out in 1.1.1 to 1.1.4 shall apply in respect of any claim received by the Guarantor during the period in question

From and including the day after the date of the applicable practical completion certificate and up to and including the date of the only final completion certificate or last final completion certificate where there are sections

From and including the day after the date of the applicable final completion certificate and up to and including the date of the final payment certificate where payment is due to the Contractor, whereupon this Construction Guarantee shall expire. Where the final payment certificate reflects payment due to the Employer, this Construction Guarantee shall expire upon payment of the full amount certified

2.0 FIXED CONSTRUCTION GUARANTEE

- 2.1 Where a fixed Construction Guarantee in terms of the Agreement has been selected this 2.0 with 3.0 to 13.0 shall apply. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum as follows:

GUARANTOR'S LIABILITY

Maximum Guaranteed Sum (not exceeding 5.0% of the contract sum) in the amount of:

Amount in words: _____

PERIOD OF LIABILITY

From and including the date of issue of this Construction Guarantee and up to and including the date of the only practical completion certificate or the last practical completion certificate where there are sections, upon which this Construction Guarantee shall expire

- 3.0 The Guarantor hereby acknowledges that:
- 3.1 Any reference in this Guarantee to the Agreement is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship
- 3.2 Its obligation under this Guarantee is restricted to the payment of money
- 4.0 Subject to the Guarantor's maximum liability referred to in 1.0 or 2.0, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
- 4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Principal Agent in an interim or final payment certificate has not been made in terms of the Agreement and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2
- 4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) calendar days has elapsed since the first written demand in terms of 4.1 and that the sum certified has still not been paid therefore the Employer calls up this Construction Guarantee and demands payment of the sum certified from the Guarantor
- 4.3 A copy of the said payment certificate which entitles the Employer to receive payment in terms of the Agreement of the sum certified in 4.0
- 5.0 Subject to the Guarantor's maximum liability referred to in 1.0 or 2.0, the Guarantor undertakes to pay the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Construction Guarantee stating that:

- 5.1 The Agreement has been cancelled due to the Contractor's default and that the Construction Guarantee is called up in terms of 5.0. The demand shall enclose a copy of the notice of cancellation; or
- 5.2 A provisional sequestration or liquidation court order has been granted against the Contractor and that the Construction Guarantee is called up in terms of 5.0. The demand shall enclose a copy of the court order
- 6.0 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4.0 and 5.0 shall not exceed the Guarantor's maximum liability in terms of 1.0 or 2.0
- 7.0 Where the Guarantor is a registered insurer and has made payment in terms of 5.0, the Employer shall upon the date of issue of the final payment certificate submit an expense account to the Guarantor showing how all monies received in terms of the Construction Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Construction Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund
- 8.0 Payment by the Guarantor in terms of 4.0 or 5.0 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor
- 9.0 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer deems fit and the Guarantor shall not have the right to claim his release from this Construction Guarantee on account of any conduct alleged to be prejudicial to the Guarantor
- 10.0 The Guarantor chooses the physical address as stated above for all purposes in connection herewith
- 11.0 This Construction Guarantee is neither negotiable nor transferable and shall expire in terms of either 1.1.4 or 2.1, or payment in full of the Guaranteed Sum or on the Guarantee expiry date, whichever is the earlier, where after no claims will be considered by the Guarantor. The original of this Construction Guarantee shall be returned to the Guarantor after it has expired
- 12.0 This Construction Guarantee, with the required demand notices in terms of 4.0 or 5.0, shall be regarded as a liquid document for the purpose of obtaining a court order
- 13.0 Where this Construction Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court

Signed at	_____	Date	_____
Guarantor's Signatory 1	_____	Guarantor's Signatory 2	_____
Witness	_____	Witness	_____

Guarantor's seal or stamp

PART C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS

C2.1 Pricing Instructions

- 1 The Provisional Bills of Quantities have been drawn up in accordance with the Standard System of Measuring Building Work as amended published and issued by the Association of South African Quantity Surveyors (Sixth Edition (Revised), 1999.
- 2 The agreement is based on the JBCC Series 2000 Principal Building Agreement, prepared by the Joint Building Contracts Committee, Edition 5, July 2007. The additions, deletions and alterations to the JBCC Principal Building Agreement as well as the contract specific variables are as stated in the Contract Data. Only the headings and clause numbers for which allowance must be made in the Provisional Bills of Quantities are recited.
- 3 It will be assumed that prices included in the Provisional Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org.za or www.iso.org for information on standards).
- 4 Reference to any particular trademark, name, patent, design, type, specific origin or producer is purely to establish a standard for requirements. Products or articles of an equivalent standard may be substituted.
- 5 Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")
- 6 The Contract Data and the standard form of contract referenced therein must be studied for the full extent and meaning of each and every clause set out in Bill No.1 (Preliminaries) of the Provisional Bills of Quantities.
- 7 The Provisional Bills of Quantities are not intended for the ordering of materials. Any ordering of materials, based on the Provisional Bills of Quantities, is at the Contractor's risk.

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

C2.2 PROVISIONAL BILLS OF QUANTITIES

(TO BE COMPLETED IN BLACK INK AND RETURNED)

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

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SECTION NO. 1

PRELIMINARIES

Item	Amount
<p style="text-align: center;"><u>SECTION NO. 1</u> <u>PRELIMINARIES</u></p> <p><u>PRELIMINARIES</u></p> <p><u>NOTES:</u></p> <p><u>BUILDING AGREEMENT AND PRELIMINARIES</u></p> <p>The JBCC Series 2000 Principal Building Agreement (July 2007 Edition 5.0 Reprint 1) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described</p> <p>The JBCC Principal Building Agreement Contract Data EC & CE form an integral part of this agreement.</p> <p>The ASQS Preliminaries (November 2007 Edition) published by the Association of South African Quantity Surveyors for use with the JBCC Principal Building Agreement shall be deemed to be incorporated in these bills of quantities, amended as hereinafter described.</p> <p>Contractors are referred to the abovementioned documents for the full intent and meaning of each clause</p> <p>The clauses in the abovementioned documents are hereinafter referred to by clause number and heading only. Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading and such modifications, corrections or supplements shall take precedence notwithstanding anything contrary contained in the abovementioned documents.</p> <p>Where any item is not relevant to this specific agreement such item is marked N/A (signifying not applicable).</p> <p><u>PREAMBLES FOR TRADES</u></p> <p>The Model Preambles for Trades 2008 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.</p> <p>Supplementary preambles and/or specifications are incorporated in these bills of quantities to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the Model Preambles.</p> <p>The contractor's prices for all items throughout these bills of quantities shall take account of and include for all of the obligations, requirements and specifications given in the Model Preambles and in any supplementary preambles and/or specifications</p> <p><u>STRUCTURE OF THIS PRELIMINARIES BILL</u></p> <p>Section A : A recital of the headings of the individual clauses of the aforementioned JBCC Principal Building Agreement.</p> <p>Section B : A recital of the headings of the individual clauses of the aforementioned Preliminaries document.</p> <p style="text-align: right;">TOTAL CARRIED TO SECTION SUMMARY</p> <p>Section No. 1 Bill No. 1 Preliminaries</p>	
	R

Item		Amount
	Section C : Any special clauses to meet the particular circumstances of the project.	
	<u>PRICING OF PRELIMINARIES</u>	
	Should the contractor select Option A in the contract data for the adjustment of preliminaries , the amounts entered against the relevant items in these preliminaries are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T).	
	<u>SECTION A: PRINCIPAL BUILDING AGREEMENT</u>	
	<u>Definitions</u>	
1	Clause 1.0 - Definitions and interpretation F: V: T:	Item
	<u>Objective and preparations</u>	
2	Clause 2.0 - Offer acceptance and performance obligations F: V: T:	Item
3	Clause 3.0 - Documents F: V: T:	Item
4	Clause 4.0 - Design responsibility F: V: T:	Item
5	Clause 5.0 - Employer's agents F: V: T:	Item
6	Clause 6.0 - Contractor's site representative F: V: T:	Item
7	Clause 7.0 - Compliance with laws and regulations. F: V: T:	Item
8	Clause 7.2 - Health and Safety and Covid 19 Without limiting the generality of the provisions of clause 7.0, the contractor's attention is drawn to the provisions of Construction Regulations, 2014 issued in terms of the Occupational Health and Safety Act, 1993. It is specifically stated that the employer shall prepare a documented health and safety specification for the works and Covid 19 specification (refer to Volume 1 of 2 C3.3 for a copy of the relevant specifications and baseline risk assessment) and that the Employer shall ensure that the Contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item of the aforementioned health and safety and Covid 19 specification , excluding the items priced and included in Section 4 Occupational Health and Safety and Covid 19 of these Bills of Quantities. F: V: T:	Item
9	Clause 7.3 Construction Environmental Management Plan	
	TOTAL CARRIED TO SECTION SUMMARY	R
	Section No. 1	
	Bill No. 1	
	Preliminaries	

Item		Amount
	<p>The Construction Environmental Management Plan (CEMP) incorporates specifications derived from recommendations in the SEA, ELIDZ Rezoning Environmental Impact Assessment (EIA) and comments Report. Department of Economic Affairs, Environment and Tourism's Conditions of Approval for the rezoning EIA, together with specifications for good 'environmental practice' for construction work. The purpose of the CEMP is to translate the recommendations of the SEA and the Rezoning EIA into a contractual environmental management plan which will be strictly applied during the construction of the works. A copy of the CEMP is attached (See C3.4 in Volume 1 of 2 of this document) and tenderers are to familiarize themselves with the provisions contained therein and allow for compliance with the same.</p> <p>F: V: T:</p>	
10	<p>Clause 8.0 - Works risk</p> <p>F: V: T:</p>	Item
11	<p>Clause 9.0 - Indemnities</p> <p>F: V: T:</p>	Item
12	<p>Clause 10.0 - Insurances</p> <p>F: V: T:</p>	Item
13	<p>Clause 11.0 - Special Insurances</p> <p>F: V: T:</p>	Item
14	<p>Clause 12.0 - Effecting Insurances</p> <p>F: V: T:</p>	Item
15	<p>Clause 13.0 - Assignment</p> <p>F: V: T:</p>	Item
16	<p>Clause 14.0 - Security</p> <p>F: V: T:</p>	Item
	<u>Execution</u>	
17	<p>Clause 15.0 - Preparation for and execution of the works</p> <p>F: V: T:</p>	Item
18	<p>Clause 16.0 - Site and access</p> <p>F: V: T:</p>	Item
19	<p>Clause 17.0 - Contract instructions</p> <p>F: V: T:</p>	Item
20	<p>Clause 18.0 - Setting out of the works</p> <p>The contractor shall notify the principal agent if any encroachments of adjoining foundations, buildings, structures, pavements, boundaries, etc. exist in order that the necessary arrangements may be made for the rectification of any such encroachments.</p> <p>F: V: T:</p>	Item
21	<p>Clause 19.0 - Temporary works and plant Substitute clause 19.1.1 with the following:</p>	
	TOTAL CARRIED TO SECTION SUMMARY	R
	Section No. 1	
	Bill No. 1	
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	<p>The contractor will, throughout the entire contract period be responsible for the proper and adequate protection of all workers and visitors on the site from injury and damage resulting from the works and for the proper security of the site at all times. Furthermore, the contractor must allow for all necessary temporary hoardings, hoardings with gantries, fans, safety screens, barriers, access gates, covered gangways, walkways, overhead protection against falling objects and materials, security fences, etc. for the enclosure of the works and elements thereof for the protection of the public and others as required by prevailing BCMM bylaws, the Construction Regulations 2014 issued in terms of Occupational Health and Safety Act 1993, any other Laws and Regulations and/or demanded by his own site requirements. Allowance must furthermore be made for periodic adjustment of any enclosure or protection and for their eventual removal.</p> <p>Hoardings and Temporary Fencing prescribed by the Employer and have been measured in the Provisional Bills of Quantities.</p> <p>All other hoarding must be priced for under this clause in the Preliminaries Bill and no claims for additional hoardings and temporary fencing will be entertained.</p> <p>All site establishment, offices and storage of materials will be strictly limited to the area demarcated (See C3.1: Scope of Work, paragraph 1.5 Temporary works) and the Contractors Site Area depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities, which must be suitably fenced with 1,8m high 'Bonnox' fencing covered with shade cloth to the satisfaction of the Principal Agent. The contractor shall be responsible for keeping such areas in a clean, sanitary and orderly condition.</p> <p>F: V: T:</p>	
22	<p>Clause 19.1.2 Add the following to the end of Clause 19.1.2:</p> <p>The office accommodation for meetings is to be adequately sized and equipped with a sound working table and chairs to accommodate at least twenty (20) people for site meetings. The room is to be well vented with air-conditioning and fitted with two large white boards and pin boards with markers and erasers. Two plug points to be provided within the room. The access area around the offices and the toilets shall be surfaced with clean crushed stone, which shall be well drained, kept free from mud and maintained throughout the contract period. The office accommodation shall be located within Contractors Site Area depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities</p> <p>F: V: T:</p>	Item
23	<p>Add the following clause after clause 19.1.2</p> <p>Clause 19.1.3 An office for the Clerk of Works and Resident Engineers. The office shall consist of one room with a floor area of at least 30 m² and a ceiling height of at least 2.5 m, shall be weatherproof, shall have either a wooden boarded floor that is at least 150mm above the ground or a concrete surface bed, and shall be provided with a ceiling and a lining to the walls, or equivalent insulation, with an acceptable type of door with a secure lock, and opening windows of glazed area at least 7 m². The office shall be well ventilated with air-conditioning and shall be so insulated as to provide comfortable and dust free working conditions.</p>	Item
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	<p>The office shall have 10 power points and acceptable lighting. The following furniture needs to be provided: 10 chairs, 5 desks, 5 filing cabinets, 2 drawing racks. The access and the areas around the meeting room and office shall be surfaced with clean crushed stone. Furthermore, an adequate level parking area shall be provided also surfaced with clean crushed stone. Both areas shall be well drained, kept free of mud and maintained throughout the contract period.</p> <p>The contractor shall allow for the proper maintenance and regular cleaning of the meeting room and office during the contract period to ensure clean usable facilities at all times and shall clear away and make good on completion. The office for the Clerk of works and Resident Engineers shall be located within Contractors Site Area depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities</p> <p>F: V: T:</p>		
24	<p>Clause 19.1.4 Add the following new clause after Clause 19.1.3:</p> <p>The Contractor must provide a temporary access road to the Contractors Site Camp as depicted on Drawing No 0046 ARCH DESIGN 209 Rev 0 Site Camp Locations attached to these Bills of Quantities which must be made up of adequate layer works to accommodate the Contractors and the Tenants site traffic for the duration of the contract.</p> <p>The temporary access road is to be maintained by the Contractor for the duration of the contract and the Contractor must re-instate/ rehabilitate contractors site and the access road from in accordance with Clause PS 6 of the CEMP Rev 8 January 2016 included in Part C3.4 in Envelope A: Volume 1 of 2 of these tender documents which sets out the Employers re-instatement requirements.</p> <p>F: V: T:</p>	Item	
25	<p>Clause 19.1.5 Add the following new clause after Clause 19.1.4:</p> <p>The Contractor must provide a sewer and a metered water and electrical connection to the Tenants site camp/ laydown area.</p> <p>F: V: T:</p>	Item	
26	<p>Clause 19.2 Amend the third sentence to clause 19.2 as follows:</p> <p>The contractor shall provide and erect a project notice board size 2.5m x 3.5m.</p> <p>F: V: T:</p>	Item	
27	<p>Add the following to the end of clause 19.3:</p> <p>The contractor shall re-instate/ rehabilitate the area used for site establishment the Contractors dedicated site/yard area as well as the access road from the entrance to the Contractors dedicated site/ yard area and the boundary between the Contractors dedicated site/ yard area and the Tenants laydown area as set out in Clause PS 6 of the CEMP Rev 8 January 2016 included in Part C3.4 in Envelope A: Volume 1 of 2 of these tender documents. (Note the Tenant's EPC Contractor will be responsible for re-instating their laydown area and the access road from the entrance to their laydown area).</p> <p>F: V: T:</p>	Item	
28	<p>Clause 20.0 - Nominated subcontractors</p>		
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	Refer to the provisions on general attendance hereinafter F: V: T:	Item	
29	Clause 21.0 - Selected subcontractors General attendance of n/s subcontractors for pricing by the contractor shall be in accordance with the n/s agreement. Notwithstanding this provision, general attendance shall be deemed to include for the contractor to provide free of charge to any n/s subcontractor such scaffolding as may reasonably be required by such n / s subcontractor for the execution of the relevant subcontract work F: V: T:	Item	
30	Clause 22.0 - Employer's direct contractors Work to be undertaken by the Employers direct contractors are the installation of the crane, MCC containers, tanks and associated equipment, utilities/ services, RO plant, scubbers, cooling tower, generator, compressor and high level walkways. F: V: T:	Item	
31	Clause 23.0 - Contractor's domestic subcontractors F: V: T:	Item	
	<u>Completion:</u>		
32	Clause 24.0 - Practical completion The contractor shall not receive any mark-up for overheads and profit on any omission of tenant installation work or tenant installation work by others. Claims of loss of profit shall not be entertained. F: V: T:	Item	
33	Clause 25.0 - Works completion F: V: T:	Item	
34	Clause 26.0 - Final completion F: V: T:	Item	
35	Clause 27.0 - Latent defects liability period F: V: T:	Item	
36	Clause 28.0 - Sectional completion F: V: T:	Item	
37	Clause 29.0 - Revision of date for practical completion The removal and replacement of materials and/or workmanship which do not conform to specification or drawing shall not constitute grounds for the extension of the construction period nor for the adjustment of the contract value (Clause 29.3) F: V: T:	Item	
38	Clause 30.0 - Penalty for late or non-completion F: V: T:	Item	
	<u>Payment</u>		
39	Clause 31.0 - Interim Payment		
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	The inclusion of materials and goods stored off site in the amount authorised for payment in terms of clause 31.4 shall be at the sole discretion of the principal agent and such inclusion shall only be considered upon the provision, by the contractor, of an approved guarantee issued by a registered commercial bank. Clause 31.6.5 is therefore not applicable. F: V: T:		
40	Clause 32.0 - Adjustment to the contract value Where prices are submitted by the contractor or n/s subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of the contract and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the final payment certificate, it shall be in writing. F: V: T:		
41	Clause 33.0 - Recovery of expense and loss F: V: T:	Item	
42	Clause 34.0 - Final account and final payment F: V: T:	Item	
43	Clause 35.0 - Payment to other parties F: V: T:	Item	
	<u>Cancellation</u>		
44	Clause 36.0 - Termination by employer - contractor's default F: V: T:	Item	
45	Clause 37.0 - Termination by employer - loss and damage F: V: T:	Item	
46	Clause 38.0 - Termination by contractor - employer's default F: V: T:	Item	
47	Clause 39.0 - Termination - cessation of the works F: V: T:	Item	
	<u>Dispute</u>		
48	Clause 40.0 - Settlement of disputes F: V: T:	Item	
	<u>Contract Agreement</u>		
49	Clause 41.0 - Post tender provisions The required post tender information shall be inserted in the post tender provisions after consultation with the contractor F: V: T:	Item	
50	Clause 42.0 - Contractual agreement F: V: T:	Item	
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	<u>SECTION B: PRELIMINARIES</u>		
	<u>Definitions and Interpretation</u>		
51	Clause 1.0 - Definitions and interpretation F: V: T:	Item	
	<u>Documents</u>		
52	Clause 2.1 - Checking of documents F: V: T:	Item	
53	Clause 2.2 - Provisional bills of quantities F: V: T:	Item	
54	Clause 2.3 - Availability of construction information F: V: T:	Item	
	<u>Previous work and adjoining properties</u>		
55	Clause 3.1 - Previous work - dimensional accuracy F: V: T:	Item	
56	Clause 3.2 - Previous work - defects F: V: T:	Item	
57	Clause 3.3 - Inspection of adjoining properties F: V: T:	Item	
	<u>Samples, shop drawings and manufacturer's instructions</u>		
58	Clause 4.1 - Samples of materials F: V: T:	Item	
59	Clause 4.2 - Workmanship samples F: V: T:	Item	
60	Clause 4.3 - Shop drawings F: V: T:	Item	
61	Clause 4.4 - Compliance with manufacturer's instructions F: V: T:	Item	
	<u>Deposits and fees</u>		
62	Clause 5.1 - Deposits and fees F: V: T:	Item	
	<u>Temporary services</u>		
63	Clause 6.1 - Water F: V: T:	Item	
64	Clause 6.2 - Electricity F: V: T:	Item	
65	Clause 6.3 - Telecommunication facilities F: V: T:	Item	
66	Clause 6.4 - Ablution facilities F: V: T:	Item	
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	<u>Prime cost amounts</u>		
67	Clause 7.1 - Responsibility for prime cost amounts F: V: T:	Item	
	<u>Special attendance on n/s subcontractors</u>		
68	Clause 8.1 - Special attendance F: V: T:	Item	
	<u>General</u>		
69	Clause 9.1 - Protection of the works F: V: T:	Item	
70	Clause 9.2 - Protection/isolation of existing/sectionally occupied works F: V: T:	Item	
71	Clause 9.3 - Security of the works F: V: T:	Item	
72	Clause 9.4 - Notice before covering work F: V: T:	Item	
73	Clause 9.5 - Disturbance F: V: T:	Item	
74	Clause 9.6 - Environmental disturbance F: V: T:	Item	
75	Clause 9.7 - Works cleaning and clearing F: V: T:	Item	
76	Clause 9.8 - Vermin F: V: T:	Item	
77	Clause 9.9 - Overhand work F: V: T:	Item	
	<u>Schedule of Variables</u>		
	Information necessary for making choices and completion of those clauses contained in the schedule which are necessary for tender purposes is given hereunder. Where no information is given it shall mean that either no details or specific requirements are available or that the clause is irrelevant for this specific contract.		
78	10.1 - Provisional Bills of Quantities [clause 2.2] The quantities are provisional - Yes 10.2 - Availability of construction documentation [clause 2.3] Construction documentation is complete - No 10.3 - Previous work - dimensional accuracy [clause 3.1] - No 10.4 - Previous work - defects [clause 3.2] - No 10.5 - Inspection of adjoining properties [clause 3.3] - Yes 10.6 - Water [clause 7.2] Option A (by contractor) - Yes		
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	Option B (by employer - free of charge) - No	
	Option C (by employer - metered) - No	
	10.7 - Electricity [clause 7.3]	
	Option A (by contractor) - Yes	
	Option B (by employer - free of charge) - No	
	Option C (by employer - metered) - No	
	10.8 - Telecommunications (clause 7.4)	
	Telephone - Yes	
	Facsimile - Yes	
	E-Mail - Yes	
	10.9 - Ablution facilities [clause 7.5]	
	Option A (by contractor) - Yes	
	Option B (by employer) - No	
	10.10 - Protection of the works [clause 9.1]	
	10.11 - Protection/isolation of existing/sectionally occupied works [clause 9.2]	
	Protection/isolation is required - Yes	
	10.13 - Environmental disturbance [clause 9.6] - Yes	
	F: V: T:	
	<u>SECTION C: SPECIFIC PRELIMINARIES</u>	
	<u>Specific Preliminaries :</u>	
	<u>C1. Site instructions:</u>	
79	Instructions issued on site are to be recorded in triplicate in a site instruction book which is to be maintained on site by the contractor	Item
	F: V: T:	
	<u>C2. Overtime:</u>	
80	Should overtime be required to be worked for any reason whatsoever, the costs of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, in writing, prior to execution thereof, that costs for such overtime are to be borne by the employer	Item
	F: V: T:	
	<u>C3. Dayworks:</u>	
81	Where in the opinion of the quantity surveyor any extra work cannot properly be measured or valued, the contractor will be allowed daywork prices therefor calculated upon the costs defined hereunder together with the stated percentages. The total thus arrived at shall be the total amount recoverable by the contractor for performing such work.	
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<p>1. The cost to the contractor or sub-contractor of materials, being the net cost (at current market prices) actually paid for such materials after the deduction of cash discounts or if materials are supplied from the contractor's or sub-contractor's stock then the cost of such materials shall be based upon the current market price plus the cost of delivery to site; to which net cost 10 per cent thereof shall be added.</p> <p>2. The cost of labour to the contractor or sub-contractor, being all items of direct cost of labour actually remunerated to the workmen concerned which shall include the cost of all allowances in terms of the Industrial Conciliation Act (where applicable) or any other wage determination applying in the area or any other charge or expense which is normally binding as well as all statutory levies to education and training funds as may be applicable relating to the class of labour concerned at the time when and in the area where the daywork is executed; to which labour costs 75 per cent in respect of shopfitting, wall and floor tiling, mosaic work and electrical work, 60 per cent in respect of plumbing, plastering, joinery and stone masonry and 40 per cent in respect of painting and decorating, general builders work and any other trade not specified herein, shall be added.</p> <p>Hourly based rates for labour shall be the current market rates for labour based upon standard working hours and shall be applied in respect of the time spent by workers directly engaged on the particular dayworks including any operators operating mechanical plant and transport and erecting and dismantling other plant. If a claim is made that individual workmen have been paid wages and allowances in excess of the minimum legalised rates, then proof must be furnished that such workmen had been so paid prior to the commencement of the extra work referred to. Time lost due to inclement weather shall be excluded from the time charged.</p> <p>3. Other direct costs, being any related direct costs such as mechanical plant and transport, other than costs of material and labour shall be the net cost thereof to which net cost 10 per cent thereof shall be added.</p> <p>4. The rates for mechanical plant shall be commercial hire rates current at the time of executing the daywork and shall include fuel and insurance costs. Supporting vouchers reflecting the time spent and materials used each week shall be delivered for verification to the Quantity Surveyor not later than twenty one days after the end of the week concerned. Should the contractor fail to submit the vouchers within this time, the Quantity Surveyor shall determine a fair price for the work.</p> <p>F: V: T:</p> <p>C4. Warranties for materials and workmanship:</p> <p>82 Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the entity supplying the materials and/or doing the work and shall deliver same to the principal agent on the final completion of the contract. The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of final completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice to do so. The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor.</p> <p>F: V: T:</p>	<p>Item</p> <p>Item</p>
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	<u>C5. Co-operation of the contractor for cost management:</u>	
83	<p>It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the final building cost does not exceed the budget. The principal agent undertakes to make available to the contractor all budgetary allowances and cost assessments/reports to enable the proper procedure to be implemented and the contractor shall attend all cost plan review and cost management meetings. The contractor undertakes to extend these procedures, as necessary, to all subcontractors.</p> <p>F: V: T:</p>	Item
	<u>C6. Overloading:</u>	
84	<p>The contractor shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the works or temporary works eg scaffolding, etc. The contractor shall submit details of his proposed loading, storage, plant erection, etc to the principal agent for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the principal agent's requirements in connection with the provision of temporary support work, etc. Any damage caused to the works by overloading shall be made good by the contractor at his sole expense.</p> <p>F: V: T:</p>	Item
	<u>C7. Propping of floors below:</u>	
85	<p>The contractor is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of materials and goods and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the principal agent and the cost thereof shall be borne by the contractor.</p> <p>F: V: T:</p>	Item
	<u>C7. Testing of windows for watertightness:</u>	
86	<p>Each window shall be tested for watertightness with water sprayed on using adequate pressure. If in the opinion of the principal agent, the pressure proves to be inadequate, then the pressure shall be boosted by means of compressed air or other approved means.</p> <p>F: V: T:</p>	Item
	<u>C8. Testing of flat roof waterproofing for watertightness:</u>	
87	<p>Flat roof waterproof areas shall be prepared with small sand dykes around them of a size and enclosing an area approved by the principal agent, flooded with water and kept 'ponded' for at least forty (40) hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing.</p> <p>F: V: T:</p>	Item
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	<u>C9. Ingress of water:</u>		
88	It is the Contractors responsibility to prevent ingress of water into the buildings whilst all work is being completed, and damage arising out of the above will be made good at the Contractors expense. F: V: T:	Item	
	<u>C10. Proprietary branded products:</u>		
89	The contractor shall take delivery of, handle, store, use, apply and/or fix all proprietary branded products in strict accordance with the manufacturer's instructions after consultation with the manufacturer's authorised representative. F: V: T:	Item	
	<u>C11. As built drawings:</u>		
90	The position of construction breaks and the extend of individual concrete pours are to be recorded by the contractor on the structural engineer's drawings and are to be submitted to the principal agent and the structural engineer for their records. F: V: T:	Item	
	<u>C12. Removal and Making Good of Temporary Works, etc, on Completion:</u>		
91	The Contractor shall remove all (except where specifically stated otherwise) temporary Works, roads, services and the like used for this Contract and shall make good to the entire satisfaction of the Principal Agent any damage resulting therefrom. F: V: T:	Item	
	<u>C13. Making Good:</u>		
92	All materials and workmanship in building up, making good, etc., are to match existing and where new materials abutt existing, they are to be neatly jointed to same. 'Making good' existing work where disturbed or damaged shall mean the provision of the necessary new material to match existing and the necessary workmanship so that a complete restoration is achieved to the satisfaction of the Principal Agent. 'Making good' where abutting walls, etc., are removed, shall mean the provision of the necessary material and workmanship in filling the gaps to match surrounding finishes so that a complete and perfect surface, continuous with surrounding surfaces and matching of same, is obtained to the Principal Agent's satisfaction. F: V: T:	Item	
	<u>C14. Shop Drawings:</u>		
93	The term 'shop drawings' shall mean drawings, layout drawings, diagrams, illustrations, schedules, performance charts, brochures, operating manuals and other data which are prepared by the Contractor or any Sub-Contractor, manufacturer, supplier or distributor and which illustrate the specified portion of the work. The Contractor shall ensure that all shop drawings required for the Works in terms of this Contract, all Selected/Nominated Sub-Contracts and/or any Principal Agent's instruction, are prepared and submitted timeously in accordance with the following procedure: A) Three prints of shop drawings of all fabricated work, working or setting out drawings, shop details and schedules shall be submitted to the Principal Agent, for approval. Such work shall not be carried out until such approval has been given.		
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	<p>B) Shop drawings shall be submitted to the Principal Agent for approval at least two weeks prior to the date on which such approval is required in order to comply with the Contract Programme.</p>		
	<p>C) All submissions shall be prepared in accordance with the Contract drawings and specifications and/or any Principal Agents instructions and any deviation shall be specifically highlighted in writing, with a detailed explanation of the reason for such deviation, together with any cost and/or time implications. Delays in approval of shop drawings due to non-compliance with drawings, specifications and/or Principal Agents instructions shall not constitute grounds for any claims for delay, extension of time and the like.</p>		
	<p>D) When the Principal Agent advises that shop drawings have been approved, the original transparencies of such drawings shall immediately be submitted to the Principal Agent so that the Principal Agents stamp of approval may be appended thereto. Thereafter, four prints of the approved shop drawings, setting out drawings and schedules shall be furnished to the Principal Agent. As many prints of the approved shop drawings and schedules as required shall also be furnished to the Works. No work shall be performed in accordance with drawings and/or catalogues not stamped with the Principal Agents approval.</p>		
	<p>E) The Contractor, Sub-Contractor or Supplier, as the case may be, shall be responsible for ensuring that all dimensions affecting shop drawings conform to the dimensions of built work.</p>		
	<p>F) The Principal Agents approval of shop drawings is limited to checking conformity with specification and shall not relieve the Contractor, Sub-Contractor or Supplier of his responsibility for design, erection or installation fit, nor does it vary his contractual or delictual obligations and liabilities.</p>		
	<p>G) Should the Contractor, Sub-Contractor or Supplier be of the opinion that corrections to shop drawings made by the Principal Agent constitute a change to the scope of work, then he shall immediately advise the Principal Agent in writing of this, together with the cost and/or programme implications thereof, in order to obtain the Architects directive.</p>		
	<p>H) One copy of the final approved set of 'Shop Drawings' is to be submitted to the Quantity Surveyors for purposes of valuation remeasurement.</p>	Item	
	<p>F: V: T:</p>		
	<p><u>C15. Scaffolding:</u></p>		
94	<p>In accordance with the 6th Edition of the Standard System of Measurement, no special scaffolding has been measured. The Tenderer is to note that the entire factory portion of the building an area of approximately 2520m2 exceeds five meters in height and the tenderer is to study the drawings to assess any special requirements he may deem necessary for the Works. The Tenderer is to price against this item in respect of any special scaffolding and temporary propping requirements for the Works.</p>	Item	
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	<u>C16. Media releases:</u>		
95	All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the employer. The contractor together with his subcontractors shall not, without the prior written consent of the employer, cause any statement or advertisement to be printed, screened or aired by the media. F: V: T:	Item	
	<u>C17. HIV/AIDS awareness:</u>		
96	It is required of the Contractor to thoroughly study the HIV/AIDS Specification that must be read together with and is deemed to be incorporated under this Section of the Bills of Quantities / Lump Sum Document. Provision for pricing of HIV/AIDS awareness is made under items C17.1 to C17.5 hereafter and it is explicitly pointed out that all requirements of the aforementioned specification are deemed to be priced hereunder, as the said items represent the only method of measurement and no additional items or extras to the contract in this regard shall be entertained. The Contractor must take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the Principal Agent, notwithstanding the provisions of Clause A 31.0 or any other clause to the contrary, reserves the right to delay issuing any progress payment certificate until the Contractor provides satisfactory proof of compliance. The Contractor shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment. F: V: T:	Item	
	<u>C17.1 Awareness champion:</u>		
97	Selection, appointment, briefing and making available of an Awareness Champion including provision of all relevant services, all in accordance with the HIV/AIDS Specification. F: V: T:	Item	
	<u>C17.2 Awareness workshops:</u>		
98	Selection and appointment of a competent Service Provider approved by the Principal Agent, provision of a Service Provider Workshop Plan and a suitable venue, conducting of awareness workshops by means of traditional and/or modern multi-media techniques, including follow-up courses, making available all tuition material and performing assessment procedures, all in accordance with the HIV/AIDS Specification. F: V: T:	Item	
	<u>C17.3 Posters, booklets, videos etc.:</u>		
99	Provision, displaying, maintaining and replacing when necessary of four plastic laminated posters, booklets and educational videos, etc. for the duration of the construction period, all in accordance with the HIV/AIDS Specification. F: V: T:	Item	
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	<u>C17.4 Access to condoms:</u>		
100	Provision and maintenance of condom dispensers fixed in position, including male and female condoms, replenishing male and female condoms on a daily basis as required for the duration of the construction period, all in accordance with the HIV/AIDS Specification. F: V: T:	Item	
	<u>C17.5 Monitoring:</u>		
101	Monitoring HIV/AIDS awareness of workers, providing the principal agent with access to information including making available all reports, thoroughly completed reflecting the correct information, for the duration of the construction period and close out, all in accordance with the HIV/ AIDS Specification F: V: T:	Item	
	<u>C18. SMME'S:</u>		
102	The principal contractor shall comply with all the requirement of mandatory subcontracting of SMMEs for a minimum of 30% of their contract value (Including VAT) as stipulated under the SMME subcontracting requirements. The Principal Contractor shall on fulltime basis closely mentor, manage and supervise all SMMEs and shall manage, guide and assist each SMMEs in all aspects of management, execution and completion of his/her subcontract. This shall typically include the on-site productivity planning and management of materials, cost management, contract management, Health and Safety management, quality management, communication management and close-out documentation. Provision for pricing of compliance with the aforementioned is made under this clause and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained. F: V: T:	Item	
	<u>C19. Employment of interns:</u>		
103	The Contractor shall for the duration of the contract (7 months) employ two interns. The interns must have completed a three year qualification in the Built Environment, must be currently unemployed and not have had an internship opportunity before. The interns must be paid a stipend of R 150 000.00 per annum. F: V: T:	Item	
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SECTION SUMMARY

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SECTION NO. 2

BUILDING WORKS

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 1</u></p> <p style="text-align: center;"><u>EARTHWORKS</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Note:</u></p> <p>Note: The removal of bitumen paving has not been measured, and forms part of the relevant excavations. No payment will be made for the removal of bitumen pavings when it forms part of areas to be excavated.</p> <p><u>Nature of ground:</u></p> <p>A soils investigation has been carried out on the site and the Geotechnical report is included in Part C5 of these Bills of Quantities.</p> <p><u>Carting away of excavated material:</u></p> <p>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.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2</p> <p>Bill No. 1</p> <p>Earthworks</p>				
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Item		Unit	Quantity	Rate	Amount
	<p><u>Demolition:</u></p> <p>The contractor is to visit the site, and inspect the works to be demolished and price accordingly. No claims for additional cost in regard of demolitions will be considered.</p> <p><u>Working space:</u></p> <p>Working space for formwork to sides of all concrete, except columns, has been measured only where the concrete face is less than 600mm from the face of the measured excavation.</p> <p>Working space for formwork to sides of columns has been measured for the width of the column face only where both: the top of the column base is more than 1,5 m below the commencing level of the excavation, and the column face is less than 600 mm from the face of the measured excavation.</p> <p>No claim will be considered for any working space for formwork to concrete other than as described above nor for working space beyond the sides of trench excavations for the building of brick or block walls.</p> <p>Descriptions of excavations for working space shall be deemed to include any additional risk of collapse so incurred and the returning and compacting of the excavated material as described.</p> <p><u>Filling:</u></p> <p>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.</p> <p><u>EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)</u></p> <p><u>Excavation in earth not exceeding 2m deep:</u></p> <p>1 Trenches. m³ 300</p> <p>Fa 1 230 Offi 70</p> <p>2 Holes. m³ 519</p> <p>Fa 1 284 Offi 26 STR1 209</p> <p>3 Thickening under surface beds etc. m³ 66</p> <p>Offi 35 STR1 31</p> <p><u>Excavation in earth exceeding 2m and not exceeding 4m deep:</u></p> <p>4 Trenches. m³ 18</p> <p>Fa 1 18</p> <p>5 Holes. m³ 25</p> <p>Fa 1 25</p> <p>TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2</p> <p>Bill No. 1</p> <p>Earthworks</p>				
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Item		Unit	Quantity	Rate	Amount
	<u>Excavation of vertical sides of excavation in earth for working space including backfilling compacted to 98% Mod. AASHTO maximum density:</u>				
6	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to bund walls, against excavated face.	m ²	89		
	STR1 89				
7	Extra over for excavation in soft rock.	m ²	18		
	STR1 18				
8	Extra over for excavation in hard rock.	m ²	62		
	STR1 62				
9	Exceeding 500mm and not exceeding 1,5m deep for erection and removal of formwork to retaining walls, 225mm away from excavated face.	m ²	45		
	Fa 1 45				
10	Extra over for excavation in soft rock.	m ²	7		
	Fa 1 7				
11	Extra over for excavation in hard rock.	m ²	26		
	Fa 1 26				
12	Exceeding 500mm and not exceeding 1,5m deep for erection and removal of formwork to retaining walls, 375mm away from excavated face.	m ²	104		
	Fa 1 13 Offi 91				
13	Extra over for excavation in soft rock.	m ²	21		
	Fa 1 3 Offi 18				
14	Extra over for excavation in hard rock.	m ²	73		
	Fa 1 9 Offi 64				
15	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to retaining walls, 375mm away from excavated face.	m ²	256		
	Fa 1 219 Offi 37				
16	Extra over for back excavation in soft rock.	m ²	51		
	Fa 1 44 Offi 7				
17	Extra over for back excavation in hard rock.	m ²	180		
	Fa 1 154 Offi 26				
18	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to foundation columns, 275mm away from excavated face.	m ²	7		
	Fa 1 7				
19	Extra over for back excavation in soft rock.	m ²	7		
	Fa 1 7				
20	Extra over for back excavation in hard rock.	m ²	7		
	Fa 1 7				
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Item		Unit	Quantity	Rate	Amount
21	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to foundation columns , 400mm away from excavated face.	m ²	2		
	Fa 1 2				
22	Extra over for back excavation in soft rock.	m ²	1		
	Fa 1 1				
23	Extra over for back excavation in hard rock.	m ²	2		
	Fa 1 2				
24	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to foundation columns , 425mm away from excavated face.	m ²	30		
	Offi 30				
25	Extra over for back excavation in soft rock.	m ²	6		
	Offi 6				
26	Extra over for back excavation in hard rock.	m ²	21		
	Offi 21				
27	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to foundation columns , 500mm away from excavated face.	m ²	9		
	Fa 1 9				
28	Extra over for back excavation in soft rock.	m ²	2		
	Fa 1 2				
29	Extra over for back excavation in hard rock.	m ²	6		
	Fa 1 6				
30	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to foundation columns , 575mm away from excavated face.	m ²	28		
	Fa 1 23 Offi 5				
31	Extra over for back excavation in soft rock.	m ²	18		
	Fa 1 17 Offi 1				
32	Extra over for back excavation in hard rock.	m ²	24		
	Fa 1 21 Offi 3				
33	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to foundation columns , 600mm away from excavated face.	m ²	15		
	Fa 1 15				
34	Extra over for back excavation in soft rock.	m ²	3		
	Fa 1 3				
35	Extra over for back excavation in hard rock.	m ²	4		
	Fa 1 4				
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Item		Unit	Quantity	Rate	Amount
	<u>Extra over excavations other than bulk in earth for excavation in:</u>				
36	Soft rock.	m ³	134		
	Fa 1 102 Offi 26 STR1 6				
37	Hard rock.	m ³	470		
	Fa 1 356 Offi 92 STR1 22				
	<u>Risk of collapse of excavations other than bulk:</u>				
38	Sides of trenches and hole excavations not exceeding 1,5m deep.	m ²	492		
	Fa 1 492				
39	Sides of trench and hole excavations exceeding 1,5m deep.	m ²	1,032		
	Fa 1 593 Offi 302 STR1 137				
	<u>CARTING AWAY. (CPAP Work Group No 104)</u>				
	<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
40	Off site to a dumping site to be found by the Contractor.	m ³	849		
	Fa 1 486 Offi 123 STR1 240				
	<u>KEEPING EXCAVATIONS FREE OF WATER (CPAP Work Group No 104)</u>				
	<u>Keeping excavations free of water:</u>				
41	Keeping excavations free of all water other than subterranean water.	Item	1		
	Item 1				
	<u>EARTH FILLING, ETC. (CPAP Work Group No 104)</u>				
	<u>Filling with material obtained from the excavations and/or prescribed stock piles compacted to a density of at least 95% Mod. AASHTO maximum density:</u>				
42	Backfilling to trenches, holes, etc.	m ³	65		
	Fa 1 57 Offi 8				
	<u>Filling with approved G7 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 95% Mod AASHTO density.</u>				
43	Backfilling to trenches, holes, etc.	m ³	202		
	Fa 1 155 Offi 40 STR1 7				
44	Backfilling to behind retaining walls, etc.	m ³	26		
	Fa 1 20 Offi 6				
	<u>Filling over site of G5 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 95% Mod AASHTO density.</u>				
45	Under floors, pavings, etc.	m ³	403		
	Fa 1 335 Offi 51 STR1 17				
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Item		Unit	Quantity	Rate	Amount
46	Backfilling to trenches, holes, etc. Fa 1 28 Offi 4 <u>Filling over site of G5 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 98% Mod AASHTO density.</u>	m ³	32		
47	Under floors, pavings, etc. Fa 1 335 Offi 51 STR1 17 <u>Coarse river sand filling compacted to 95% Mod. AASHTO maximum density:</u>	m ³	403		
48	Under floors, etc. Fa 1 112 Offi 18 STR1 6 <u>Clear stone and coarse river sand filling in ratio of 60% stone and 40% sand compacted to 95% Mod. AASHTO maximum density :</u>	m ³	136		
49	Under floors, etc. Fa 1 207 STR1 11 <u>Surface Preparation:</u>	m ³	218		
50	Trim and level off surface of ground (excavated or filled under this contract) to receive concrete surface beds, including excavating or filling, ripping and scarifying and stabilised with 2 percent cement as necessary and compacting the whole area for a depth of 150mm to a density of at least 93% Mod. AASHTO maximum density, part to falls. Fa 1 2234 Offi 338 STR1 113 <u>TESTS (CPAP Work Group No 104)</u> <u>Prescribed density tests on filling:</u>	m ²	2,685		
51	Modified AASHTO Density test. Fa 1 40 Offi 10	No	50		
52	CBR test in accordance with method A8 of TMH1. Fa 1 2	No	2		
53	DCP Tests. Fa 1 5	No	5		
54	UCS Tests. Fa 1 12 <u>SOIL POISONING (CPAP Work Group No 104)</u> <u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u>	No	12		
55	Under floors, etc., including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming. Fa 1 2234 Offi 338 STR1 113	m ²	2,685		
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Earthworks

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Item	Unit	Quantity	Rate	Amount
<p><u>Breeze Concrete:</u></p> <p>Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (12:1), the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated.</p> <p><u>Foamcement Lightweight Concrete:</u></p> <p>Foamcement lightweight concrete is to have a density of 600kg/m3 for the top 50mm and 500kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc. shall be 50mm.</p> <p><u>Celbeton Lightweight Concrete:</u></p> <p>Celbeton lightweight concrete is to have a density of 1000kg/m3 for the top 20mm and 408kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc. shall be 30mm.</p> <p><u>Formwork:</u></p> <p>Descriptions of formwork shall be deemed to include use and waste only (except where described as left in or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.</p> <p>The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.</p> <p>Formwork to soffits of solid slabs etc., shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described.</p> <p>Formwork to sides of bases, pile caps, ground beams, etc., will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks.</p> <p><u>UNREINFORCED CONCRETE(CPAP Work Group No 110)</u></p> <p><u>20Mpa/19mm Concrete</u></p>				
1	m ³	3		
<p>Fa 1 3</p>				
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Item		Unit	Quantity	Rate	Amount
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>10Mpa/19mm Concrete:</u>				
2	Surface blinding under footings and bases.	m ³	90		
	Fa 1 74 Offi 10 STR1 6				
3	Mass concrete fill under bases.	m ³	30		
	Fa 1 30				
	<u>30Mpa/19mm Concrete:</u>				
4	Bases.	m ³	2		
	Fa 1 2				
5	Steps, urinal steps, kerbs, bund walls, cupboard platforms, etc.	m ³	1		
	Offi 1				
6	Plinths.	m ³	5		
	Fa 1 5				
	<u>REINFORCED CONCRETE (CPAP Work Group No 110)</u>				
	<u>30MPa/19mm Concrete:</u>				
7	Retaining walls.	m ³	102		
	Fa 1 71 Offi 31				
8	Stairs including landings, beams and inverted beams.	m ³	8		
	Offi 8				
9	Columns in foundations.	m ³	54		
	Fa 1 50 Offi 4				
10	Columns.	m ³	12		
	Fa 1 12				
11	Slabs including beams and inverted beams.	m ³	65		
	Fa 1 65				
12	Plinths.	m ³	189		
	Fa 1 2 STR1 187				
13	Bund walls.	m ³	35		
	STR1 35				
14	Ground beams.	m ³	19		
	Fa 1 19				
	<u>35MPa/19mm Concrete:</u>				
15	Ground beams.	m ³	2		
	Fa 1 2				
	<u>40Mpa/19mm Concrete with Xypex Admx C-500 NF 9kg/m3 percent by weight additive in strict accordance with the manufacturer's instructions:</u>				
16	Bund walls.	m ³	22		
	STR1 22				
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Item		Unit	Quantity	Rate	Amount
	<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u> <u>30Mpa/19mm Concrete:</u>				
17	Strip footings. Fa 1 27	m ³	27		
18	Retaining wall strip footings. Fa 1 24 Offi 12	m ³	36		
19	Bases. Fa 1 145 Offi 5	m ³	150		
	<u>35MPa/19mm Concrete with and including washed sand and 'Fibrin' fibre at 900g/m3:</u>				
20	Surface beds cast in panels on waterproofing all in accordance with the manufacturers instructions. (FM2) Fa 1 413	m ³	413		
21	Surface beds cast in panels on waterproofing all in accordance with the manufacturers instructions. Fa 1 22 Offi 70 STR1 24	m ³	116		
	<u>40Mpa/19mm Concrete with Xypex Admx C-500 NF 9kg/m3 percent by weight additive in strict accordance with the manufacturer's instructions:</u>				
22	Surface beds cast in panels on waterproofing all in accordance with the manufacturers instructions. STR1 23	m ³	23		
	<u>TEST BLOCKS (CPAP Work Group No 110)</u> <u>Test blocks:</u>				
23	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes. Fa 1 79 Offi 13 STR1 43	Sets	135		
	<u>FINISHING TOP SURFACE OF CONCRETE. (CPAP Work Group No 110)</u> <u>Finishing top surfaces of concrete smooth with a wood float:</u>				
24	Surface beds, slabs, etc. Fa 1 12	m ²	12		
	<u>Finishing top surfaces of concrete smooth with a steel trowel:</u>				
25	Tops of beams, walls, etc. Fa 1 60 Offi 12 STR1 96	m ²	168		
26	Plinth etc. STR1 216	m ²	216		
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Item		Unit	Quantity	Rate	Amount
	<u>Finishing top surfaces of concrete smooth with a power float:</u>				
27	Surface beds, slabs, etc. Fa 1 1040 Offi 338 STR1 113 <u>Finishing top surfaces of concrete smooth with a power float with stainless steel blades to floor classification FM2 Free- movement areas as defined by Supplement to Concrete Society Technical Report No.34 and including 'Armconcrete 330' Grey non-metallic dry dry shake floor hardener at (7kg/m²) and curing with 'Armconcrete 1100' using a spray mist or paint roller a rate of approximately 8l/m² all in strict accordance with the manufacturer's instructions:</u>	m²	1,491		
28	Surface beds, slabs, etc. Fa 1 1381 <u>Beveled edges, etc:</u>	m²	1,381		
29	Form 3mm radius beveled edge to top corner of surface beds. Fa 1 369 Offi 472 <u>GROUTING (CPAP Work Group No 110)</u> <u>35MPa non-shrink grout:</u>	m	841		
30	Bedding approximately 30mm thick under 150 x 150mm base plate including chamfered edges all round. STR1 32	No	32		
31	Bedding approximately 30mm thick under 250 x 350mm base plate including chamfered edges all round. Fa 1 6	No	6		
32	Bedding approximately 30mm thick under 300 x 300mm base plate including chamfered edges all round. Fa 1 8	No	8		
33	Bedding approximately 30mm thick under 300 x 400mm base plate including chamfered edges all round. Fa 1 33 Offi 6	No	39		
34	Bedding approximately 30mm thick under 350 x 350mm base plate including chamfered edges all round. Offi 19	No	19		
35	Bedding approximately 30mm thick under 350 x 450mm base plate including chamfered edges all round. Fa 1 22	No	22		
36	Bedding approximately 30mm thick under 350 x 550mm base plate including chamfered edges all round. Fa 1 12	No	12		
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Item		Unit	Quantity	Rate	Amount
37	Bedding approximately 30mm thick under 400 x 400mm base plate including chamfered edges all round. Offi 2 STR1 37	No	39		
38	Bedding approximately 30mm thick under 450 x 300mm base plate including chamfered edges all round. Fa 1 6	No	6		
<u>SUNDRIES (CPAP Work Group No 110)</u>					
<u>Grooves, channels, mortices, sinkings, etc., in concrete:</u>					
39	Form 300mm wide x average 350mm deep rectangular channel in top of surface bed. (additional concrete and excavation etc., to accommodate channels elsewhere measured). STR1 51	m	51		
40	Form 300mm wide x average 400mm deep rectangular channel in top of surface bed. (additional concrete and excavation etc., to accommodate channels elsewhere measured). STR1 34	m	34		
41	Form 500 x 500 x 500mm Recess sump in surface bed. (additional concrete and excavation etc., to accommodate channels elsewhere measured). STR1 5	No	5		
<u>Sundries:</u>					
42	Allow for temporary protection of the warehouse factory floor, from the elements during during placement of the concrete and surface preparation of the concrete and thereafter for minimum period of 5 to 7 days from the placement of concrete, if the programme does not permit the floor to be cast / constructed once the building envelope is completed and opening closed. The Contractor is also to allow for protecting the floor from damage during the construction of other trades until practical completion of the section is achieved. The Contractor shall be liable to repair any damage caused during the construction period at his own cost to the satisfaction of the Principal Agent. No claims or further claims in this respect Item 1	Item	1		
43	Take delivery of holding down bolts and cast into exact position in top of column or base including forming 100mm x 100mm x 200mm deep pocket around top of bolt, etc., and including filling pocket with 30Mpa non shrink grout, when grouting base plate. (grouting base plate elsewhere). Fa 1 408 Offi 84 STR1 428	No	920		
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Item		Unit	Quantity	Rate	Amount
44	Take delivery of 150mm diameter by 300mm NB100 316 stainless steel puddle flanges and cast into exact position in side of bund wall, including forming holes etc through sides of smooth formwork to bund walls.	No	8		
	STR1 8				
45	Take delivery of 3800mm diameter steel tank bolt template, in two sections to be bolted into position and cast into exact position in top of tank plinth.	No	7		
	STR1 7				
46	Take delivery dock lever frames supplied by others and cast into edge of concrete. (frame 100 x 100 x 8mm angle section frame approximatley 12mm long with 6 corners/ angles)	No	2		
	Fa 1 2				
47	Cast end of 80 x 80 x 4mm square hollow section column with 350 x 350 x 10mm plate welded on one end 150mm deep into exact position in top of concrete column or base including painting embedded section with two coats bitumen paint. (Columns for stairs)	No	10		
	Fa 1 10				
48	Fine asphalt bedding 1900mm diameter x 30mm thick on top of concrete circular plinths under tanks. (tanks to be supplied and installed by tenant)	No	1		
	STR1 1				
49	Fine asphalt bedding 2900mm diameter x 30mm thick on top of concrete circular plinths under tanks. (tanks to be supplied and installed by tenant)	No	3		
	STR1 3				
50	Fine asphalt bedding 3400mm diameter x 30mm thick on top of concrete circular plinths under tanks. (tanks to be supplied and installed by tenant)	No	1		
	STR1 1				
51	Fine asphalt bedding 3900mm diameter x 30mm thick on top of concrete circular plinths under tanks. (tanks to be supplied and installed by tenant)	No	2		
	STR1 2				
52	Fine asphalt consisting of graded sand and 8 percent bitumen laid hot bedding 4200mm diameter x 30mm thick on top of concrete circular plinths under tanks. (tanks to be supplied and installed by tenant)	No	6		
	STR1 6				
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
<u>ROUGH FORMWORK (DEGREE OF ACCURACY II)</u> <u>(CPAP Work Group No 111)</u>					
<u>Rough Formwork to Sides:</u>					
53	Retaining walls.	m ²	457		
	Fa 1 320 Offi 137				
54	Bases.	m ²	237		
	Fa 1 222 Offi 15				
55	Ground beams.	m ²	130		
	Fa 1 130				
56	Rectangular columns in foundations.	m ²	338		
	Fa 1 303 Offi 35				
57	Rectangular columns propped up exceeding 5,0m and not exceeding 6,5m above bearing level.	m ²	72		
	Fa 1 72				
58	Ground beams.	m ²	9		
	Fa 1 9				
59	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	180		
	Fa 1 117 Offi 63				
60	Sloping and stepped outer edges of stairs not exceeding 300mm high extreme.	m	19		
	Offi 19				
<u>Rough Formwork to Soffits:</u>					
61	Slabs not exceeding 250mm thick propped up exceeding 3,5m high and not exceeding 5,0m high.	m ²	11		
	Fa 1 11				
62	Slabs exceeding 250mm thick and not exceeding 500mm thick propped up exceeding 3,5m high and not exceeding 5,0m high.	m ²	175		
	Fa 1 175				
<u>Rough Formwork to Sides and soffits:</u>					
63	Beams, propped exceeding 5,0m and not exceeding 6,5m.	m ²	51		
	Fa 1 51				
64	Sloping beams to stairs.	m ²	17		
	Offi 17				
<u>Boxing in rough formwork to form:</u>					
65	25 x 25mm Chamfers along vertical edges.	m	134		
	Fa 1 96 Offi 38				
TOTAL CARRIED TO BILL SUMMARY				R	
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Concrete, Formwork And Reinforcement					

Item		Unit	Quantity	Rate	Amount
<u>SMOOTH FORMWORK (DEGREE OF ACCURACY II)</u>					
<u>(CPAP Work Group No 111)</u>					
<u>Smooth Formwork to Sides:</u>					
66	Retaining walls.	m ²	457		
	Fa 1 320 Offi 137				
67	Rectangular columns propped up exceeding 5,0m and not exceeding 6,5m above bearing level.	m ²	36		
	Fa 1 36				
68	Bund walls propped up not exceeding 3,5m.	m ²	443		
	STR1 443				
69	Inverted beams above concrete.	m ²	16		
	Fa 1 16				
70	One side of Bund walls propped up not exceeding 3,5m with one face against existing concrete surfaces (at double walls).	m ²	6		
	STR1 6				
71	Ground beams above concrete.	m ²	10		
	Fa 1 10				
72	Stub columns.	m ²	204		
	STR1 204				
73	Plinths.	m ²	157		
	STR1 157				
74	Plinths circular to not exceeding 1m radius	m ²	8		
	STR1 8				
75	Plinths circular to exceeding 1m radius	m ²	122		
	STR1 122				
76	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	19		
	Fa 1 15 Offi 4				
<u>Smooth Formwork to Soffits:</u>					
77	Landings.	m ²	6		
	Offi 6				
78	Stairs with sloping soffits.	m ²	15		
	Offi 15				
<u>Boxing in Smooth Formwork to Form:</u>					
79	25 x 25mm Chamfers along top or bottom edges.	m	1,527		
	Fa 1 377 Offi 62 STR1 1088				
80	25 x 25mm Chamfers along top or bottom, circular to exceeding 1m radius	m	151		
	STR1 151				
81	25 x 25mm Chamfers along vertical edges.	m	1,002		
	Fa 1 200 STR1 802				
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
	<u>MOVEMENT JOINTS, ETC (CPAP Work Group No 111)</u>				
	<u>2 Layers of 3 ply malthiod slip joints between horizontal concrete surfaces:</u>				
82	Exceeding 300mm wide. Offi 43	m ²	43		
83	Not exceeding 300mm wide. Fa 1 57 Offi 65	m	122		
	<u>'Sondor Jointex' closed cell expanded polyethylene joint former with hinged temporary blocking piece between vertical concrete surfaces including necessary formwork:</u>				
84	10mm Joints exceeding 300mm high through bund walls. STR1 23	m ²	23		
85	10mm Joints not exceeding 300mm high. STR1 59	m	59		
86	20mm Joints not exceeding 300mm high. Fa 1 384 Offi 73	m	457		
	<u>'Sondor Jointex' closed cell expanded polyethylene joint former with hinged temporary blocking piece between vertical concrete and brick surfaces:</u>				
87	10mm Joints exceeding 300mm high through walls. Fa 1 17	m ²	17		
88	20mm Joints not exceeding 300mm high. Fa 1 121 Offi 472	m	593		
	<u>Saw cut joints:</u>				
89	Saw cut joint in top of concrete formed of a 3mm x 75mm first cut not later than 1 day after casting concrete and 10mm x 35mm second cut at top of joint made 21 days after casting. Fa 1 451 Offi 30	m	481		
	<u>Vertical joggle construction joints through concrete including applying bond breaker to mating face and finishing joint with a nosing tool:</u>				
90	Surface beds not exceeding 300mm thick. Fa 1 67	m	67		
	<u>'Permaban Alphajoint Classic 4010' with flangible fixing system, 10mm wide galvanised cold drawn square edge steel joint arris amouring, shear stud anchors, steel sheet formwork, plate dowel sleeves and 151 x 120 x 8mm diamond plate dowels at 600mm centres, construction joints through concrete installed complete in strict accordance with the manufacturer's instructions:</u>				
91	200mm Thick surface beds. Fa 1 15	m	15		
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
	<u>Horizontal construction joints through concrete including 1.0kg/m2 1.25mm thick 'Xypex Concentrate 07160' cementitious slurry coat and 28 x 12mm thick 'Xypex Kuniseal C-31DS' pressed to concrete and pinched to triangular shape concrete joint waterproofing material to one face applied in strict accordance with the manufacturer's instructions:</u>				
92	Surface beds not exceeding 300mmm thick. STR1 11	m	11		
93	Between surface beds and bund walls not exceeding 300mm thick. STR1 59	m	59		
	<u>REINFORCEMENT (CPAP Work Group No 114)</u>				
	<u>Mild steel reinforcement to structural concrete work:</u>				
94	12mm Diameter bars. Fa 1 0.65 Offi 0.1	Tonnes	0.75		
95	10mm Diameter bars. Fa 1 3.64 Offi 0.43 STR1 2.5	Tonnes	6.57		
96	8mm Diameter bars. Fa 1 1.55 Offi 0.34	Tonnes	1.89		
	<u>High tensile steel reinforcement to structural concrete work:</u>				
97	40mm Diameter bars. Fa 1 3.82 Offi 0.21 STR1 7.42	Tonnes	11.45		
98	32mm Diameter bars. Fa 1 6.76 Offi 0.31 STR1 7.42	Tonnes	14.49		
99	25mm Diameter bars. Fa 1 8.02 Offi 0.31 STR1 7.42	Tonnes	15.75		
100	20mm Diameter bars. Fa 1 7.85 Offi 1.46	Tonnes	9.31		
101	16mm Diameter bars. Fa 1 6.74 Offi 1.14	Tonnes	7.88		
102	12mm Diameter bars. Fa 1 2.8 Offi 0.69	Tonnes	3.49		
103	10mm Diameter bars. Fa 1 0.92 Offi 0.34	Tonnes	1.26		
	<u>Fabric reinforcement:</u>				
104	Type 193 fabric reinforcement in concrete surface beds etc. Fa 1 167 Offi 338	m²	505		
105	Type 617 fabric reinforcement in concrete surface beds etc. Fa 1 4134 STR1 226	m²	4,360		
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
106	Type 193 fabric reinforcement in thickening to concrete surface beds etc. Offi 140 STR1 278 <u>Mild tensile steel dowel bars:</u>	m²	418		
107	12mm Diameter dowel bar 150mm long with one end embedded 75mm deep in concrete plinths and the other end doweled into concrete surface bed and epoxied in with 'Hilti HIT HY 170' including drilling hole in concrete etc, installed complete. Fa 1 156 Offi 1	No	157		
108	Y16 dowel bar 170mm long with one end embedded 75mm deep in concrete plinths and the other end doweled into concrete surface bed and epoxied in with 'Hilti HIT HY 200' including drilling hole in concrete etc, installed complete. STR1 1829	No	1,829		
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Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>Bill No. 3</u> <u>PRECAST CONCRETE</u></p> <p><u>Key:</u> <u>Location Description:</u> Item ITEM Fa 1 FACTORY PH 1 Offi OFFICE STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u> <u>Trade Preambles:</u> For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> <u>Proprietary items or materials:</u> Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u> The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Sizes:</u> Blocks, sills, etc measured linear shall be made in suitable lengths. Large size setting out drawings shall be prepared where necessary and submitted to the principal agent for approval before moulds are made</p> <p><u>General:</u> Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming</p> <p><u>PRE-STRESSED HOLLOW CORE CONCRETE SLABS (CPAP Work Group No 112)</u> <u>Supplementary Preambles:</u> Manufacturers Details: 'Shukuma Flooring': Telephone : (043) 732 1401. E-mail : Ruan Swart: ruan@shukumaflooring.co.za</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2 Bill No. 3 Precast Concrete</p>				
			R	

Item		Unit	Quantity	Rate	Amount
	<p>The following pre-stressed hollow core slabs are to be manufactured / supplied by 'Messrs Shukuma Flooring' and installed in strict accordance with the manufacturer / suppliers specifications.</p> <p>The Tenderer is referred to the relevant 'Shukuma Flooring' documents, brochures, specifications, installation instructions and handbooks etc which refer to the products and which are handed out and updated from time to time.</p> <p>Prices for pre-stressed hollow core slabs are to include for hoisting into position, placing in position and casting of joint filling.</p> <p>Before placing any topping or levelling screed, all joints must be filled with a grout. Materials for Grout to be supplied by the Contractor and mixed, and placed by 'Shukuma Flooring'. Grout materials to be supplied by Contractor measured separately.</p> <p><u>'Shukuma Flooring' pre-stressed hollow core slabs erected onto steelwork 3,5m above ground floor level, including grouting of longitudinal joints with materials supplied by the Contractor. All in accordance with the manufacturers specifications.:</u></p>				
1	<p>250mm Thick 'Shukuma' floor slabs with H+2 wiring pattern laid on steel beams, joints to be grouted with 25Mpa (6.9-9mm) concrete and all slab end to be filled with 25Pma concrete. (beams elsewhere measured).</p> <p>Offi 386</p>	m ²	386		
2	<p>Notching around 250mm Thick 'Shukuma' floor slabs around 203 x 203 x 46kg/m UC steel columns.</p> <p>Offi 18</p> <p><u>Grouting material to be supplied by the Contractor to 'Shukuma Flooring':</u></p>	No	18		
3	<p>Crusher dust.</p> <p>Offi 6</p>	m ³	6		
4	<p>Cement.</p> <p>Offi 64</p> <p><u>REINFORCEMENT (CPAP Work Group No 114)</u></p> <p><u>Fabric reinforcement to precast concrete:</u></p>	No	64		
5	<p>Type 193 fabric reinforcement in 50mm screeds.</p> <p>Offi 386</p>	m ²	386		
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Precast Concrete

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<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 4</u></p> <p style="text-align: center;"><u>MASONRY</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>BRICKWORK</u></p> <p><u>Sizes in descriptions:</u></p> <p>Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick.</p> <p><u>Hollow walls etc:</u></p> <p>Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2</p> <p>Bill No. 4</p> <p>Masonry</p>				
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Item		Unit	Quantity	Rate	Amount
	Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats 'Brixal' bitumen emulsion waterproofing coating.				
	<u>Face bricks:</u>				
	Bricks shall be ordered timeously to obtain uniformity in size and colour.				
	<u>Pointing:</u>				
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.				
	<u>BRICKWORK IN FOUNDATIONS (CPAP Work Group No 116)</u>				
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u>				
1	One brick walls. Fa 1 111	m ²	111		
2	250mm Hollow walls of two half brick skins including wire ties. Fa 1 156	m ²	156		
	<u>BRICKWORK IN SUPERSTRUCTURE (CPAP Work Group No 116)</u>				
	<u>Brickwork of NFP bricks in class II mortar:</u>				
3	Half brick walls. Offi 309	m ²	309		
4	Half brick walls in beamfilling. Offi 6	m ²	6		
5	One brick walls. Fa 1 248 Offi 528	m ²	776		
6	One brick walls in balustrades Offi 25	m ²	25		
7	250mm Hollow walls of two half brick skins including wire ties. Fa 1 308	m ²	308		
8	280mm Hollow walls of two half brick skins including wire ties. Offi 192	m ²	192		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
<u>BRICKWORK SUNDRIES (CPAP Work Group No 116)</u>					
<u>Brickwork sundries:</u>					
9	Splayed mortar fillet one course high in 20mm cavity including forming weepholes. Fa 1 59	m	59		
10	Splayed mortar fillet one course high in 50mm cavity including forming weepholes. Offi 33	m	33		
11	Closing 20mm cavity of hollow wall vertically with brickwork half brick wide. Fa 1 15	m	15		
12	Closing 50mm cavity of hollow wall vertically with brickwork half brick wide. Offi 18	m	18		
13	Closing 20mm cavity of hollow wall horizontally with one course of brickwork. Fa 1 7	m	7		
14	Closing 50mm cavity of hollow wall horizontally with one course of brickwork. Offi 62	m	62		
15	Closing 20mm cavity of hollow wall horizontally with two courses of brickwork. Fa 1 52	m	52		
16	Closing 50mm cavity of hollow wall horizontally with two courses of brickwork. Offi 64	m	64		
<u>Bagging of 1:3 cement and sand mixture and sealed with two coats 'Brixal' bitumen emulsion waterproofing coating:</u>					
17	On brick surfaces. Fa 1 196 Offi 192	m ²	388		
<u>Turning pieces to lintels etc:</u>					
18	135mm Wide turning pieces Offi 15	m	15		
<u>Joint forming material in movement joints:</u>					
19	10 x 110mm Expansion joints with low density (33kg/m ³), cross linked, closed cell, expanded polyethylene joint former, with tear off strip fitted to steel surface with adhesive as per the manufacturer's instruction and built in vertically between steel columns and brickwork. Fa 1 31 Offi 148	m	179		
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Item		Unit	Quantity	Rate	Amount
20	10 x 110mm Expansion joints with low density (33kg/m³), cross linked, closed cell, expanded polyethylene joint former, with tear off strip fitted to steel surface with adhesive as per the manufacturer's instruction and built in vertically between concrete columns and brickwork. Fa 1 60 <u>2.8mm Galvanised brick reinforcement:</u>	m	60		
21	75mm Wide reinforcement built in horizontally. Fa 1 1810 Offi 2046	m	3,856		
22	75mm Wide reinforcement built in horizontally in foundations. Fa 1 3663	m	3,663		
23	150mm Wide reinforcement built in horizontally. Fa 1 730 Offi 1623	m	2,353		
24	150mm Wide reinforcement built in horizontally in foundations. Fa 1 1310 <u>Prestressed fabricated lintels:</u>	m	1,310		
25	110 x 75mm Lintels in lengths not exceeding 3m. Fa 1 18 Offi 85	m	103		
26	110 x 75mm Lintels in lengths exceeding 3m. Fa 1 18 <u>Galvanised hoop iron cramps, ties, etc:</u>	m	18		
27	30 x 1,6mm Wall tie 350mm long with one end fixed to structural steel columns and other end built into brickwork, including creating hole through joint forming material. Fa 1 91 Offi 436	No	527		
28	30 x 1,6mm Cramp 500mm long with one end fixed to timber and other end built into brickwork. Fa 1 6 Offi 60	No	66		
29	30 x 1,6mm Cramp 500mm long with one end fixed to metal frame and other end built into brickwork. Offi 30	No	30		
30	25 x 2,0mm Wall tie 450mm long with one end shot pinned to concrete and other end built into brickwork at expansion joint including hole through bitumen impregnated fibre board. Fa 1 25 <u>Air bricks etc:</u>	No	25		
31	229 x 152mm Terra-cotta air brick. Offi 24	No	24		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
	<u>ACID BRICK LININGS (CPAP Work Group No 116)</u>				
	<u>'DCE Corrosion Engineering's' 706 Phenolic acid brick system comprising of 206 Fibreglass 2 x 300gm layers saturated in 206 resin, with red acid brick size 230 x 114 x 30mm thick bed on and pointed with 706 Phenolic mortar in strict accordance with the manufacturer's instructions: (supplied and installed by Refraline: C Meintjies cmeintjies@refraline.com)</u>				
32	On linings to concrete walls. STR1 294	m²	294		
33	On screeded floors to falls. STR1 616	m²	616		
34	On linings to sides of concrete plinths. STR1 140	m²	140		
35	On linings to concrete stubs columns. STR1 182	m²	182		
36	On linings to bottom and sides of channels. (Approximately 300mm wide x 375mm average deep) STR1 96	m²	96		
37	On linings to sides of concrete plinths, circular on plan to not exceeding 2m radius. STR1 37	m²	37		
38	On linings to sides of concrete plinths, circular on plan to exceeding 2m radius. STR1 93	m²	93		
39	Fair circular cutting. STR1 151	m	151		
40	20 x 20mm Triangular 'Phenolic' mortar fillet skirting. STR1 1055	m	1,055		
41	20 x 20mm Triangular 'Phenolic' mortar fillet skirting circular. STR1 151	m	151		
42	On linings to bottom and sides of 500 x 500 x 500mm deep sump. Fa 1 1	No	1		
43	Fair cutting and fitting 30mm acid tiles around 150mm diameter puddle flange including additional membrane and sealing puddle flange. STR1 8	No	8		
	TOTAL CARRIED TO BILL SUMMARY			R	
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R20 409 Elidz Bushveld Energy
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Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>Bill No. 5</u> <u>WATERPROOFING</u></p> <p><u>Key:</u> <u>Location Description:</u> Item ITEM Fa 1 FACTORY PH 1 Offi OFFICE STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u> <u>Trade Preambles:</u> For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> <u>Proprietary items or materials:</u> Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u> The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Waterproofing:</u> Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs.</p> <p><u>DAMPPROOFING OF WALLS AND FLOORS (CPAP Work Group No 120)</u> <u>One layer of 375 micron Consol Plastics Brikgrip DPC embossed damp proof course:</u></p>				
1	In walls.	m ²	87	
	Fa 1 66 Offi 21			
TOTAL CARRIED TO BILL SUMMARY				R
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Waterproofing				

Item		Unit	Quantity	Rate	Amount
	<u>One layer of 250 micron Consol Plastics Gunplas waterproof sheeting sealed at laps with Gunplas Pressure Sensitive Tape:</u>				
2	Under surface beds. Fa 1 2234 Offi 338 STR1 113 <u>WATERPROOFING SEALANTS TO NEW WALLS, FLOORS, ROOFS, ETC (CPAP Work Group No 120)</u> <u>'Tal Superfex 1' Seamless waterproofing membrane applied in strict accordance with the manufacturer's instructions:</u>	m ²	2,685		
3	On screeded shower floors. Offi 2	m ²	2		
4	On plastered walls. Offi 17	m ²	17		
5	200mm Gussets at angles. Offi 6	m	6		
6	Additional membrane 200mm girth at internal and external angles Offi 6	m	6		
7	10mm flexible silicone bead at joints between walls and floors. Offi 6	m	6		
8	Additional membrane and sealing into 50mm diameter outlet. Offi 2 <u>WATERPROOFING TO ROOFS, BASEMENTS, ETC (CPAP Work Group No 120)</u> <u>One Layer 'abe Unigum Biarmato 3mm' waterproofing membrane fully bonded to 'bituprime' primed surface by means of 'torch on fusion' with 100mm side laps and 150mm end laps:</u>	No	2		
9	On flat roofs. Fa 1 175	m ²	175		
10	On turn-ups and turn-downs exceeding 300mm girth Fa 1 19	m ²	19		
11	Additional membrane 200mm girth at internal and external angles. Fa 1 64	m	64		
12	Sealing edges to brickwork or concrete. Fa 1 64	m	64		
13	Additional membrane and sealing into 100mm diameter outlet. Fa 1 5	No	5		
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Waterproofing					

Item		Unit	Quantity	Rate	Amount
14	Additional membrane and sealing into 150mm diameter outlet. Fa 1 3 <u>One Layer 'abe Index Unigum 4,5kg MS 4mm' waterproofing membrane fully bonded to 'bituprime' primed surface by means of 'torch on fusion' with 100mm side laps and 150mm end laps on 'abe Unigum Bairmato':</u>	No	3		
15	On flat roofs. Fa 1 175	m ²	175		
16	On turn-ups and turn-downs exceeding 300mm girth Fa 1 19	m ²	19		
17	Additional membrane 200mm girth at internal and external angles. Fa 1 64	m	64		
18	Sealing edges to brickwork or concrete. Fa 1 64	m	64		
19	Counterflashing to terminating edges. Fa 1 64	m	64		
20	Additional membrane and sealing into 100mm diameter outlet. Fa 1 5	No	5		
21	Additional membrane and sealing into 150mm diameter outlets. Fa 1 4 <u>JOINT SEALANTS ETC. (CPAP Work Group No 120)</u> <u>'Mapeflex PU20' Polyurethane two-component selfleveling sealing compound including backing cord, bond breaker, primer, etc:</u>	No	4		
22	3 x 10,5m In intermediate expansion joints in tiled floors. Offi 105 <u>'Mapeflex PU45' Polyurethane single-component thixotropic, rapid-hardening sealing compound including backing cord, bond breaker, primer, etc:</u>	m	105		
23	3 x 6mm In expansion joints in tiled walls. Offi 78 <u>Polysulphide sealant:</u>	m	78		
24	3 x 10,5mm In joints between porcelain floor tiles and skirting. Offi 108 <u>White silicone sealant:</u>	m	108		
25	In waterproofing joints between porcelain sanitary fittings, timber work tops and walls and partitioning. Fa 1 1 Offi 6	m	7		
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Waterproofing					

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Waterproofing

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<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 6</u></p> <p style="text-align: center;"><u>ROOF COVERINGS</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Supplementary Preambles:</u></p> <p>Prior to flashings being fixed, all troughs at the apex shall be stop-ended to the full depth of the sheet in order to prevent any penetration of wind-driven water. The trough shall be lipped at the eaves end to form a drip. Flashing flanges shall be notched to the sheet profile where necessary. All these operations must be performed with special tools available from 'Global Roofing Solutions'. Care shall be taken to ensure that no sheeting or flashing will be cut with abrasive disc on roof surface in order to prevent steel spatter from penetrating colour coated areas. Flashing finish must match and be the same as the roof sheeting it follows.</p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 2				
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Roof Coverings				

Item		Unit	Quantity	Rate	Amount
	<p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Raking cutting to roof sheets and cladding is not a measurable item in the Standard System of Measuring Building Work 1999 sixth Edition (Revised). The Contractor's attention is drawn to the fact there is considerable raking cutting to the side cladding and to a lesser extent to the roof sheeting. The Contractor is to check the drawings and include for raking cutting and waste in his rates. No claims will be considered for raking cutting.</p> <p><u>TROUGHED METAL SHEETING AND ACCESSORIES (CPAP Work Group No 125)</u></p> <p><u>0,8mm 'Hulamin Aluminium BR7 Profile 3004' Roof sheeting and accessories, with a stucco embossed PVDF 'Color-Tech G4' Metallic Silver finish on external face and standard backing coat on internal face, fixed to steel cladding rails in single lengths with stainless steel screws, installation region: from 100m to 400m of the coast, all in strict accordance with the manufacturer's instructions:</u></p> <p>Note: Side cladding fixed with broad flute facing out.</p>				
1	Side cladding in single lengths not exceeding 20m including bitumen impregnated sealer strips to side laps.	m ²	2,643		
	Fa 1 2592 Offi 51				
2	Side cladding with flutes horizontal in single lengths not exceeding 20m including bitumen impregnated sealer strips to side laps.	m ²	296		
	Offi 296				
3	'Denso CST 800' (Cladseal 800) insulator tape between roof sheets and 175mm high purlins or girts in strict accordance with the manufacturer's instructions.	m	1,913		
	Fa 1 1913				
4	Forming opening size 2400 x 1200mm high in side cladding, including taking delivery of and fixing set of two mechanical louver/ventilators supplied by others each size 1200 x 1200 (Flashings elsewhere measured).	No	1		
	Fa 1 1				
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
5	Forming opening size 3600 x 1200mm high in side cladding, including taking delivery of and fixing set of three mechanical louver/ventilators supplied by others each size 1200 x 1200 (Flashings elsewhere measured).	No	2		
	Fa 1 2				
6	Forming opening size 4800 x 1200mm high in side cladding, including taking delivery of and fitting set of four mechanical louver/ventilators supplied by others each size 1200 x 1200 (Flashings elsewhere measured).	No	3		
	Fa 1 3				
7	Forming opening size 4050 x 1350mm high in side cladding, including taking delivery of and fixing set of three mechanical louver/ventilators supplied by others each size 1350 x 1350 (Flashings elsewhere measured).	No	4		
	Fa 1 4				
	<u>0.8mm Thick Aluminium Profile 3004 with a stucco embossed PVDF 'Color-Tech G4' Metallic Silver finish on external face and standard backing coat on internal face, flashings and accessories fixed to roof sheeting and side cladding, installation region: from 100m to 400m of the coast, in strict accordance with the manufacturers instructions:</u>				
8	Cap flashing 770mm girth four times bent along length.	m	247		
	Fa 1 182 Offi 65				
9	External corner flashing 460mm girth and three times bent along length.	m	131		
	Fa 1 117 Offi 14				
10	Internal corner flashing 460mm girth and three times bent along length.	m	65		
	Fa 1 51 Offi 14				
11	Drip flashing 240mm girth and three times bent along length.	m	180		
	Fa 1 180				
12	Gutter flashing 462mm girth, three times bent along lengths.	m	49		
	Offi 49				
13	Cill flashing 731mm girth and six times bent along length, fixed to galvanised steel or aluminium.	m	51		
	Offi 51				
14	Jamb 462mm girth and four times bent along length.	m	239		
	Fa 1 149 Offi 90				
15	Jamb 931mm girth and four times bent along length.	m	92		
	Fa 1 92				
16	Broad flute serrated closers to suit 'BR7' profile including broad flute polyclosers to suit 'BR 7' profile.	m	254		
	Fa 1 203 Offi 51				
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
17	Narrow flute serrated closers to suit 'BR7' profile including narrow flute polyclosers to suit 'BR 7' profile. Fa 1 203 Offi 51 <u>SUNDRIES (CPAP Work Group No 125)</u> <u>Sundries:</u>	m	254		
18	3mm Aluminium mill finish channel 400mm girth for fixing cap flashing. Fa 1 182	m	182		
19	38 x 38 x 3mm Aluminium angle. Fa 1 77 <u>RIBBED METAL SHEETING AND ACCESSORIES</u> <u>(CPAP Work Group No 125)</u> <u>0,9mm Thick 'Global Roofing Solutions' Ziptech 420' Profile 3004 aluminium sheeting and accessories with a stucco embossed PVDF 'Color-Tech G4' Metallic Silver finish on external face and standard backing coat on internal face, concealed fixed through 75mm thick 'Factorylite' insulation (Factorylite insulation elsewhere measured) to steel purlins or rails, with 'Ziptech' Aluminium Halts fixed with stainless steel screws, installation region: from 100m to 400m of the coast, in strict accordance with the manufacturers instructions:</u>	m	77		
20	Roof covering with pitch not exceeding 25 degrees. Offi 409	m ²	409		
21	Roof covering with pitch not exceeding 25 degrees, in single lengths and profiled on site. Fa 1 2450	m ²	2,450		
22	'Denso CST 800' (Cladseal 800) insulator tape between roof sheets and 175mm high purlins or girts in strict accordance with the manufacturer's instructions. Fa 1 1320	m	1,320		
23	Forming opening size 300 x 300mm high in roof sheeting, including taking delivery of and fitting mechanical louver/ventilator (Flashings elsewhere measured) Fa 1 1 <u>0,8mm Thick 'Global Roofing Solutions' Profile 3004 aluminium flashings with a with a stucco embossed PVDF 'Color-Tech G4' Metallic Silver finish on external face and standard backing coat on internal face, fixed to roof sheeting with sliding brackets installation region: from 100m to 400m of the coast in strict accordance with the manufacturers instructions:</u>	No	1		
24	Soaker sheet to suit 'Zip-Tech 420' profile. Fa 1 15	m ²	15		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
25	Gable/ Barge flashing 610mm girth, three times bent along length with two polystrip sealer dust proofing to suite 'Zip-Tek 420' roof sheeting along one length and 'BR7' side cladding along other length. Fa 1 131	m	131		
26	Gutter flashing 462mm girth, three times bent along lengths. Fa 1 164 Offi 49	m	213		
27	Apex flashing 720mm girth, six times bent along length. Fa 1 210	m	210		
28	Head wall flashing 500mm girth three times bent along length. Fa 1 42 Offi 49	m	91		
29	Counter flashing 300mm girth and three times bent along length. Fa 1 98 Offi 65	m	163		
30	Side wall 550mm girth three times bent along length. Fa 1 57 Offi 17	m	74		
31	Starter bar 150mm girth, five times bent along girth and notched on site to suit roof profile. Fa 1 131 Offi 17	m	148		
32	Broad flute serrated closers to suit 'Ziptech 420' profile including broad flute polyclosers to suit 'Ziptech 420' profile. Fa 1 195 Offi 49	m	244		
<u>MODEK HEAT STOP GREY POLYCARBONATE SHEETING (CPAP Work Group No 122)</u>					
<u>1.2mm Thick Modek 'Heat Stop Grey' Polycarbonate sheeting to BR7 Profile , fixed to steel cladding rails In single lengths to suit high wind areas all in strict accordance with the manufacturer's instructions:</u>					
33	Side cladding including sealing side laps with 8 x 5mm butyl seal Fa 1 733	m ²	733		
34	Forming opening size 4050 x 13500mm high in side cladding, including taking delivery of and fixing set of three mechanical louver/ventilators supplied by others each size 1350 x 1350 (Flashings elsewhere measured). Fa 1 4	No	4		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
	<u>ROOF AND WALL LINING AND INSULATION (CPAP Work Group No 122)</u>				
	<u>'Isover Saint-Gobain' 75mm Factorylite" White faced insulation laid over purlins at approximately 2000mm centres including white PVC coated galvanised steel straining wires at 300mm centres installed in stict accordance with the manufacturer's instructions:</u>				
35	75mm Thick insulation laid taut over purlins (at approximately 2000mm centres), fixed concurrent with roof covering with and including PVC coated galvanised steel straining wires at 300mm centres and tied down top and bottom (after tensioning) with galvanised hoop iron ties.	m²	2,532		
Fa 1	2123	Offi	409		
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<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 7</u></p> <p style="text-align: center;"><u>CARPENTRY AND JOINERY</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Particle board:</u></p> <p>Particle board shall comply with the following specifications: a) SABS 1300 Particle board: exterior and flooring type b) SABS 1301 Particle board: interior type.</p> <p><u>Joinery:</u></p> <p>Descriptions of frames shall be deemed to include frames, transoms, mullions, rails, etc.</p> <p>Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes.</p> <p><u>Fixing:</u></p> <p>Items described as nailed shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Carpentry And Joinery				

Item		Unit	Quantity	Rate	Amount
	Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as 'bolted', the bolts have been given elsewhere.				
	<u>Decorative laminate finish:</u>				
	Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish.				
	<u>SKIRTINGS (CPAP Work Group No 126)</u>				
	<u>Wrot SA Pine:</u>				
1	20 x 95mm Hollow backed skirting with arris rounded edge plugged. Offi 264	m	264		
2	20 x 95mm Hollow backed skirting with arris rounded edge screwed to partitioning. Offi 105	m	105		
	<u>DOORS (CPAP Work Group No 126)</u>				
	<u>'Swartland Winsters' equal approved solid slatted doors with 5 year guarantee hung to timber frames:</u>				
3	44mm Door 'PD60' 813 x 2032mm high. Offi 4	No	4		
4	44mm Door 'PD60' purpose made 900 x 2032mm high. Offi 1	No	1		
5	44mm Double door 'PD60' 1612 x 2032mm high. Fa 1 1 Offi 4	No	5		
6	Extra over for 450 x 400mm framed opening for metal louvre unit (louvre unit elsewhere). Offi 17	No	17		
	<u>'Swartland Winsters' equal approved solid slatted doors with 5 year guarantee hung to Aluminium frames:</u>				
7	44mm Door 'PD60' 813 x 2032mm high. Offi 2	No	2		
	<u>'Swartland Winsters' equal approved commercial veneer horizontal grooved semi-solid doors with 5 year guarantee hung to timber frames:</u>				
8	44mm Door 'PD60' 813 x 2032mm high. Offi 2	No	2		
9	Extra over for 450 x 400mm framed opening for metal louvre unit (louvre unit elsewhere). Offi 4	No	4		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
	<u>'Swartland Winsters' equal approved commercial veneer horizontal grooved semi-solid doors with 5 year guarantee hung to aluminium frames:</u>				
10	44mm Door 'PD60' 813 x 2032mm high. Offi 2 <u>FIRE DOORS AND FRAMES (CPAP Work Group No 126)</u> <u>'Rocklite®' Class B fire doors installed in strict accordance with the manufacturer's instructions and complying with SANS 1253 and carrying a 120 minute fire rating with commercial veneer both sides suitable for painting, hung to and including a 1,6mm thick galvanised steel frame with three heavy duty brass hinges per leaf.</u>	No	2		
11	44mm Single door size 813 x 2032mm high with 100 x 300mm viewing panel of clear Schott PYRAN® S Borofloat Toughened Glass, including frame suitable for 230mm brick wall. Offi 3	No	3		
12	44mm Single door size 813 x 2032mm high with 100 x 300mm viewing panel of clear Schott PYRAN® S Borofloat Toughened Glass, including frame suitable for 230mm brick wall. (Sheeting) Offi 2	No	2		
13	44mm Double door size 1800 x 2032mm high in equal leaves each leaf with a 100 x 300mm viewing panel of clear Schott PYRAN® S Borofloat Toughened Glass, including frame suitable for 230mm brick wall. Offi 2	No	2		
14	44mm Double door size 1800 x 2032mm high in equal leaves each leaf with a 100 x 300mm viewing panel of clear Schott PYRAN® S Borofloat Toughened Glass, including frame suitable for 280mm brick wall. Offi 1 <u>FRAMED FRAMES, MULLIONS, TRANSOMS, ETC (CPAP Work Group No 126)</u> <u>'Swartland Winsters' door frames</u>	No	1		
15	'Swartland Winsters FA1' or equally approved 86 x 51mm thick single door frame once rebated, without sill for 813 x 2032mm high door. Offi 6	No	6		
16	'Swartland Winsters FA1' or equally approved 86 x 51mm thick purpose made single door frame once rebated, without sill for 900 x 2032mm high single door. Offi 1	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
17	'Swartland Winsters FA4' or equally approved 86 x 42mm thick double door frame once rebated, without sill for 1612 x 2032mm high door.	No	5		
	Fa 1 1 Offi 4				
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TOTAL CARRIED TO BILL SUMMARY			R	
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Ceilings Partitions And Access Flooring				

Item		Unit	Quantity	Rate	Amount
	<u>DECORATIVE MOULDINGS AND CORNICES (CPAP Work Group No 129)</u>				
	<u>'RhinoArt' Moulded cornices fixed with adhesive:</u>				
1	75mm Coved cornice. Offi 19	m	19		
	<u>CEILING TIMBERS, BEADS, INSULATION, ETC (CPAP Work Group No 129)</u>				
	<u>'Brits Insulation Systems' Isotherm thermal insulation (density 10 kg/m³).</u>				
2	100mm thick polyester thermal insulation laid over ceiling tiles and lapped not less than 100mm along all edges. Offi 830	m²	830		
	<u>NAILED UP AND SCREW UP CEILINGS (CPAP Work Group No 129)</u>				
	<u>12,5mm 'Gyproc Rhinoboard' gypsum plastered ceiling fixed print side up with 25mm 'Gyproc Sharp-Point' screws at 150mm centres with 'Gyproc Rhinotape' fixed over joints and the whole finished with minimum 3mm and maximum 6mm thick coat of 'Rhinolite' or 'Cretestone' gypsum skim plaster trowelled to a smooth polished surface, all in strict accordance with the manufacturer's instructions:</u>				
3	Ceilings including 'Gypframe Ultrasteel' branderling at 600mm centres in both directions only to steel trusses (elsewhere measured) at 3000mm centres. Offi 11	m²	11		
	<u>SUSPENDED CEILINGS (CPAP Work Group No 129)</u>				
	<u>'Gyproc Gyprex' size 600 x 600 x 12,5mm thick White vinyl cladd ceiling tiles, laid on pre-painted white exposed grid system Donn T38V, comprising of Space Gypframe/ Donn T38FR main tees at 1200mm centres and Gypframe/ Donn cross tees T38V/T32V (1200mm long) at 600mm centres to create a 600 x 600mm grid, including hold down clips, wedges etc suspended by means of 19 x 0,5mm thick galvanised mild steel strap hangers, fixed to bulb of main tee with wafer-tek screws at 1200mm centres using 6mm Express nails, all in strict accordance with the manufacturer's instructions:</u>				
4	Ceilings suspended not exceeding 1m below concrete soffits. Offi 381	m²	381		
5	Ceilings suspended exceeding 1m and not exceeding 2m below steel purlins at 1500mm centres. Offi 449	m²	449		
6	Opening for sprinkler head. Offi 72	No	72		
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	Ceilings Partitions And Access Flooring				

Item		Unit	Quantity	Rate	Amount
7	Extra over ceiling for opening for 170mm diameter downlighter. Fa 1 70	No	70		
8	Extra over ceiling for opening for 600 x 600mm light fitting. Offi 110	No	110		
9	Extra over ceiling for 150mm diameter opening for ventilation grille/air conditioning diffuser. Offi 38	No	38		
10	Extra over ceiling for 850 x 850mm opening for ventilation grille/air conditioning diffuser. Offi 18 <u>'Gyproc' 15mm thick 'RhinoBoard' fire stop plastered ceiling with taper-edge 'RhinoBoard' fixed print side up with 25mm Gyproc RhinoBoard Sharp Point Screws at 150mm centres to Donn ORC T37K screw up ceiling grid with including galvanised main tees at 1200mm centres and cross tees at 500mm centres, all suspended with 25 x 25mm galvanised angles at not exceeding 1200mm centres, joints to be taped and finished with 'Rhinoglide', in strict accordance with the manufacturer's instructions:</u>	No	18		
11	Rectangular bulkheads against wall 250mm wide x 460mm high, suspended not exceeding 1m below concrete soffits. Offi 16	m	16		
12	Rectangular bulkheads against wall 250mm wide x 550mm high, suspended not exceeding 1m below concrete soffits. Offi 93	m	93		
13	Intermediate rectangular bulkheads 450mm wide x 550mm high, suspended not exceeding 1m below concrete soffits. Offi 65 <u>'Gyproc/ Donn' cornices to suspended ceilings:</u>	m	65		
14	45 x 35mm Flush plaster trim cornices for flush plastered ceilings, plugged. Offi 380 <u>'Gyproc/ Donn' prepainted cornices to suspended ceilings:</u>	m	380		
15	SM25 Wall angle 25mm plugged. Offi 316	m	316		
16	SM25 Wall angle 25mm fixed to dry wall partitioning. Offi 272	m	272		
17	M6 wall angle plugged. Offi 105	m	105		
18	M6 fixed to dry wall partitioning Offi 91	m	91		
TOTAL CARRIED TO BILL SUMMARY				R	
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Ceilings Partitions And Access Flooring					

Item		Unit	Quantity	Rate	Amount
	<u>PARTITIONS ETC (CPAP Work Group No 138)</u> <u>Gyproc Fire resistant wall system 102/F60S52 Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 102 x 35mm 'Gypframe UltraSTEEL™' studs at 600mm centres friction fitted into head track and floor track clad on one side with an outer layer of 12,5mm thick RhinoBoard FireStop board and inner layer of 15mm thick RhinoBoard FireStop board fixed with 42mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres with all external angles to have Drywall 'Gypframe' cornerbeads attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer's instructions:</u>				
19	Rectangular boxing to steel columns 450mm wide x 203mm deep (approximately 856mm girth) 3145mm high, fixed to brickwork including plaster trims etc. Offi 18 <u>Gyproc Fire resistant wall system 102/F60S52 Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 102 x 35mm 'Gypframe UltraSTEEL™' studs at 600mm centres friction fitted into head track and floor track, against girts, with and including 'Tyvek' housewrap water vapour barrier fixed to girts for full height, with and including straining wires fixed to girts at suitable centres to support 'Cavitybat' with and including 102mm Isover 'Cavitybatt' insulation inserted into cavity of partitioning and clad on one side with a single layer of 15mm thick RhinoBoard FireStop board fixed with 25mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres with all external angles to have Drywall 'Gypframe' cornerbeads attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer's instructions as detailed on 30min Fire Protection Detail Required on Front Façade of the Office Block and Sides excluding the 1m on Either Side on Drawing ELIDZ Bushveld Partitioning Against Side Cladding Detail:</u>	No	18		
20	Partitioning 3145mm high with bottom track plugged and top track fixed suspended ceiling tees. Offi 56	m	56		
21	Extra over partition 3145mm high, for vertical abutment. Offi 4	No	4		
TOTAL CARRIED TO BILL SUMMARY				R	
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Ceilings Partitions And Access Flooring					

Item		Unit	Quantity	Rate	Amount
22	Extra over partition 3145mm high for corner. Offi 2 <u>Extra over partition for natural anodised aluminium frame and forming openings for windows, wiewing panels, doors, shopfronts etc. , by others including additional framing trimming etc.:</u>	No	2		
23	For plain opening aluminium window size 3644 x 1306mm high. Offi 1	No	1		
24	For plain opening aluminium window size 6806 x 1679mm high. Offi 1	No	1		
25	For plain opening aluminium window size 19700 overall, with one part 10019 x 1679mm high, the balance 1036mm high including splayed section where height reduces from 1679mm to 1036mm as W04 on Drawing No 0046 404 Rev 0 attached to these Bills of Quantities. Offi 1	No	1		
26	For plain opening part of curtain wall size 3258 x 2757mm high. Offi 1	No	1		
27	For plain opening part of curtain wall with splayed end, bottom length 21584, top length 19832 x 2895mm high refer to South Elevation on Drawing No. 0046 ARCH DESIGN 205 Rev C Elevations attached to these Bills of Quantities. Offi 1	No	1		
28	For plain opening steel fire door frame size 895 x 2100mm high. Offi 1	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 8					
Ceilings Partitions And Access Flooring					

Item		Unit	Quantity	Rate	Amount
	<u>Gyproc Fire resistant wall system 102/F60S52 Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 102 x 35mm 'Gypframe UltraSTEEL™' studs at 600mm centres friction fitted into head track and floor track, against girts, with and including 'Tyvek' housewrap water vapour barrier fixed to girts for full height, with and including straining wires fixed to girts at suitable centres to support 'Cavitybat' with and including 102mm Isover 'Cavitybatt' insulation inserted into cavity of partitioning and clad on one side with a single layer of 12,5mm thick RhinoBoard Moisture Resistant board fixed with 25mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres with all external angles to have Drywall 'Gypframe' cornerbeads attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer`s instructions:</u>				
29	Partitioning 3145mm high with bottom track plugged and top track fixed suspended ceiling tees. (Partition studs project 150mm above ceiling level).	m	7		
	Offi 7				
30	Extra over partition 3145mm high for vertical abutment.	No	8		
	Offi 8				
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
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Ceilings Partitions And Access Flooring					

Item		Unit	Quantity	Rate	Amount
	<p><u>Gyproc Fire resistant wall system 102/F60S52 Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 102 x 35mm 'Gypframe UltraSTEEL™' studs at 600mm centres friction fitted into head track and floor track, against girts, with and including 'Tyvek' housewrap water vapour barrier fixed to girts for full height, with and including straining wires fixed to girts at suitable centres to support 'Cavitybat' with and including 102mm Isover 'Cavitybatt' insulation inserted into cavity of partitioning</u></p> <p><u>and clad on one side with an outer layer of 12,5mm thick RhinoBoard FireStop board and inner layer of 15mm thick RhinoBoard FireStop board fixed with 42mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres with all external angles to have Drywall 'Gypframe' cornerbeads attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer's instructions and as detailed on 2HR Fire Protection Required 2m Total (1m at each end of office block and Warehouse) on Drawing ELIDZ Bushveld Partitioning Against Side Cladding Detail:</u></p>				
31	Partitioning 6305mm high with bottom track plugged and top track fixed suspended ceiling tees.	m	2		
	Offi 2				
32	Extra over partition 6135mm high, for vertical abutment.	No	4		
	Offi 4				
	<p><u>Gyproc Fire resistant wall system 102/F60S52 Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 102 x 35mm 'Gypframe UltraSTEEL™' studs at 600mm centres friction fitted into head track and floor track with 102mm Isover 'Cavitybatt' insulation inserted into cavity of partitioning and clad on both sides with a single layer of 15mm thick RhinoBoard FireStop board fixed with 25mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres with all external angles to have Drywall 'Gypframe' cornerbeads attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer's instructions:</u></p>				
33	Partitioning 3145mm high with bottom track plugged and top track fixed suspended ceiling tees.	m	86		
	Offi 86				
34	Extra over partition 3145mm high, for vertical abutment.	No	8		
	Offi 8				
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 2				
	Bill No. 8				
	Ceilings Partitions And Access Flooring				

Item		Unit	Quantity	Rate	Amount
35	Extra over partition 3145mm high for T- intersection. Offi 7	No	7		
36	Extra over partition 3145mm high for corner. Offi 6 <u>Extra over partition for natural anodised aluminium frame and forming openings for windows, viewing panels, doors, shopfronts etc. , by others including additional framing trimming etc.:</u>	No	6		
37	For plain opening for timber door and frame size 813 x 2032mm high. Offi 2	No	2		
38	For plain opening for aluminium shopfront size 1500 x 2125mm high. Offi 4	No	4		
39	For plain opening aluminium window size 5094 x 2850mm high. Offi 1 <u>Gyproc Fire resistant wall system 63/F120S47 Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 63.5 x 25mm 'Gypframe UltraSTEEL™' studs at 600mm centres friction fitted into head track and floor track and clad on both sides with an outer layer of 12.5mm thick RhinoBoard FireStop board and inner layer of 15mm thick RhinoBoard FireStop board fixed with 42mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres with all external angles to have Drywall 'Gypframe' cornerbeads attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer`s instructions:</u>	No	1		
40	Partitioning 3145mm high with bottom track plugged and top track fixed suspended ceiling tees. (Partition studs project 150mm above ceiling level). Offi 19	m	19		
41	Extra over partition 3145mm high for vertical abutment. Offi 2	No	2		
42	Extra over partition 3145mm high for corner. Fa 1 1	No	1		
43	Extra over partition 3145mm high for T- intersection. Offi 1	No	1		
44	Extra over partition 3145mm high for fair end. Offi 1	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 8					
Ceilings Partitions And Access Flooring					

Item		Unit	Quantity	Rate	Amount
	<u>Extra over partition for natural anodised aluminium frame and forming openings for windows, viewing panels, doors, shopfronts etc. , by others including additional framing trimming etc.:</u>				
45	For plain opening aluminium shopfront size 900 x 2125mm high. Offi 1	No	1		
46	For plain opening for aluminium shopfront size 1830 x 2115mm high. Offi 1	No	1		
47	For plain opening for aluminium shopfront size 1500 x 2125mm high. Offi 1	No	1		
	<u>'Gyproc Bespoke Moisture resistant Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 102 x 35mm 'Donn Drywall UltraSTEEL™' studs at 400mm centres friction fitted into head track and floor track and clad on one side with one outer layer of 12,5mm RhinoBoard Moisture Resistant and inner layer of 15mm RhinoBoard Firestop and the other side clad with one layer 15mm RhinoBoard Fire Stop, all fixed with 25 and 42mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres and resilient bars to one side and with all external angles to have natural anodized aluminium channels attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer`s instructions:</u>				
48	Partitioning 3145mm high with bottom track plugged and top track fixed suspended ceiling tees. Offi 14	m	14		
49	Extra over partition 3145mm high for vertical abutment. Offi 1	No	1		
50	Extra over partition 3145mm high for corner. Offi 2	No	2		
51	Extra over partition for forming holes for pipes not exceeding 100mm diameter and making good around pipe and chalking up. Offi 16	No	16		
52	Extra over partition for forming holes for pipes exceeding 100mm and not exceeding 200mm diameter and making good around pipe and chalking up. Offi 5	No	5		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 8					
Ceilings Partitions And Access Flooring					

Item		Unit	Quantity	Rate	Amount
	<u>Extra over partition for natural anodised aluminium frame and forming openings for windows, viewing panels, doors, shopfronts etc. , by others including additional framing trimming etc.:</u>				
53	For plain opening for timber door and frame size 813 x 2032mm high. Offi 2	No	2		
	<u>Gyproc Bespoke Moisture resistant Ultrasteel Stud Drywall' steel stud partitions, consisting of stud and track system with 102 x 35mm 'Donn Drywall UltraSTEEL™' studs at 400mm centres friction fitted into head track and floor track and clad on both side with one outer layer of 12.5mm RhinoBoard Moisture Resistant and inner layer of 15mm RhinoBoard Firestop, all fixed with 42mm Gyproc RhinoBoard Sharp Point Screws at 220mm centres and resilient bars to one side and with all external angles to have natural anodized aluminium channels attached and all joints to be covered with RhinoTape and finished with one layers of 'RhinoLite' applied and lightly sanded down, leaving wall surface prepared for painting and 70mm high natural anodised aluminium skirting, all in strict accordance with the manufacturer`s instructions:</u>				
54	Partitioning 3145mm high with bottom track plugged and top track fixed suspended ceiling tees. (Partition studs project 150mm above ceiling level). Offi 9	m	9		
55	Extra over partition 3145mm high for T- intersection. Offi 2	No	2		
56	Extra over partition for forming holes for pipes not exceeding 100mm diameter and making good around pipe and chalking up. Offi 6	No	6		
57	Extra over partition for forming holes for pipes exceeding 100mm and not exceeding 200mm diameter and making good around pipe and chalking up. Offi 1	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 8					
Ceilings Partitions And Access Flooring					

Item		Unit	Quantity	Rate	Amount
	<u>TOILET CUBICLES (CPAP Work Group No 138)</u>				
	<u>'Cubicle Solutions' 12mm Compact High Pressure Laminate (colour: White) modular, frameless system with overhead brace and hanging clamp (code CSSH01/316/13), floor anchored with adjustable supporting feet (code CSSF01/316/13), and bracketed to walls and pilasters using stainless steel brackets (CSSBr01/316). All fixings and ironmongery in 316 grade stainless steel as specified. Ironmongery to include hat and coat hook (code CSSH&C02/304) with buffer stopper, indicator bolt (codeCSTIN01/316/13) and rise and fall butt auto open hinge (code CSTR&F01/open/316/13). installed complete in strict accordance with the manufacturer`s instructions:</u>				
58	Partition 1680 x 1935mm high Offi 7	No	7		
59	Partition 2195 x 1935mm high Offi 1	No	1		
60	Intermediate palister 250 x 1935mm high Offi 5	No	5		
61	End palister 125 x 1935mm high Offi 10	No	10		
62	Door 750 x 1930mm high Offi 10	No	10		
	<u>'Cubicle Solutions' 12mm compact high pressure laminate (colour white) urinal screens (code CSUS/CHPL/301/1) fixed to walls with aluminium extrusions (code CS6CMEMF) installed complete in strict accordance with the manufacturer`s instructions:</u>				
63	Urinal screens 450 x 750mm high Offi 6	No	6		
	<u>'Cudicle Solutions' 12mm Compact High Pressure Laminate in Cube-Exclusive Range 1 (code CEx1/304). modular, frameless system with overhead brace and hanging clamp (code CSSH01/316/13), floor anchored with adjustable supporting feet (code CSSF01/316/13), and bracketed to walls and pilasters using stainless steel brackets (CSSBr01/316). All fixings and ironmongery in 316 grade stainless steel as specified. Ironmongery to include hat and coat hook (code CSSH&C02/316) with buffer stopper, indicator bolt (code CSTIN01/316/13) and rise and fallbutt auto open hinge (codeCSTR&F01/open/316/13) installed complete in strict accordance with the manufacturer`s instructions:</u>				
64	4mm Compact high pressure laminate saloon shower door 813 x 2023mm high with stainless steel fixtures and fittings fixed to brickwork. Offi 2	No	2		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 2				
	Bill No. 8				
	Ceilings Partitions And Access Flooring				

Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 8
CEILINGS PARTITIONS AND ACCESS FLOORING
BILL SUMMARY

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Section No. 2

Bill No. 8

Ceilings Partitions And Access Flooring

Item		Unit	Quantity	Rate	Amount
	<u>FINISH ON FLOOR TILES AND SHEETING (CPAP Work Group No 130)</u> <u>The newly laid 'Superflex' floor should, after 72 hours, be stripped using 'FloorworX' stripper, rinsed using 'FloorworX Rinse', allow to dry and then sealed with three coats of 'FloorworX' Silk Matt Sealer in strict accordance with the manufacturer's instructions:</u>				
3	On vinyl sheet flooring.	m ²	299		
	Offi 299				
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 9					
Floor Coverings					

R20 409 Elidz Bushveld Energy
EB/BUSH/01/19/Z1A

Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 9
FLOOR COVERINGS
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Section No. 2
Bill No. 9
Floor Coverings

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>Bill No. 10</u> <u>IRONMONGERY</u></p> <p><u>Key:</u> <u>Location Description:</u> Item ITEM Fa 1 FACTORY PH 1 Offi OFFICE STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u> <u>Trade Preambles:</u> For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> <u>Proprietary items or materials:</u> Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u> The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Finishes to ironmongery:</u> Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered : CH Chromium plated : SC Satin chromium plated : SE Silver enamelled : GE Grey enamelled : AS Anodised silver : AB Anodised bronze : AG Anodised gold : ABL Anodised black : PB Polished brass : PL Polished and lacquered : PT Epoxy coated.</p> <p><u>Escutcheon plates:</u> Escutcheon plates to be epoxy glued.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 2				
Bill No. 10				
Ironmongery				

Item		Unit	Quantity	Rate	Amount
	<u>Master keying, labelling, etc.:</u>				
	GGMK cylinders to form part of masterkey system for the ELIDZ. All cylinders and padlocks to be supplied under the commercial building master "GGMK" Key Control. (ELIDZ/GCP/New Building (Bushveld). Sample to be provided of code stamped on the cylinder and keys. To simplify i.e. ELISZ/GCP/eg. IW9 001, 002 etc and approved by Gary Whittaker. ELIDZ will require that 7 extra cylinders (Per Factory) be supplied under the Contract and these to be kept as spare cylinders In the ELIDZ Key Control Room. 2 x KK - key both sides, 3 x K/KB - key one side with knob turn on the other side. 2 x half cylinder is key one side only. (measured under attic stock) Labelling: All Keys To Be Labelled/Tagged Separately And Include The Following: Door number - "D 001" Description - "Workshop Entrance" Key Number - "ELIDZ/GCP/IW9 001" 3 Keys to be supplied per cylinder. 2 x for Tenant. 1 x for key room/cabinet.				
	<u>ATTIC STOCK (CPAP Work Group No 132)</u>				
	<u>Attic stock:</u>				
1	KK - Keyed both sides. Offi 2	No	2		
2	K/KB Key one side with turn knob on other side. Offi 4	No	4		
3	Half cylinder keyed one side. Offi 1	No	1		
4	Blanks stamped with blank code. Offi 50	No	50		
	<u>HINGES, BOLTS, ETC. (CPAP Work Group No 132)</u>				
	<u>Dormakaba:</u>				
5	'Dormakaba DBB-SS-009' 102 x 75 x 3mm stainless steel two ball bearing butt hinge. Offi 54	No	54		
6	'Dormakaba DCH-AL-S21' Natural anodised continuous geared hinge - 2100mm. Offi 5	No	5		
7	'Dormakaba DFB-SC-180' satin chrome 153mm manual flush bolt with heel. Offi 16	No	16		
8	'Dormakaba DPS-SS-032' stainless steel dust proof strike let into concrete. Offi 8	No	8		
9	'Dormakaba PH Bracket' stainless steel bracket for panic hardware (5401671) fixed to steel. Offi 1	No	1		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 2				
	Bill No. 10				
	Ironmongery				

Item		Unit	Quantity	Rate	Amount
10	'Dormakaba PHA 3 S DD' three point locking panic bar-double door- door leaf 1000mm wide x 2270mm high. (2101, 2104, 2104, 2201, PHX02, PHX04) fixed to steel.	Sets	1		
	Offi 1				
11	'Dormakaba PHA 2 S SD' two point locking panic bar- single door- door leaf 1000mm wide x 2270mm high. (2101, 2104, PHX02, PHX04) fixed to steel.	Sets	1		
	Fa 1 1				
<u>EN-SUITE LOCKS (CPAP Work Group No 132)</u>					
<u>En-Suite Locks:</u>					
12	'Cisa PAD' Padlock with stainless steel schackel masterkeyed.	No	2		
	Offi 2				
13	'Dormakaba DO36S-SS' Stainless steel euro profile cylinder sash lock with case size 116.5 x 78mm, forend 168 x 22mm, backset 57mm, centres 61mm.	No	10		
	Offi 10				
14	'Dormakaba PHT 3901' Satin nickel exterior access lock with lever handle with striking plate fixed to steel.	No	1		
	Fa 1 1				
15	'Dormakaba DMWC-SS-008' stainless steel bathroom deadlock with case size 38 x 76mm, forend 78 x 22,5mm, backset 55mm.	No	1		
	Offi 1				
16	'Cisa OG302-10-12' 65mm 5 Pin knob cylinder, grand master keyed, cylinders stamped accordingly with corresponding door numbers.	No	15		
	Offi 15				
17	'Cisa OG304-09-12' 42,5mm 5 Pin half , keys grand master keyed, cylinders stamped accordingly with corresponding door numbers.	No	1		
	Fa 1 1				
18	'Dormakaba D038R NP' nickel plated rebate conversion kit for Euro Profile locks D036S, D037D.	Pairs	6		
	Offi 6				
19	'Dorma DO35S-SS' Stainless bathroom sashlock with case size 102 x 76mm, forend 155 x 22mm, backset 57mm, centre 57mm.	No	2		
	Offi 2				
20	'Dormakaba DO37D-SS' Stainless steel cylinder deadlock with case size 116,5 x 78mm, forend 168 x 22mm, backset 57mm with striking plate fixed to steel.	No	5		
	Offi 5				
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 10					
Ironmongery					

Item		Unit	Quantity	Rate	Amount
21	'Dormakaba DWC-005' stainless steel Bathroom/WC indicator (red and white) and turnknob. Offi 2	Sets	2		
22	'Dormakaba DWC-006' stainless steel disabled WC indicator (red and white) and turnknob for physically impaired Offi 1	Sets	1		
23	Master keys. Offi 3	Sets	3		
<u>HANDLES, ETC (CPAP Work Group No 132)</u>					
<u>Dormakaba:</u>					
24	'Dormakaba CR003 Cyl SS' Stainless steel lever handle on rose with cylinder escutcheons. Offi 10	Sets	10		
25	'Dormakaba CR003 Latch SS' Stainless steel lever handle on rose - latch. Offi 2	Sets	2		
26	'Dormakaba DHP-430-CR-SF 170 x 170' brushed Grade 430 stainless steel 'DPH301C' Pull handle BT fixed on a 170 x 170 x1,2mm thick Grade 430 stainless steel plate with cylinder cut out, stainless steel plate fixed to doors with 4 No stainless steel countersunk screws. Offi 5	No	5		
27	'Dormakaba DHP-430-CL-SF 170 x 170' brushed Grade 430 stainless steel 'DPH301C' Pull handle BT fixed on a 170 x 170 x1,2mm thick Grade 430 stainless steel plate with cylinder cut out, stainless steel plate fixed to doors with 4 No stainless steel countersunk screws. Offi 5	No	5		
28	'Dormakaba DPH301B' 325 x 25mm stainless steel straight tubular pull handle flange fixing. Offi 2	No	2		
29	'Dorma DHP-430-BL-SF 150 x 300' brushed Grade 430 stainless steel 'PH301C' Pull Handle BT fixed on a 150 x 300 x1,2mm thick Grade 430 stainless steel plate with no cylinder cut out, stainless steel plate fixed to doors with 6No stainless steel countersunk screws. Offi 4	No	4		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 10					
Ironmongery					

Item		Unit	Quantity	Rate	Amount
<u>PUSH PLATES AND KICKING PLATES (CPAP Work Group No 132)</u>					
<u>Grade 430 stainless steel plates countersunk screwed along edges at not exceeding 200mm centres:</u>					
30	'Dormakaba DPP-430-BL-SF 150 x 300' 150 x 300 x 1,2mm brushed Grade 430 stainless steel plate with fixed to doors with 6 No counter sunk stainless steel screws. Offi 4	No	4		
31	'Dorma DKP-430-SF 200' 200 x 813 x 1,2mm brushed stainless steel Grade 430 fixed to doors with 10 No counter sunk stainless steel screws. Offi 9	No	9		
32	'Dorma DKP-430-SF 300' 300 x 900 x 1,2mm brushed Grade 430 stainless steel kick plate fixed to doors with 12 No counter sunk stainless steel screws. Offi 2	No	2		
<u>DOOR CLOSERS (CPAP Work Group No 132)</u>					
<u>Dormakaba:</u>					
33	'Dormakaba TS 91B-SL' Silver NON HOLD OPEN Cam action slide channel door closer. Max door width 950mm. Closing Force EN 3. Hydraulic speed control. Pull-side door leaf fixing (Standard), Push-side transom fixing. Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001. Offi 4	No	4		
34	'Dormakaba TS 83 PA with parallel arm' Silver NON HOLD OPEN door closer. Adjustable stength. Hydraulic speed control. Push-side fixing (parallel arm bracket included), EN3 850-950 EN4 950-1100, EN5 1100-1250, EN6 1250-1400. Door closer tested to EN 1154. Approved to fire resistant doors. Certified manufacturer to ISO 9001. fixed to steel. Fa 1 1	No	1		
35	'Dormakaba TS 83-SS-FP' 60 x 245 x 1,6mm thick grade 304 stainless steel fixing plate with predrilled holes to suite door closer fixing holes. Plate to be installed on opposite side of door using 'Dormakaba' M5 male and female fixing screews, fixed to steel. Fa 1 1	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 10					
Ironmongery					

Item		Unit	Quantity	Rate	Amount
36	'Dormakaba TS 91B G-SR EMF1' Silver ELECTRO MECHANICAL HOLD OPEN co-ordinated door closer system for rebated doors between 1350-1900mm. Closing Force EN 3. Hydraulic speed control. Max door width 950mm per leaf. Pull-side fixing (Standard), Push-side transom fixing. Door closer compliant with EN 1154. Door co-ordinators tested to EN1158. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001. fixed to steel.	Sets	2		
	Offi 2				
37	'Dormakaba TS91 EN3 FP' 1,2mm thick stainless plate with 8mm diameter predrilled holes, all corners to receive 5mm radius fillet, fixed to steel.	No	4		
	Offi 4				
38	'Dormakaba TS 92G-AB-SL' Silver NON HOLD OPEN Cam action slide channel door closer. Max door width 1100mm. Closing Force EN 2-4V. Adjustable strength, Hydraulic speed control. Push-side door leaf fixing (Standard), Pull-side transom fixing (angle bracket included). Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001. with bracket fixed to steel.	Sets	1		
	Offi 1				
39	'Dormakaba TS92 EN2-4 FP' 1,2mm thick stainless plate with 8mm diameter predrilled holes, all corners to receive 5mm radius fillet, fixed to steel.	No	2		
	Offi 2				
40	'Dormakaba TS 92B-SL' Silver NON HOLD OPEN Cam action slide channel door closer. Max door width 1100mm. Closing Force EN 2-4V. Adjustable strength, Hydraulic speed control. Pull-side door leaf fixing (Standard), Push-side transom fixing. Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001. with bracket fixed to steel.	No	3		
	Offi 3				
41	'Dormakaba TS92 EN2-4 FP' 1,2mm thick stainless plate with 8mm diameter predrilled holes, all corners to receive 5mm radius fillet, fixed to steel.	No	3		
	Offi 3				
42	'Dormakaba TS73V PA DC-PAB-SL' EN 2-4 parallel arm delayed action door closer with push side fixing (parallel arm bracket included) EN2 750-850, EN3 850-950, EN4 95-1100	No	1		
	Offi 1				
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 10					
Ironmongery					

Item		Unit	Quantity	Rate	Amount
	<u>LETTERS, NAMEPLATES, ETC (CPAP Work Group No 132)</u>				
	<u>Dormakaba:</u>				
43	'Dorma DSS-130 M' 150 x 150mm Stainless steel male indicator plate. Offi 2	No	2		
44	'Dorma DSS-131F' 150 x 150mm Stainless steel female indicator plate. Offi 2	No	2		
45	'Dorma DSS-133P' 150 x 150mm Stainless steel disabled indicator plate. Offi 1	No	1		
	<u>BATHROOM FITTINGS (CPAP Work Group No 132)</u>				
	<u>Serra:</u>				
46	'Serra SD 2070' (BA finish) stainless steel recessed mounted soap dish with bar. Offi 2	No	2		
47	'Serra TR2 SD 1310' satin stainless steel double toilet roll holder, with cylinder lock, plugged to wall with stainless steel screws. Offi 7	No	7		
48	'Serra TR2 SD 1310' satin stainless steel double toilet roll holder, with cylinder lock, fixed to partitioning with stainless steel screws. Offi 5	No	5		
49	'Serra MK3 SD1931' satin stainless steel soap dispenser soap spray , plugged to wall with stainless steel screws. Offi 4	No	4		
50	'Serra MK3 SD1931' satin stainless steel soap dispenser soap spray , fixed to partitioning with stainless steel screws. Offi 2	No	2		
	<u>Chairman Industries:</u>				
51	32mm Diameter grade 304 18/10 stainless steel satin polished side grab rail (Code DL2) plugged to wall with stainless steel fixing screws. Offi 1	No	1		
52	32mm Diameter grade 304 18/10 stainless steel satin polished rear grab rail (Code SR2) plugged to wall with stainless steel fixing screws. Offi 1	No	1		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 2				
	Bill No. 10				
	Ironmongery				

Item		Unit	Quantity	Rate	Amount
<u>SUNDRIES (CPAP Work Group No 132)</u>					
<u>Sundries:</u>					
53	'Dormakaba DDS 017' stainless steel door stop plugged. Offi 24	No	24		
54	'Dormakaba DHC-SS-030A' stainless steel hat and coat hook. Offi 1	No	1		
55	'Dormakaba DHC-SS-031B' stainless steel hat and coat hook with rubber buffer. Offi 1	No	1		
56	6mm Diameter steel dowel 100mm long in and including mortice in timber and brickwork or concrete Fa 1 2 Offi 20	No	22		
TOTAL CARRIED TO BILL SUMMARY				R	
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Amount

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Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 11</u></p> <p style="text-align: center;"><u>STRUCTURAL STEELWORK</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Descriptions:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers.</p> <p>Descriptions of straight, L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete.</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2</p> <p>Bill No. 11</p> <p>Structural Steelwork</p>				
			R	

Item		Unit	Quantity	Rate	Amount
	Steel mass will be calculated according to the tables issued by the SA Institute of Steel Construction.				
	<u>STEEL COLUMNS AND BEAMS (CPAP Work Group No 134)</u>				
	<u>Welded beams in single lengths with flat section bearer and connection plates bolted to steel columns or concrete beams:</u>				
1	Crane beam comprising of 457 x 191 x 74kg/m I-Section with 260 x 90 x 35kg/m parallel flange channel section welded along length to top flange of I-Section with and including 40 x 40mm solid rectangular bar welded along length to centre of channel, including plate web stiffeners welded at every joint.	Tonnes	9.41		
	Fa 1 9.41				
	<u>Welded columns in single lengths with flat section bearer and connection plates bolted to steel columns or concrete beams:</u>				
2	IPE120 x 10kg/m I-section column.	Tonnes	0.15		
	Offi 0.15				
3	203 x 203mm x 46kg/m H-section columns.	Tonnes	0.18		
	Offi 0.18				
	<u>HOT DIPPED GALVANISED STEEL COLUMNS AND BEAMS (CPAP Work Group No 134)</u>				
	<u>Welded columns in single lengths with flat section base, top, bearer, stiffener and connection plates bolted to steel and concrete:</u>				
4	200 x 75mm x 24kg/m Parallel flange channel section columns.	Tonnes	0.91		
	Fa 1 0.91				
5	203 x 203mm x 46kg/m H-section columns.	Tonnes	6.01		
	Offi 6.01				
6	254 x 146mm x 31kg/m I-section columns.	Tonnes	1.50		
	Fa 1 1.5				
7	254 x 146mm x 37kg/m I-section columns.	Tonnes	9.55		
	Fa 1 9.55				
8	305 x 165mm x 40kg/m I-section columns in single lengths exceeding 13m and not exceeding 18m.	Tonnes	6.72		
	Fa 1 6.72				
9	305 x 165mm x 46kg/m I-section columns in single lengths exceeding 13m and not exceeding 18m.	Tonnes	10.70		
	Fa 1 10.7				
10	406 x 178mm x 67kg/m I-section columns in single lengths exceeding 13m and not exceeding 18m.	Tonnes	13.31		
	Fa 1 13.31				
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Structural Steelwork				

Item		Unit	Quantity	Rate	Amount
	<u>Welded beams in single lengths with flat section bearer and connection plates bolted to steel columns or concrete beams:</u>				
11	IPE160 x 15,8kg/m I-section beam.	Tonnes	1.91		
	Fa 1 1.91				
12	IPE200 x 22,4kg/m I-section rafter.	Tonnes	1.31		
	Fa 1 1.31				
13	260 x 75mm x 24kg/m Parallel flange channel section beams.	Tonnes	2.28		
	Fa 1 2.28				
14	152 x 76mm x 18kg/m Channel-section beams.	Tonnes	0.32		
	Offi 0.32				
15	203 x 133mm x 25kg/m I-section beams.	Tonnes	4.19		
	Fa 1 2.92 Offi 1.27				
16	305 x 102mm x 25kg/m I-section rafter.	Tonnes	1.91		
	Offi 1.91				
17	254 x 146mm x 31kg/m UB-section beams.	Tonnes	2.17		
	Offi 2.17				
18	406 x 178mm x 60kg/m UB-section beams.	Tonnes	5.30		
	Offi 5.3				
19	406 x 178mm x 74kg/m UB-section beams.	Tonnes	0.89		
	Offi 0.89				
20	150 x 150 x 4,5mm Square hollow section gutter beam support.	Tonnes	1.65		
	Fa 1 1.65				
21	75 x 50 x 6mm Angle section gutter beam support.	Tonnes	0.19		
	Fa 1 0.19				
22	IPE 100 x 8,1kg/m I-section gutter support.	Tonnes	0.17		
	Fa 1 0.17				
	<u>HOT DIPPED GALVANISED STEEL TRUSSES, ETC (CPAP Work Group No 134)</u>				
	<u>Welded roof trusses of Tee and angle section rails, struts, braces, cleats, etc and flat section bearer, gusset and connection plates, bolted to steel:</u>				
23	13 (No) girder trusses average 27,42 x 2,150m high extreme in four sections bolted together.	Tonnes	25.12		
	Fa 1 25.12				
	<u>PRE-GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC (CPAP Work Group No 134)</u>				
	<u>Purlins and girts bolted to steel:</u>				
24	Lipped channel section purlins.	Tonnes	12.50		
	Fa 1 10.3 Offi 2.2				
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
25	Lipped channel section girts. Fa 1 14.74 Offi 2.1	Tonnes	16.84		
26	Lipped channel section louvre framing. Fa 1 1.24	Tonnes	1.24		
<u>HOT DIPPED GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC (CPAP Work Group No 134)</u>					
<u>Welded bracing etc with flat section connection plates bolted to steel:</u>					
27	Angle section bracing. Fa 1 14.01 Offi 1.67	Tonnes	15.68		
28	Angle section knee bracing. Fa 1 6.2	Tonnes	6.20		
29	Angle section sag angles. Fa 1 1.78	Tonnes	1.78		
30	48,4 x 2,5mm Circular hollow section bracing. Fa 1 0.42	Tonnes	0.42		
31	114,3 x 3,5mm Circular hollow section bracing. Fa 1 6.17 Offi 0.77	Tonnes	6.94		
32	139,7 x 3,5mm Circular hollow section bracing. Fa 1 1.1	Tonnes	1.10		
<u>HOT DIPPED GALVANISED STEEL FLOORS, STAIRS, BALUSTRADES, ETC (CPAP Work Group No 134)</u>					
<u>Welded and bolted suspended floors, walkways and stairs to steel or concrete:</u>					
33	80 x 80 x 4mm Square hollow section columns. Fa 1 0.55	Tonnes	0.55		
34	180 x 70mm x 22kg/m Channel-section (PFC) bearers. (Stringers and beams) Fa 1 1	Tonnes	1.00		
35	180 x 70mm x 22kg/m Channel-section (PFC) with 60 x 60 x 5mm angle sections weld along top flange bearers. (Stringers and beams) Fa 1 0.75	Tonnes	0.75		
36	60 x 60 x 6mm Angle section bracing. Fa 1 0.1	Tonnes	0.10		
37	4,5mm Vastrap plate floor panels. Fa 1 0.43	Tonnes	0.43		
38	4,5mm Vastrap plate treads and enclosed risers, tread 275mm wide x 1500mm long with down turn riser 175mm high x 1500mm long. Fa 1 1.36	Tonnes	1.36		
TOTAL CARRIED TO BILL SUMMARY				R	
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Structural Steelwork					

Item		Unit	Quantity	Rate	Amount
39	Base plates etc. Fa 1 0.04 <u>HOT DIPPED GALVANISED BOLTS, FASTENERS, ETC (CPAP Work Group No 134)</u> <u>Hot dipped galvanised bolts, fastners etc:</u>	Tonnes	0.04		
40	High tensile Grade 8.8 bolts. Fa 1 1.57 Offi 0.43	Tonnes	2.00		
41	High tensile Grade 8.8 M16 holding down J-bolt 550mm long with 150mm threaded end on one end and 150mm long radius bend on other end including two nuts and washers. STR1 276	No	276		
42	High tensile Grade 8.8 M20 holding down J-bolt 750mm long with 150mm threaded end on one end and 150mm long radius bend on other end including two nuts and washers. Fa 1 68 Offi 8 STR1 152	No	228		
43	High tensile Grade 8.8 M20 holding down J-bolt 900mm long with 150mm threaded end on one end and 150mm long radius bend on other end including two nuts and washers. Offi 76	No	76		
44	High tensile Grade 8.8 M24 holding down J-bolt 750mm long with 150mm threaded end on one end and 150mm long radius bend on other end including two nuts and washers. Fa 1 44	No	44		
45	High tensile Grade 8.8 M24 holding down J-bolt 900mm long with 150mm threaded end on one end and 150mm long radius bend on other end including two nuts and washers. Fa 1 272	No	272		
46	High tensile Grade 8.8 M16 220mm long chemical anchor with washers and two nuts. Fa 1 24	No	24		
47	High tensile Grade 8.8 M20 220mm long chemical anchor with washers and two nuts. Offi 24 <u>PAINTING OF STRUCTURAL STEELWORK (CPAP Work Group No 152)</u> <u>Remove contamination and dust by freshwater washing and prepare surfaces and apply, one coat 'SigamaPrime 200' primer (minimum 75 µm), apply one coat 'Sigma Cover 435' (minimum 100 µm) and apply one coat 'Sigmadur 520' (minimum 50 µm) in strict accordance with the manufacturer's instructions:</u>				
48	On crane beams. Fa 1 142	m²	142		
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Bill No. 11

Structural Steelwork

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 12</u></p> <p style="text-align: center;"><u>METALWORK</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Descriptions:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers.</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p>Metalwork described as holed for bolt(s) shall be deemed to exclude the bolts unless otherwise described.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2</p> <p>Bill No. 12</p> <p>Metalwork</p>				
			R	

Item		Unit	Quantity	Rate	Amount
	<u>HOT DIPPED GALVANISED STEEL GATES, SCREENS, ETC (CPAP Work Group No 136)</u>				
	<u>Welded screens and gates to brickwork:</u>				
1	Single gate 780 x 2190mm high of 50 x 50 x 3mm hollow section frame with 50 x 50 x 3mm midrail section, filled in with 225 x 10mm 'Nutech' Fiber cement building planks, predrilled and fixed to frame using self-taping hex screws with 15mm wide gap between planks and fitted with three pin-hinged to gate welded to post and with barrel bolt welded on to gate frame as per architect Door A on Drawing No 0046 310 Rev 0 attached to these Bills of Quantities.	No	2		
	Offi 2				
	<u>SUNDRY HOT DIPPED GALVANISED STEELWORK (CPAP Work Group No 136)</u>				
	<u>Hot dipped galvanised corner protectors, bollards etc:</u>				
2	40 x 40 x 3m Angle section framing with 30 x 5 x 100mm long fish tailed lugs welded on at 300mm centres including embedding in concrete.	Kg	90		
	Fa 1 90				
3	Extra over 40 x 40 x 83mm angle for mitred L-intersection.	No	20		
	Fa 1 20				
4	70 x 70 x 6mm Angle section threshold protector with 100mm long fish tailed lugs welded on at 500mm centres embedded in concrete surface bed.	Kg	118		
	Fa 1 118				
5	220mm Diameter x 4,5mm wall thickness x 900mm long bollard, with recessed domeheaded cap welded to one end and 365mm diameter x 6mm plate four times drilled for bolts welded the on the other end.	No	8		
	Fa 1 8				
6	220mm Diameter x 4,5mm wall thickness x 1850mm long bollard, with recessed domeheaded cap welded to one end, with 6 No. 30 x 6 x 60mm long fish tailed lugs welded to side, with and including painting bottom 1000mm with bitumen, the bollard filled with and including mass concrete (20MPa/19mm), cast into concrete 450 x 450 x 1100mm deep base, including all necessary excavation, backfill, carting away, formwork etc installed complete	No	12		
	Fa 1 12				
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
7	Column protector 750 x 750 x 1000mm high around steel column, formed of two 3mm thick mild steel plates 1500mm girth x 1000mm high twice bent and twelve two times holed and bolted together with and including six M16 x 30mm long bolts including nuts and washers and the central void of the column protector filled with 700mm thick sand, and the top filled with average 165mm thick concrete, with the top finished smooth to falls with a steel float.	No	13		
	Fa 1 13				
8	Column protector 1000 x 2000 x 1000mm high around steel column, formed of two 3mm thick mild steel plates 3000mm girth x 1000mm high twice bent and twenty two times holed and bolted together with with and including six M16 x 30mm long bolts including nuts and washers and the central void of the column protector filled with 700mm thick sand, and the top filled with average 165mm thick concrete, with the top finished smooth to falls with a steel float.	No	13		
	Fa 1 13				
	<u>Bolts:</u>				
9	M16 Galvanised mild steel 'Hilti HIT HY 150' system rawl bolt.	No	214		
	Fa 1 214				
	<u>500mm Diameter Core drilling to concrete slabs for bollards:</u>				
10	200mm Deep.	No	12		
	Fa 1 12				
	<u>Hot dipped bearers to brick linings, lintels, etc:</u>				
11	70 x 70 x 6mm Angle section bearers once holed for bolts at 400mm centres	Kg	320		
	Fa 1 106 Offi 214				
	<u>Bolts:</u>				
12	M16 Galvanised mild steel 'Hilti HIT HY 150' system rawl bolt.	No	39		
	Fa 1 6 Offi 33				
	<u>Hot dipped galvanised walkways:</u>				
13	Hot dipped galvanised 'Mentis Rectagrid Type RS40' with 25 x 4,5mm bearers 1200mm wide in suitable lengths set into framing to walkway.	m	24		
	Fa 1 24				
14	Hot dipped galvanised 'Mentis Rectagrid Type RS40' with 25 x 4,5mm bearers 1800mm wide in suitable lengths set into framing to walkway.	m	15		
	Fa 1 15				
TOTAL CARRIED TO BILL SUMMARY				R	
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Metalwork					

Item		Unit	Quantity	Rate	Amount
	<u>GLASS FIBRE (CPAP Work Group No 136)</u>				
	<u>Floor duct covers:</u>				
15	38mm Deep 'Vitaglass' FRP polyester IFR-25 grating rectangular duct covers approximately 600 x 3000mm overall, laid loose in frames (frames elsewhere).	No	7		
	Fa 1 7				
	<u>NATURAL ANODISED ALUMINIUM LOUVRE UNITS (CPAP Work Group No 140)</u>				
	<u>Louvre units fixed to timber doors:</u>				
16	Fit 450 x 400mm fixed louvre supplied by others six times holed and fitted to door with six 30mm counter sunk stainless steel screws.	No	21		
	Offi 21				
	<u>STEEL ROLLER SHUTTERS ETC. (CPAP Work Group No 136)</u>				
	<u>'Seranda Grande' galvanised heavy duty roller shutters fixed to structural steelwork:</u>				
17	Chain operated slatted roller shutter door for 2500 x 2440mm high opening, fitted with T bar, 0,8mm Slats, with flexible neoprene weather strip to bottom edge, with two lockable slide bolts and with pressed metal canopy cover.	No	2		
	Fa 1 2				
18	Chain operated slatted roller shutter door for 4500 x 4500mm high opening, fitted with T bar, 0,8mm Slats, with flexible neoprene weather strip to bottom edge, with two lockable slide bolts and with pressed metal canopy cover.	No	3		
	Fa 1 3				
TOTAL CARRIED TO BILL SUMMARY				R	
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Bill No. 12

Metalwork

Item		Unit	Quantity	Rate	Amount
	<u>'Tal Screedmaster' Self levelling screeds on concrete floors applied in strict accordance with the manufacturer's instructions:</u>				
5	4mm Thick on floors and landings, on and including 'Mapei' moisture block on screed. (screed elsewhere). Offi 299	m ²	299		
	<u>INTERNAL PLASTER (CPAP Work Group No 142)</u>				
	<u>Cement plaster on brickwork finished smooth with a steel float:</u>				
6	On walls. Fa 1 890 Offi 1379	m ²	2,269		
7	On narrow widths. Fa 1 10 Offi 29	m ²	39		
	<u>Cement plaster on concrete finished smooth with a steel float:</u>				
8	On walls Fa 1 25	m ²	25		
9	On projecting and isolated columns. Fa 1 16	m ²	16		
10	On projecting and isolated beams, kerbs etc. Offi 1	m ²	1		
11	On narrow widths. Offi 12	m ²	12		
12	On ceilings Fa 1 122	m ²	122		
	<u>EXTERNAL PLASTER (CPAP Work Group No 142)</u>				
	<u>Cement plaster on brickwork finished smooth with a steel float:</u>				
13	On walls Fa 1 178 Offi 207	m ²	385		
14	On walls in balustrades Offi 50	m ²	50		
15	On narrow widths. Fa 1 2 Offi 7	m ²	9		
16	On narrow widths in balustrades. Offi 3	m ²	3		
17	On sloping top, edges and projecting soffits of window sills 350mm girth Offi 37	m	37		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 2				
	Bill No. 13				
	Plastering				

Item		Unit	Quantity	Rate	Amount
	<u>Cement plaster on concrete finished smooth with a steel float:</u>				
18	On walls	m ²	59		
	Fa 1 59				
19	On narrow widths.	m ²	11		
	Fa 1 2 Offi 9				
	<u>CORNER PROTECTORS, DIVIDING STRIPS, ETC</u>				
	<u>(CPAP Work Group No 142)</u>				
	<u>Corner protectors, dividing strips, etc:</u>				
20	3 x 57mm Flat section brass water bar.	m	57		
	Fa 1 15 Offi 42				
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
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Plastering					

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Section No. 2

Bill No. 13

Plastering

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>Bill No. 14</u> <u>TILING</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Descriptions:</u></p> <p>Unless described as fixed with adhesive to plaster (plaster elsewhere), descriptions of tiling on brick or concrete walls, columns, etc., shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc. shall be deemed to include 1:3 plaster bedding.</p> <p><u>NOSINGS, JOINT COVERS, PROTECTORS, ETC</u> <u>(CPAP Work Group No 144)</u></p> <p><u>'M Trim' Grade 430 stainless steel straight edge trim:</u></p> <p>1 'M Trim' stainless steel square edge trim 8mm high (code SQE080) size 8 x 8mm, fixed with adhesive to edges of tiling on walls.</p> <p>Offi 107</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2 Bill No. 14 Tiling</p>				
	m	107		
			R	

Item		Unit	Quantity	Rate	Amount
2	'M Trim' heavy duty stainless steel straight edge trim 10mm high (code SSE120) to suit tiling 10,5mm thick, fixed with adhesive to edges of tiling on floors. Offi 202	m	202		
3	'M Trim' stainless steel square edge trim 10mm high (code SQE1210) to suit tiling 10,5mm thick, fixed with adhesive to edges of skirting. Offi 108	m	108		
4	'M Trim' stainless steel movement joint with grey insert (code SMJ120) to suit tiling 10,5mm thick, fixed with adhesive to edges of tiles on floors. Offi 23	m	23		
<u>CERAMIC WALL TILING (CPAP Work Group No 144)</u>					
<u>300 x 600 x 7,8mm 'Glossy White' white ceramic tiles (code GWW-4-1) fixed with 'Tal' tile adhesive mixed with 'Tal Bond' in lieu of water with straight joints in both directions flush pointed with 'Tal Wall and Floor' tinted grout on plaster (plaster elsewhere):</u>					
5	On Walls. Offi 177	m ²	177		
6	On narrow width. Offi 11	m ²	11		
7	On walls in isolated panels, splashbacks, etc. Offi 12	m ²	12		
8	Fair exposed cutting and fitting around pipe not exceeding 100mm internal diameter. Offi 23	No	23		
9	Fair exposed cutting and fitting around pipe not exceeding 200mm internal diameter. Offi 9	No	9		
<u>300 x 600 x 7,8mm 'Glossy White' white ceramic tiles (code GWW-4-1) fixed with 'Tal' tile adhesive mixed with 'Tal Bond' in lieu of water with straight joints in both directions flush pointed with 'Tal Wall and Floor' tinted grout on dry wall partitioning in strict accordance with the manufacturer's instructions (dry wall partitioning elsewhere):</u>					
10	On walls. Offi 73	m ²	73		
11	On walls in isolated panels, splashbacks, etc. Offi 1	m ²	1		
12	Fair exposed cutting and fitting around pipe not exceeding 100mm internal diameter. Offi 8	No	8		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
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Tiling					

Item		Unit	Quantity	Rate	Amount
13	Fair exposed cutting and fitting around pipe not exceeding 200mm internal diameter. Offi 5 <u>PORCELAIN WALL TILING (CPAP Work Group No 144)</u> <u>600 x 600 x 9mm Thick 'Industria Grey or Charcoal' Code PH0029089 or PH0029086 full bodied porcelain tiles, fixed with 'TAL' tile adhesive mixed with 'Tal Bond' in lieu of water with straight joints in both directions flush pointed with 'TAL Wall and Floor' tinted grout on plaster (plaster elsewhere):</u>	No	5		
14	On walls. Offi 67	m²	67		
15	On narrow widths. Offi 8	m²	8		
16	Fair exposed cutting and fitting around pipe not exceeding 100mm internal diameter. Fa 1 2 Offi 24	No	26		
17	Fair exposed cutting and fitting around pipe not exceeding 200mm internal diameter. Offi 3 <u>600 x 600 x 9mm Thick 'Industria Grey or Charcoal' Code PH0029089 or PH0029086 full bodied porcelain tiles, fixed with 'TAL' tile adhesive mixed with 'Tal Bond' in lieu of water with straight joints in both directions flush pointed with 'TAL Wall and Floor' tinted grout on dry wall partitioning in strict accordance with the manufacturer's instructions (dry wall partitioning elsewhere):</u>	No	3		
18	On walls. Offi 28	m²	28		
19	Fair exposed cutting and fitting around pipe not exceeding 100mm internal diameter. Offi 8	No	8		
20	Fair exposed cutting and fitting around pipe not exceeding 200mm internal diameter. Offi 2	No	2		
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Item		Unit	Quantity	Rate	Amount
	<u>PORCELAIN FLOOR TILING (CPAP Work Group No 144)</u>				
	<u>600 x 600 x 9mm Thick 'Industria Charcoal or Grey' full bodied porcelain tiles, Code T0029089 or T0029086, fixed with 'Tal' tile adhesive mixed with 'Tal Bond' in lieu of water to screeded floors (screeds elsewhere measured) with continous straight joints in both directions, jointed and flush pointed with Tal Wall and Floor tinted grout:</u>				
21	On floors and landings. Offi 88	m²	88		
	<u>600 x 600 x 9mm Thick 'Industria Charcoal or Grey' full bodied porcelain tiles, Code T0029089 or T0029086, fixed with 'Tal' tile adhesive mixed with 'Tal Bond' in lieu of water to power floated floors, (keycoat elsewhere measured) with continous straight joints in both directions, jointed and flush pointed with Tal Wall and Floor tinted grout:</u>				
22	On floors and landings. Offi 193	m²	193		
23	Preparing surface with slurry comprising of 1 part Tal Keycoat to two parts cement to power floated or pan floated floors. Offi 193	m²	193		
24	100mm High cut tile skirting. Offi 28	m	28		
25	100mm High cut tile skirting, fixed to partitioning. Offi 80	m	80		
	<u>'Signature Grey Anti Slip' full bodied porcelain tiles, Code T0029164, fixed with 'Tal' tile adhesive mixed with 'Tal Bond' in lieu of water to screeded floors (screeds elsewhere measured) with continous straight joints in both directions, jointed and flush pointed with Tal Wall and Floor tinted grout:</u>				
26	On floors to falls to outlet of shower Offi 2	m²	2		
27	On floors and landings Offi 9	m²	9		
28	On treads and risers. Offi 19	m²	19		
29	Skirting 100mm high of skirting tiles stepped over treads and risers Offi 32	m	32		
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Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 14
TILING
BILL SUMMARY

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Tiling

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 15</u></p> <p style="text-align: center;"><u>PLUMBING AND DRAINAGE</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>'Polycop' polypropylene pipes:</u></p> <p>Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with 'Fast-fuse' heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated.</p> <p>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.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2</p> <p>Bill No. 15</p> <p>Plumbing And Drainage</p>				
			R	

Item	Unit	Quantity	Rate	Amount
<p>All pipe diameters are nominal external.</p> <p><u>'Polylink' polypropylene pipes:</u></p> <p>Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron 'Supraclamp' running joints.</p> <p>Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured.</p> <p>Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double X joint couplers.</p> <p>Branch tees shall include flanged and bolted joints to 'Polycop' branch pipes in addition and for brass compression male iron to copper straight couplers.</p> <p>Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reduces shall be of sufficient overall length to accommodate same.</p> <p>All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions.</p> <p>All pipe diameters are nominal external.</p> <p><u>Concrete pipes:</u></p> <p>Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings.</p> <p><u>Vitrified clay pipes etc:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid.</p> <p><u>uPVC pipes and fittings.</u></p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings.</p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p> <p><u>uPVC pressure pipes and fittings:</u></p> <p>Pipes for water supply shall be of the class stated.</p> <p>Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings.</p> <p>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.</p>				
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Item	Unit	Quantity	Rate	Amount
<p><u>Copper pipes:</u></p> <p>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.</p> <p><u>Fixing of pipes</u></p> <p>Unless specifically otherwise stated, descriptions of pipes shall be deemed to include for fixing to walls etc. casting in, building in or suspending not exceeding 1m below suspension level.</p> <p><u>Lead pipes and traps:</u></p> <p>All soldered joints shall be wiped and brass unions shall be used for jointing lead to steel.</p> <p><u>Reducing fittings:</u></p> <p>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.</p> <p><u>Wire gratings:</u></p> <p>Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings.</p> <p><u>Septic tanks:</u></p> <p>Descriptions of septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions.</p> <p><u>Exposed concrete surfaces:</u></p> <p>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.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p>				
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Item	Unit	Quantity	Rate	Amount
<p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SAB.</p> <p><u>Flush pans:</u></p> <p>Flush pans shall have straight or side outlets and 'P' or 'S' traps as necessary.</p> <p>Descriptions of WC pans and bidets are deemed to include setting in silicone sealant and screwing to timber or plugging and screwing to concrete floor. Cisterns are to be plugged and brass screwed to walls.</p> <p><u>Stainless steel basins, sinks, wash troughs, urinals, etc:</u></p> <p>Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.</p> <p><u>Waste unions:</u></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.</p> <p><u>Steel sectional water tanks:</u></p> <p>Tanks shall comply with SABS CKS 114.</p> <p><u>'Densyl' petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd:</u></p> <p>Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied with minimum 15mm lap per spiral unless otherwise described.</p> <p>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.</p> <p>Prices for wrapping of pipes shall include for all work as described to couplings in the length.</p> <p><u>Testing:</u></p> <p>Prices for filling are to include for all necessary density and other tests as required by SANS 1200.</p>				
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Item		Unit	Quantity	Rate	Amount
<u>SUBSOIL DRAINAGE (CPAP Work Group No 146)</u>					
<u>'Kaytech Megaflow MEG 170' or equally approved Geocomposite Panel Drain System installed in strict accordance with the manufacturers instructions:</u>					
1	170 x 40mm Drain system, including all necessary excavation, backfilling with free draining material supplied by the Contractor etc.	m	193		
	Fa 1 193				
2	Extra over for Megaflo T-Piece wrapped with U24 'Bidum' with 300mm laps and nylon strappings.	No	1		
	Fa 1 1				
3	Extra over for Megaflo 90 degree corner junction wrapped with U24 'Bidum' with 300mm laps and nylon strappings.	No	3		
	Fa 1 3				
4	Extra over for Megaflo end outlet wrapped with U24 'Bidum' with 300mm laps and nylon strappings.	No	1		
	Fa 1 1				
<u>Sundries:</u>					
5	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m ³	3		
	Fa 1 3				
6	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m ³	3		
	Fa 1 3				
7	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m ³	16		
	Fa 1 16				
<u>RAINWATER DISPOSAL (CPAP Work Group No 148)</u>					
<u>Saint-Gobain Fullbore cast iron outlets:</u>					
8	100mm Vertical outlet with dome grating.	No	2		
	Fa 1 2				
9	100mm 45 Degree outlet with dome grating.	No	2		
	Fa 1 2				
<u>uPVC Class 9 pressure pipe jointed with 'Lyng' mechanical rubber ring joints:</u>					
10	110mm Pipes cast in columns.	m	26		
	Fa 1 26				
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Item		Unit	Quantity	Rate	Amount
	<u>Extra over class 9 pressure pipes for uPVC pressure fittings:</u>				
11	110mm Adaptor. Fa 1 8	No	8		
12	110mm 90 Degree bend. Fa 1 4	No	4		
13	110mm 90 Degree long radius bend. Fa 1 4	No	4		
14	110mm 45 Degree long radius bend. Fa 1 4	No	4		
	<u>SANITARY FITTINGS (CPAP Work Group No 148)</u>				
	<u>'Vaal Sanitaryware' wash hand basins:</u>				
15	'Vaal Amber' (Code: 700303WH) white washhand basin colour white with one taphole integrated overflow and chainstay hole, mounted to wall on and including two bolts (Code: VAA-8448Z0). Fa 1 1 Offi 8	No	9		
16	'Vaal Amber' (Code: 700303WH) white washhand basin colour white with one taphole integrated overflow and chainstay hole, mounted to wall on and including two bolts (Code: VAA-8448Z0) fixed to dry wall partitioning including all necessary additional framing, support plates etc. Offi 3	No	3		
	<u>'Vaal Sanitaryware' urinals:</u>				
17	'Vaal Lavatera' (Code: VAA-705426WH) wall hung back inlet urinal colour white with chromium plated back inlet spreader, 38mm chromium plated domical grating (Code: 8787Z0) hung on and exposed flush valve (elsewhere measured) and including two hanger brackets (Code: 8127Z0). Offi 4	No	4		
18	'Vaal Lavatera' (Code: VAA-705426WH) wall hung back inlet urinal colour white with chromium plated back inlet spreader, 38mm chromium plated domical grating (Code: 8787Z0) hung on and including two hanger brackets (Code: 8127Z0) fixed to dry wall partitioning including all necessary additional framing, support plates etc. Offi 1	No	1		
	<u>'Vaal Sanitaryware' WC suites:</u>				
19	'Vaal Afsan' (Code: VAA-750600WH) Colour white Low level washdown pan colour white with 90 degree outlet with and including white 'Vaal Jazz' (Code 8531Z000) thermoset toilet seat and lid with metal hinge. Offi 6	No	6		
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Item		Unit	Quantity	Rate	Amount
20	'Vaal Afsan' (Code: VAA-750600WH) Colour white Low level washdown pan colour white with 90 degree outlet with and including white 'Vaal Jazz' (Code 8531Z000) thermoset toilet seat and lid with metal hinge fixed to dry wall partitioning including all necessary additional framing, support plates etc. Offi 5	No	5		
21	'Vaal Pearl Paraplegic' (Code 7300SCWH) colour white semi close couple 90 degree outle open rim wash-down pan, matching 9 litre cistern complete with lid, fitments and purpose made c.p. side flush lever and with and including purpose made urea seat and cover plate. Offi 1	No	1		
	<u>'Franke Quinline' stainless steel domestic inset sinks:</u>				
22	'Franke Quinline' QLX611-120 Single end bowl inset sink (Code 1990003) and drainer unit, size 900 x 500mm overall with one bowls 410 x 343 x 167mm, including one 90mm basket waste outlets (Code 1120021), built into worktop. (Worktop elsewhere) Offi 2	No	2		
23	'Franke Quinline' QLX621-120 double end bowl inset sink (Code 1990007) and drainer unit, size 1200 x 500mm overall with two bowls 410 x 343 x 167mm, including two 90mm basket waste outlets (Code 1120021), built into worktop. (Worktop elsewhere) Offi 2	No	2		
	<u>'Franke (t/a Citimetal)' grade 304 (18/10) stainless steel slop hoppers and pot sinks:</u>				
24	'Franke' (Code 2630035) slop hopper size 540 x 540mm with integral 100mm high splashback to back and both sides, bowl with integral flushing rim, 110mm diameter waste outlet, hinged bucket grid and 38mm diameter x 250mm long vertical inlet pipe set on pair of 40 x 40mm stainless steel tube brackets, each twice bolted to wall with M8 expansion bolts. Offi 1	No	1		
	<u>Sanitary sundries:</u>				
25	Chromium plated shower curtain rail 600mm long, complete with a suitable number of chromium plated curtain rings and two matching end socket collars secured to wall. Offi 4	No	4		
26	White anti-mould shower curtain having a drawn width of 1000mm and with a drop of 1800mm and complete with a suitable number of curtain hooks. Offi 2	No	2		
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Item		Unit	Quantity	Rate	Amount
<u>WASTE UNIONS ETC (CPAP Work Group No 148)</u>					
<u>'Cobra Watertech' waste unions etc:</u>					
27	'Cobra 301' 32mm Chromium plated brass slotted basin waste outlet with plug, chain and chain stay.	No	12		
	Fa 1 1 Offi 11				
28	'Cobra 316' 38mm Chromium plated brass unslotted sink waste outlet with plug, chain and chain stay.	No	4		
	Offi 4				
29	38mm Chromium plated urinal waste outlet.	No	5		
	Offi 5				
<u>'Vulcathene' waste union:</u>					
30	'504' 32mm slotted sink waste outlet.	No	6		
	Offi 6				
31	'508' plug, chain and chain stay.	No	6		
	Offi 6				
<u>TRAPS ETC (CPAP Work Group No 148)</u>					
<u>PVC traps, etc:</u>					
32	38mm PVC Sink double trap.	No	4		
	Offi 4				
33	110mm PVC P trap.	No	2		
	Offi 2				
<u>'Cobra Watertech' traps etc:</u>					
34	'Cobra 340' Chromium plated deep seal bottle trap.	No	17		
	Fa 1 1 Offi 16				
35	'Cobra 373' Brass P-Trap with square stainless steel grating.	No	2		
	Offi 2				
<u>'Vulcathene' traps etc:</u>					
36	'W681' Dilution recovery trap 2,3l.	No	6		
	Offi 6				
37	'W612' Dilution recovery trap 4,5l.	No	2		
	Fa 1 2				
<u>TAPS, VALVES, ETC (CPAP Work Group No 148)</u>					
<u>'Cobra Watertech' angle regulating valves:</u>					
38	15mm 'Cobra 832-10' Ball type angle regulating valve.	No	32		
	Fa 1 2 Offi 30				
<u>'Cobra Watertech' 'Star' pillar taps:</u>					
39	'Cobra 111-15 Star' 15mm Chrome plated basin pillar tap.	No	24		
	Fa 1 2 Offi 22				
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Item		Unit	Quantity	Rate	Amount
	<u>'Cobra Watertech' 'Star', 'Strata' and 'Carina mixers:</u>				
40	'Cobra 296 CA Carina' 15mm Chromium plated single-hole sink mixer with aerated swivel outlet, mounting kit, angle valves and 400mm long flexible inlets. Offi 4	No	4		
	<u>'Cobra Watertech' brass bib taps:</u>				
41	'Cobra 108-15' 15mm hose bibtap. Offi 1	No	1		
	<u>'Cobra Watertech' shower roses and accessories:</u>				
42	15mm Chrome plated 'Vandalmaster' vandal-resistant showerhead (Code: COB-KP2-6) with self-cleaning nozzle. Offi 2	No	2		
	<u>'Cobra Watertech' toilet and urinal flushvalves:</u>				
43	'Flushmaster Junior COB-FJ2-100' 22mm Chromium plated toilet back-entry flush valve, complete with chromium plated bent flush pipe, integral vacuum breaker, non hold-open feature and butterfly valve, with wall plate and rubber pan connector. Offi 6	No	6		
44	'Flushmaster Junior COB-FJ2-100' 22mm Chromium plated toilet back-entry flush valve, complete with chromium plated bent flush pipe, integral vacuum breaker, non hold-open feature and butterfly valve, with wall plate and rubber pan connector fixed to dry wall partitioning including all necessary additional framing, support plates etc. Offi 5	No	5		
45	'Flushmaster Junior COB-FJ-2.000' 20mm water supply flush valve with and including a 'Cobra FJT 1-2' Chrome plated straight flush pipe connected to CP on brass adaptor. Offi 1	No	1		
46	'Flushmaster Junior FJ6.000' 20mm Chrome plated junior urinal flushmaster (non hold open) with integral shut-off valve and wallplate with and including Chrome plated back-mounted straight urinal flush pipe and spreader 'FJT5-4'. Offi 4	No	4		
47	'Flushmaster Junior FJ6.000' 20mm Chrome plated junior urinal flushmaster (non hold open) with integral shut-off valve and wallplate with and including Chrome plated back-mounted straight urinal flush pipe and spreader 'FJT5-4' fixed to dry wall partitioning including all necessary additional framing, support plates etc. Offi 1	No	1		
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Item		Unit	Quantity	Rate	Amount
	<u>'Cobra Watertech' Thermostatic mixers:</u>				
48	'Cobra Watertech' COB-SA862MEDI' Chrome plated Strata under wall thermostatic mixer.	No	2		
	Offi 2				
	<u>SANITARY PLUMBING (CPAP Work group No 148)</u>				
	<u>uPVC pipes:</u>				
49	40mm Pipes.	m	48		
	Fa 1 3 Offi 45				
50	50mm Pipes.	m	61		
	Offi 61				
51	110mm Pipes.	m	57		
	Offi 57				
52	40mm Pipes chased into brick walls.	m	36		
	Fa 1 4 Offi 32				
53	50mm Pipes chased into brick walls.	m	59		
	Offi 59				
	<u>Extra over uPVC pipes for fittings:</u>				
54	50mm Straight reducer.	No	11		
	Offi 11				
55	40mm Bend.	No	36		
	Fa 1 3 Offi 33				
56	50mm Bend.	No	48		
	Offi 48				
57	110mm Bend.	No	45		
	Offi 45				
58	40mm Access bend.	No	24		
	Fa 1 2 Offi 22				
59	50mm Access bend.	No	31		
	Offi 31				
60	110mm Access bend.	No	35		
	Offi 35				
61	40mm Junction.	No	24		
	Fa 1 2 Offi 22				
62	50mm Junction.	No	22		
	Offi 22				
63	110mm Junction.	No	44		
	Offi 44				
64	40mm Access junction.	No	12		
	Fa 1 1 Offi 11				
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Item		Unit	Quantity	Rate	Amount
65	50mm Access junction. Offi 22	No	22		
66	110mm Access junction. Offi 24	No	24		
67	110mm Double junction. Offi 1	No	1		
68	110mm Access bend with anti-syphon horn. Offi 2	No	2		
69	50 x 40mm Access reducing junction. Fa 1 1 Offi 11	No	12		
70	110 x 50mm Access reducing junction. Offi 6	No	6		
71	110mm Straight pan connector. Offi 12	No	12		
72	50mm Air release vent valve. Offi 2	No	2		
73	110mm Air release vent valve. Offi 2	No	2		
	<u>uPVC Class 34 pipes:</u>				
74	50mm Pipes laid in trenches not exceeding 1m deep. Offi 11	m	11		
75	110mm Pipes suspended below concrete soffits not exceeding 1m deep. Offi 8	m	8		
	<u>'Vulcathene' pipes:</u>				
76	38mm Pipes. Offi 12	m	12		
77	51mm Pipes. Offi 2	m	2		
78	38mm Pipes chased into brick walls. Offi 6	m	6		
79	51mm Pipes chased into brick walls. Offi 2	m	2		
80	38mm Pipes laid in and including trenches not exceeding 1m deep under surface beds. Offi 3	m	3		
81	51mm Pipes laid in and including trenches not exceeding 1m deep under surface beds. Offi 40	m	40		
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Item		Unit	Quantity	Rate	Amount
82	51mm Pipes laid in and including trenches not exceeding 1m deep. Offi 24	m	24		
	<u>Extra over 'Vulcathene' pipes for fittings:</u>				
83	'W242' 51mm End cap. Offi 4	No	4		
84	'W3942' 51mm Reducer. Offi 5	No	5		
85	'W181' 38mm Bend. Offi 12	No	12		
86	'W182' 51mm Bend. Offi 5	No	5		
87	'W201' 38mm equal sweep tee. Offi 5	No	5		
88	'W202' 51mm equal sweep tee. Offi 5	No	5		
	<u>Sundries:</u>				
89	Testing waste pipe system. Item 1	Item	1		
	<u>WATER SUPPLIES (CPAP Work group No 148)</u>				
	<u>Class II copper pipes:</u>				
90	15mm Pipes. Fa 1 3 Offi 165	m	168		
91	22mm Pipes. Offi 78	m	78		
92	28mm Pipes. Offi 39	m	39		
93	35mm Pipes. Offi 15	m	15		
94	54mm Pipes. Offi 15	m	15		
95	63mm Pipes. Fa 1 256	m	256		
96	15mm Pipes chased into brick walls. Fa 1 4 Offi 96	m	100		
97	22mm Pipes chased into brick walls. Offi 6	m	6		
	<u>Extra over class II copper pipes for capillary fittings:</u>				
98	15mm Fittings. Fa 1 8 Offi 204	No	212		
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Item		Unit	Quantity	Rate	Amount
99	22mm Fittings. Offi 43	No	43		
100	28mm Fittings. Offi 43	No	43		
101	35mm Elbow. Offi 5	No	5		
102	35mm Tee. Offi 2	No	2		
103	35mm Reducer. Offi 3	No	3		
104	54mm Elbow. Offi 3	No	3		
105	63mm Elbow. Fa 1 42	No	42		
106	54mm Tee. Offi 1	No	1		
107	63mm Tee. Fa 1 2	No	2		
108	54mm Reducer. Offi 1	No	1		
109	63mm Reducer. Fa 1 3 Offi 2	No	5		
	<u>Extra over class II copper pipes for brass compression fittings:</u>				
110	15mm Fittings. Fa 1 8 Offi 204	No	212		
111	22mm Fittings. Offi 39	No	39		
112	28mm Fittings. Offi 40	No	40		
113	35mm Elbow. Offi 5	No	5		
114	35mm Tee. Offi 2	No	2		
115	35mm Reducer. Offi 3	No	3		
116	54mm Elbow. Offi 3	No	3		
117	63mm Elbow. Fa 1 36	No	36		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 15					
Plumbing And Drainage					

Item		Unit	Quantity	Rate	Amount
118	54mm Tee. Offi 1	No	1		
119	63mm Tee. Fa 1 1	No	1		
120	54mm Reducer. Offi 1	No	1		
121	63mm Reducer. Fa 1 3	No	3		
	<u>Copper overflow and service pipes:</u>				
122	15mm Braided flexible connector 350mm girth. Fa 1 2 Offi 28	No	30		
	<u>ELECTRIC WATER HEATERS (CPAP Work Group No 148)</u>				
	<u>'Kwikhot' standard geysers (SABS 151:1992):</u>				
123	200 Litre 'Kwikhot Standard 600 Dual' (Code EF200D) horizontally wall mounted electric water heater with 22mm fittings complete with mounting brackets (Code BKT), draincock, two vacuum breakers (Code KHN4.200CX) and 22mm 600kPa 'Kwikhot Multi control and expansion relief valve (Code KHN3-216), etc installed complete. Offi 2	No	2		
	<u>Black polyethylene geyser trays (SABS 1848:2000):</u>				
124	Polyethylene geyser drip tray size 1600 x 600mm with union and backnut. Offi 2	No	2		
125	50mm uPVC black polythene overflow pipe fixed to steel roof member at 1500mm centres. Offi 8	m	8		
126	Extra over 50mm uPVC black polythene overflow pipe for bend. Offi 4	No	4		
	<u>WATER BOILERS AND CHILLERS (CPAP Work group No 148)</u>				
	<u>'Cobra Watertech' water boilers and water chillers:</u>				
127	'Cobra Watertech Prisma Deluxe H-PU-10' 10l vertical mounted water heater with gloss finish non-corrosive polypropylene outer casing. Offi 2	No	2		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 2					
Bill No. 15					
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Item		Unit	Quantity	Rate	Amount
	<u>TESTING (CPAP Work group No 148)</u>				
	<u>Testing:</u>				
128	Testing water pipe system.	Item	1		
	Item 1				
	<u>LAGGING (CPAP Work group No 148)</u>				
	<u>'Thermaflex' preformed polyethylene foam lagging or similar approved insulation:</u>				
129	Wrapped around 15mm pipe.	m	78		
	Offi 78				
130	Wrapped around 22mm pipe.	m	25		
	Offi 25				
131	Wrapped around 28mm pipe.	m	15		
	Offi 15				
	<u>Extra over 'Thermaflex' preformed polyethylene foam lagging or similar approved insulation for lagging to fittings:</u>				
132	15mm Fittings.	No	82		
	Offi 82				
133	22mm Fittings.	No	18		
	Offi 18				
134	28mm Fittings.	No	12		
	Offi 12				
	<u>Extra over 'Thermaflex' preformed polyethylene foam lagging or similar approved insulation for lagging to valves:</u>				
135	15mm Valve.	No	3		
	Offi 3				
136	22mm Valve.	No	2		
	Offi 2				
	<u>SLEEVES (CPAP Work Group No 148)</u>				
	<u>Plastic sleeves for pipes not exceeding 100mm diameter:</u>				
137	Sleeve not exceeding 250mm long.	No	7		
	Fa 1 3 Offi 4				
138	Sleeve exceeding 250mm and not exceeding 250mm long.	No	8		
	Fa 1 8				
	<u>Plastic sleeves for pipes exceeding 100mm and not exceeding 200mm diameter:</u>				
139	Sleeve not exceeding 250mm long.	No	11		
	Fa 1 5 Offi 6				
140	Sleeve exceeding 250mm and not exceeding 500mm long.	No	14		
	Fa 1 6 Offi 8				
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 2				
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Item		Unit	Quantity	Rate	Amount
	<u>HOLES ETC (CPAP Work Group No 148)</u>				
	<u>Core drilling of hole for pipe not exceeding 50mm diameter:</u>				
141	250mm 'Shukuma' precast concrete slab, etc. Offi 5	No	5		
142	250mm Reinforced concrete slab, beam, wall, etc. Fa 1 4	No	4		
	<u>Core drilling of hole for pipe exceeding 50mm and not exceeding 100mm diameter:</u>				
143	250mm 'Shukuma' precast concrete slab, etc. Offi 10	No	10		
144	250mm Reinforced concrete slab, beam, wall, etc. Fa 1 6	No	6		
	<u>Core drilling of hole for pipe exceeding 100mm and not exceeding 150mm diameter:</u>				
145	250mm 'Shukuma' precast concrete slab, etc. Offi 5	No	5		
146	250mm Reinforced concrete slab, beam, wall, etc. Fa 1 6	No	6		
	<u>Core drilling of hole for pipe exceeding 200mm and not exceeding 250mm diameter:</u>				
147	300mm Reinforced concrete slab, beam, wall, etc. Offi 3	No	3		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 2</u></p> <p align="center"><u>BUILDING WORKS</u></p> <p align="center"><u>Bill No. 16</u></p> <p align="center"><u>GLAZING</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>TOPS, SHELVES, DOORS, MIRRORS, ETC (CPAP Work Group No 150)</u></p> <p><u>6mm Silvered float glass silver backed mirrors with beveled edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete:</u></p>				
1	No	12		
<p>Mirror size 450 x 900mm high with chromium plated dome headed screws.</p> <p>Fa 1 1 Offi 11</p>				
TOTAL CARRIED TO SECTION SUMMARY			R	
Section No. 2				
Bill No. 16				
Glazing				

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 2</u></p> <p style="text-align: center;"><u>BUILDING WORKS</u></p> <p style="text-align: center;"><u>Bill No. 17</u></p> <p style="text-align: center;"><u>PAINTWORK</u></p> <p><u>Key:</u> <u>Location Description:</u></p> <p>Item ITEM</p> <p>Fa 1 FACTORY PH 1</p> <p>Offi OFFICE</p> <p>STR1 SPECIALIST TENAN PH1</p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Supplementary preambles:</u></p> <p>All work to be executed in strict accordance with the specifications of Plascon Paints (Pty) Ltd. The coating systems are as per Plascon's 'List of Decorative Paint Products' unless otherwise specified. Full specifications are available on request from Sophie Fourie Tel. (011) 301-4600 or from the various branch offices.</p> <p>Primers and first coats may be thinned in accordance with the paint specifications of Plascon Paints (Pty) Ltd to aid the absorption of the paint.</p> <p>All surfaces must be sound, clean and have a moisture content of less than 8% for walls generally and 3% for slabs/screeds etc.</p> <p>Where surfaces of plaster etc are sandy / friable, the first coat must be replaced with 'Plascon Merit' plaster primer thinned 10% with turpentine.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 2</p> <p>Bill No. 17</p> <p>Paintwork</p>				
			R	

Item		Unit	Quantity	Rate	Amount
	<u>ON FLOATED PLASTER (CPAP Work Group No 152)</u>				
	<u>Prepare surfaces and remove all loose material and apply one coat 'Plascon Professional Plaster Primer' (UC56) and two coats 'Plascon Cashmere' (CAS 1) paint:</u>				
1	On interior walls. Fa 1 940 Offi 1157	m ²	2,097		
2	On exterior walls. Fa 1 241 Offi 217	m ²	458		
3	On exterior walls in balustrades. Offi 50	m ²	50		
	<u>Prepare surfaces and remove all loose material and apply one coat 'Plascon Professional Plaster Primer' and two coats 'Plascon Acrylic PVA' paint:</u>				
4	Ceilings and beams. Fa 1 122	m ²	122		
	<u>ON SMOOTH CONCRETE (CPAP Work Group No 152)</u>				
	<u>Prepare by diamond grinding, acetone wipe on completion and apply one coat 'Sigmacover 456' twin pack and two coats 'Sigadur 550' twin pack epoxy:</u>				
5	On treated concrete floors in forming warning chevron, in alternate black and yellow stripes, including all necessary masking out. Fa 1 61	m ²	61		
	<u>ON PLASTER BOARD (CPAP Work Group No 152)</u>				
	<u>Remove any loose and flaking residue by means of wire brushing, wash with 'Polycell Sugar Soap' or weak spirits of salts, open up cracks and make good with 'Polycell Mendall 90' or 'Polycell Polyfilla Exterior' filler sanded smooth, apply one coat 'Plascon Professional Plaster Primer' (UC56) and two coats 'Plascon Cashmere' (CAS 1) paint:</u>				
6	On interior partitions. Offi 651	m ²	651		
	<u>Remove any loose and flaking residue by means of wire brushing, wash with 'Polycell Sugar Soap' or weak spirits of salts, open up cracks and make good with 'Polycell Mendall 90' or 'Polycell Polyfilla Exterior' filler sanded smooth, apply one coat 'Plascon Professional Plaster Primer' and two coats 'Plascon Professional Superior Satin' paint:</u>				
7	On ceilings. Offi 11	m ²	11		
TOTAL CARRIED TO BILL SUMMARY				R	
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Bill No. 17					
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Item		Unit	Quantity	Rate	Amount
	<u>ON FIBRE-CEMENT BOARD SURFACES (CPAP Work Group No 152)</u>				
	<u>Prepare surfaces and remove all loose material, apply one coat 'Plascon Merit Plaster Primer' and two coats 'Plascon Velvagro Polyurethane Enamel' paint:</u>				
8	On gate infill panels. (both sides measured). Offi 7	m ²	7		
	<u>ON METAL (CPAP Work Group No 152)</u>				
	<u>Prepare surfaces and remove all loose material, dust, grease, salts and contamination with 'Galv. Iron cleaner', rinse and apply one coat 'Plascon Galvogrip Metal Primer', apply one coat 'Plascon Merit Universal Undercoat' and two coats 'Plascon Velvagro Polyurethane Enamel' paint on galvanised steel, aluminium or copper:</u>				
9	On door frames. Offi 13	m ²	13		
10	On gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area). Offi 7	m ²	7		
11	On rails, bars, pipes, etc not exceeding 300 mm girth. Fa 1 256	m	256		
12	150mm Wide bands to pipes, etc. Fa 1 21	m	21		
	<u>Prepare surfaces and remove all loose material, dust, grease, salts and contamination with 'Plascon Aquasolve Degreaser GR1', rinse and apply one coat galvanised iron primer, one coat undercoat and two coats high gloss enamel paint on galvanised steel:</u>				
13	On column protectors in forming warning chevron, in alternate black and yellow stripes, including all necessary masking out. Fa 1 117	m ²	117		
14	On bollards in forming warning chevron, in alternate black and yellow stripes, including all necessary masking out. Fa 1 14	m ²	14		
	<u>Abrasive blast to SA2.5 and apply one coat 'Sigma Prime 200' primer at 75 µm, apply two coats 'PPG Steelguard 851' thin film intumescent paint to achieve a dry thicknees of 1263 µm and apply one coat 'Sigmadur 550' at 50 µm DFT paint on galvanised steel:</u>				
15	Columns and beams. Offi 34	m ²	34		
TOTAL CARRIED TO BILL SUMMARY				R	
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Bill No. 17					
Paintwork					

Item		Unit	Quantity	Rate	Amount
	<u>ON WOOD, WOOD BOARD (CPAP Work Group No 152)</u>				
	<u>Two coats oil wood primer:</u>				
16	Backs of frames,linings, etc not exceeding 300mm wide. Fa 1 6 Offi 426	m	432		
	<u>Stop, fill, sand down and prepare wood surfaces and apply one coat 'Plascon Oil Wood Primer', one coat 'Plascon Merit Universal Undercoat' and two coats' Plascon Velvaglo Ployurethane Enamel' paint:</u>				
17	On interior doors. Fa 1 7 Offi 87	m ²	94		
18	On exterior doors. Offi 11	m ²	11		
19	On doors frames. Fa 1 2 Offi 7	m ²	9		
20	Skirtings, rails, etc not exceeding 300mm girth Offi 369	m	369		
TOTAL CARRIED TO BILL SUMMARY				R	
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SECTION NO. 3

EXTERNAL WORKS

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 1</u></p> <p style="text-align: center;"><u>BULK EARTHWORKS, GRASSING, ETC</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>Nature of ground:</u></p> <p>A soils investigation has been carried out on the site and the Geotechnical report is included in Part C5 of these Bills of Quantities.</p> <p><u>Site clearance:</u></p> <p>Notwithstanding clause 4 page 6 of the Standard System of Measuring Building Work, site clearance will not be measured as per the said clause. The Contractor is to visit site and establish the extent of bush to be cleared and trees to be removed and price for all the works required to clear site under the clear site item below. No further claims in respect of site clearance will be entertained.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 1				
Bulk Earthworks, Grassing, Etc				

Item		Unit	Quantity	Rate	Amount
	<u>SITE CLEARANCE, ETC (CPAP Work Group No 104)</u>				
	<u>Site clearance:</u>				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs all trees irrespective of girth, bush, etc. (Contractor to visit site and establish extent of bush, trees etc to be removed. Removal of all trees irrespective of girth, bush etc are deemed to be included in this item)	m ²	11,471		
2	Stripping average 150mm thick layer of top soil and stockpiling on site.	m ²	3,795		
3	Stripping average 150mm thick layer of top soil and carting away to a dump site.	m ²	7,677		
	<u>BULK EXCAVATION (CPAP Work Group No 104)</u>				
	<u>Open face excavation in earth over sloping site:</u>				
4	Open face excavation.	m ³	7,100		
	<u>Extra over bulk excavation in earth for excavation in:</u>				
5	Soft rock.	m ³	2,000		
6	Hard rock.	m ³	2,500		
	<u>Risk of collapse of bulk excavations:</u>				
7	Sides of bulk excavations not exceeding 1,5m deep.	m ²	250		
8	Sides of bulk excavations exceeding 1,5m deep.	m ²	411		
	<u>CARTING AWAY (CPAP Work Group No 104)</u>				
	<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
9	Off site to a dumping site to be found by the Contractor.	m ³	5,450		
	<u>BULK FILLING, ETC (CPAP Work Group No 104)</u>				
	<u>Selected filling with material obtained from the excavations and/or prescribed stock piles compacted to a density of at least 93% Mod. AASHTO maximum density:</u>				
10	Over site in platforms.	m ³	1,350		
	<u>Filling with approved G7 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 95% Mod AASHTO density.</u>				
11	Over site in platforms.	m ³	600		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 3				
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	Bulk Earthworks, Grassing, Etc				

Item		Unit	Quantity	Rate	Amount
	<u>Filling with material from the excavations stabilised with 3 percent cement in accordance with SABS 1200 DM, compacted to a density of at least 93% Mod. AASHTO maximum density:</u>				
12	Over site in platforms.	m ³	300		
	<u>Surface Preparation:</u>				
13	Trim and level off surface of ground (excavated or filled under this Contract) to receive concrete surface beds, etc. including excavating or filling, ripping and scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m ²	4,000		
14	Trim and level off surface of ground (excavated or filled under this Contract) to receive concrete surface beds, etc. including excavating or filling, ripping and scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary, stabilised with 3 percent cement and compacting to 93% Mod AASHTO density.	m ²	4,000		
	<u>KEEPING EXCAVATIONS FREE OF WATER (CPAP Work Group No 104)</u>				
	<u>Keeping excavations free of water:</u>				
15	Keeping excavations free of all water other than subterranean water.	Item	1		
	<u>GRASSING (CPAP Work Group No 104)</u>				
	<u>Maintenance Period:</u>				
16	Maintenance of grassed and ground covered areas for a period of 3 months (total area approximately 3795m ²) including regularly weeding and irrigating as necessary.	Item	1		
	<u>Grassing of sods 200mm thick:</u>				
17	Stenotaphrum grass over site, berms and embankments, etc.	m ²	3,795		
	<u>Ground preparation:</u>				
18	Cultivation and preparation of areas to be planted.	m ²	3,795		
	<u>Topsoil, compost, lime and fertilizer:</u>				
19	Topsoil obtained from prescribed stock piles on site in plant beds, grassed areas and holes for trees, shrubs, etc, including haulage of a maximum of 350m from perimeter of excavations or stock piles.	m ³	455		
20	Topsoil supplied by the Contractor in plant beds, grassed areas and holes for trees, shrubs, etc.	m ³	114		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 3				
	Bill No. 1				
	Bulk Earthworks, Grassing, Etc				

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Item		Unit	Quantity	Rate	Amount
21	Fertilize garden soil with 3:2:1 super phosphate spread at a rate of 1kg/10m2 including working evenly into top 20mm depth of soil.	m²	3,795		
TOTAL CARRIED TO BILL SUMMARY					
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Section No. 3

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Bulk Earthworks, Grassing, Etc

Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 3</u> <u>EXTERNAL WORKS</u> <u>Bill No. 2</u> <u>RETAINING WALLS</u></p> <p><u>TRADE PREAMBLES</u> <u>Trade Preambles:</u> For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> <u>Proprietary items or materials:</u> Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u> The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u> Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u> Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)</u> <u>Excavation in earth not exceeding 2m deep:</u></p>				
1	Trenches	m ³	68	
	<u>Extra over for excavation in:</u>			
2	Soft rock	m ³	14	
3	Hard rock	m ³	54	
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 2				
Retaining Walls				

Item		Unit	Quantity	Rate	Amount
	<u>Risk of collapse of excavations:</u>				
4	Sides of trench and hole excavations not exceeding 1,5m deep	m ²	150		
	<u>Keeping excavations free of water:</u>				
5	Keeping excavations free of all water other than subterranean water	Item	1		
	<u>Extra over all excavations for carting away:</u>				
6	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m ³	7		
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density</u>				
7	To form embankments for retaining structures	m ³	61		
	<u>Earth filling of granular material/ river sand supplied by the contractor, compacted to 100% Mod AASHTO density</u>				
8	Backfilling behind retaining walls	m ³	180		
	<u>CONCRETE (CPAP Work Group No 110)</u>				
	<u>10MPa/19mm Unreinforced concrete cast against excavated surface:</u>				
9	Surface blinding under footings and bases.	m ³	7		
	<u>30MPa/19mm Unreinforced concrete cast in against excavated surface:</u>				
10	Strip footings	m ³	34		
	<u>30MPa/19mm Reinforced concrete:</u>				
11	Filling to cavity of hollow brick wall.	m ³	21		
	<u>Test blocks:</u>				
12	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes.	No	6		
	<u>FORMWORK (CPAP Work Group No 111)</u>				
	<u>Smooth formwork to sides (Degree of Accuracy II):</u>				
13	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	4		
	<u>REINFORCEMENT (CPAP Work Group No 114)</u>				
	<u>Mild steel reinforcement to structural concrete work:</u>				
14	10mm Diameter bars.	Tonnes	0.54		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 3					
Bill No. 2					
Retaining Walls					

Item		Unit	Quantity	Rate	Amount
	<u>High tensile steel reinforcement to structural concrete work:</u>				
15	10mm Diameter bars.	Tonnes	1.62		
16	12mm Diameter bars.	Tonnes	1.62		
17	16mm Diameter bars.	Tonnes	1.62		
	<u>Fabric reinforcement:</u>				
18	Type 311 fabric reinforcement in concrete hollow infill walls.	m ²	180		
	<u>BRICKWORK (CPAP Work Group No 116)</u>				
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u>				
19	345mm Hollow walls of two half brick skins including wire ties.	m ²	180		
	<u>BRICKWORK SUNDRIES (CPAP Work Group No 116)</u>				
	<u>Brickwork sundries:</u>				
20	Closing 115mm cavity of hollow wall horizontally with two courses of brickwork.	m	150		
21	Closing 115mm cavity of hollow wall vertically with one course of brickwork.	m	24		
	<u>Bagging of 1:3 cement and sand mixture:</u>				
22	On brick surfaces.	m ²	180		
	<u>Joint forming material in movement joints:</u>				
23	10 x 110mm Expansion joints with low density (33kg/m ³), cross linked, closed cell, expanded polyethylene joint former, with tear off strip fitted to steel surface with adhesive as per the manufacturer's recommendation and built in vertically between brick walls.	m	24		
	<u>2,8mm Galvanised brick reinforcement:</u>				
24	75mm Wide reinforcement built in horizontally.	m	4,234		
	<u>Galvanised hoop iron cramps, ties, etc:</u>				
25	30 x 1,6mm Wall tie 350mm long with both ends built into brickwork at expansion joints, including creating hole through joint forming material.	No	71		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 3					
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Retaining Walls					

Item		Unit	Quantity	Rate	Amount
	<u>FACE BRICKWORK (CPAP Work Group No 116)</u>				
	<u>'Makana Heritage Satin' face bricks, pointed with 10mm recessed square vertical and horizontal joints:</u>				
26	Extra over ordinary brickwork for facing and pointing in stretcher bond.	m ²	149		
27	Fair cutting and fitting around pipe not exceeding 100mm diameter.	No	150		
	<u>Brick-on-edge header course copings, sills, etc. of 'Makana Heritage Satin' face bricks, pointed with 10mm square vertical and horizontal joints on all exposed surfaces:</u>				
28	345mm Copings on top of 345mm brick walls	m	150		
	<u>WATERPROOFING TO TANKING AND RETAINING WALLS. (CPAP Work Group No 120):</u>				
	<u>4mm 'abe Index Unigum' reinforced fully bonded waterproofing:</u>				
29	On bagged walls.	m ²	263		
30	Additional membrane 300mm girth at internal and external angles.	m	300		
31	Sealing edges to concrete including trowelled mastic bead.	m	150		
	<u>PROTECTIVE BOARDING. (CPAP Work Group No 120):</u>				
	<u>12mm Bitumen impregnated softboard between waterproofing and backfilling:</u>				
32	On retaining walls.	m ²	180		
	<u>JOINT SEALANTS ETC. (CPAP Work Group No 120)</u>				
	<u>'Sikaflex Pro 3' Silicone sealing compound including backing cord, bond breaker, primer, etc.:</u>				
33	10 x 10mm In vertical expansion joints including raking out expansion joint filler as necessary	m	24		
	<u>SUB-SOIL DRAINAGE (CPAP Work Group No 146)</u>				
	<u>Sub-soil drainage:</u>				
34	19mm Crushed stone encasing to pipes supplied by the contractor.	m ³	14		
35	Grade A4 Geofabric filter blanket wrapped around stone encasing with 150mm side and 300mm end laps including stitching.	m ²	180		
36	110mm HDPE slotted drainage pipe laid in stone encasing.	m	150		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Retaining Walls				

Item		Unit	Quantity	Rate	Amount
37	Extra for 110mm capped end.	No	4		
38	Extra for 110mm bend.	No	9		
39	Extra for 110mm junction.	No	2		
40	50mm Diameter pvc weep pipe 400mm long through 345mm wide brick in fill concrete retaining wall.	No	150		
TOTAL CARRIED TO BILL SUMMARY					
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Retaining Walls					

Amount

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Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 3</u></p> <p align="center"><u>EXTERNAL WORKS</u></p> <p align="center"><u>Bill No. 3</u></p> <p align="center"><u>HARDSTANDS, PAVING, ROADS ETC</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p>Tests:</p> <p>Prices for filling are to include for all necessary density and other tests as required by SANS 1200.</p> <p><u>DEMOLITIONS ETC (CPAP Work Group No 104)</u></p> <p><u>Breaking up and removing:</u></p>				
1	60mm Thick brick paving with mortar joints on sand bed.	m ²	63	
2	150 x 300mm Pre-cast concrete kerb.	m	42	
TOTAL CARRIED TO BILL SUMMARY			R	
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Hardstands, Paving, Roads Etc				

Item		Unit	Quantity	Rate	Amount
3	Saw-cut into top of existing asphalt to facilitate part removal thereof.	m	42		
	<u>Carefully take up, set aside, storing for later reuse and including relaying:</u>				
4	60mm Thick interlocking concrete paving and relay on and including 20mm sand bed, including treatment with weed killer with dry filler sand swept and vibrated into joints all laid on subgrade (elsewhere measured) conforming to SABS 1200D degree of accuracy I.	m ²	18		
5	150 x 300mm Pre-cast concrete kerb and relay including bedded on and including 10Mpa/19mm unreinforced concrete minimum 50mm thick bedding and jointed in (3:1) cement mortar and flush pointed on exposed faces, including 15MPa/19mm unreinforced concrete haunching at back of each joint, excavation, backfilling, ramming, etc.	m	12		
	<u>EARTH FILLING, ETC (CPAP Work Group No 104)</u>				
	<u>Earth filling supplied by the contractor under pavings, etc:</u>				
6	Under floors, pavings, ramps, etc. of G7 base course material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density.	m ³	370		
7	Under floors, pavings, ramps, etc. of G5 base course material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density.	m ³	655		
8	Under floors, pavings, ramps, etc. of G5 base course material in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density.	m ³	636		
	<u>Surface Preparation:</u>				
9	Trim and level off surface of ground (excavated or filled under this contract) to receive concrete surface beds,paving etc. including excavating or filling, ripping and scarifying as necessary and compacting the whole area for a depth of 150mm to a density of at least 93% Mod. AASHTO maximum density, part to falls.	m ²	4,497		
	<u>CONCRETE, FORMWORK & REINFORCEMENT</u>				
	<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>30Mpa/38mm Concrete:</u>				
10	Paving to parking areas, roadways, etc in panels between construction joints, etc.	m ³	50		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>30Mpa/38mm Concrete:</u>				
11	Paving to parking areas, roadways, etc in panels between construction joints, etc.	m ³	590		
12	Plinths.	m ³	1		
	<u>TEST BLOCKS (CPAP Work Group No 110)</u>				
	<u>Test blocks:</u>				
13	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes.	Sets	53		
	<u>FINISHING TOP SURFACE OF CONCRETE (CPAP Work Group No 110)</u>				
	<u>Finishing top surfaces of concrete with a power float to pan floated finish:</u>				
14	Paving to parking areas, roads, etc to falls.	m ²	3,102		
15	Paving to parking areas, roads, etc.	m ²	4		
16	Paving to ramps, etc to falls.	m ²	98		
	<u>FORMWORK (CPAP Work Group No 111)</u>				
	<u>Rough Formwork to sides (DEGREE OF ACCURACY II):</u>				
17	Edges, risers, ends and reveals not exceeding 300mm high.	m	508		
	<u>MOVEMENT JOINTS ETC (CPAP Work Group No 111)</u>				
	<u>Expansion joints with 'Jointex' closed cell expanded polyethylene between vertical concrete surfaces:</u>				
18	10mm Joints not exceeding 300mm high.	m	853		
	<u>Saw cut joints:</u>				
19	Saw cut joint in top of concrete formed of a 3mm x 75mm first cut not later than 1 day after casting concrete and 8mm x 30mm second cut at top of joint made 21 days after casting.	m	1,434		
	<u>Vertical toggle construction joints through concrete including applying bond breaker to mating face with and including boxing in top edge to form 8mm wide x 25mm deep rebate in top edge of one face:</u>				
20	Paving not exceeding 300mm thick.	m	244		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Hardstands, Paving, Roads Etc				

Item		Unit	Quantity	Rate	Amount
	<u>REINFORCEMENT (CPAP Work Group No 114)</u>				
	<u>Mild steel dowel bars:</u>				
21	36mm Diameter dowel bar 450mm long with one end embedded 25mm deep inside of concrete and other end 225mm long inserted into and including a 225mm PVC sleeve with end cap cast into concrete including hole through formwork and 10mm 'Jointex' expansion joint filler.	No	814		
	<u>Fabric reinforcement:</u>				
22	Mesh Ref 500 fabric reinforcement in concrete surface beds etc.	m ²	248		
	<u>BOND AND INTERLOCKING CONCRETE BLOCK PAVERS (CPAP Work Group No 112)</u>				
	<u>Paving of 25Mpa Bosun concrete Small Urban paver colour Grey, size 200 x 100 x 60mm thick, laid in accordance with SANS 1200 MJ and CMA Concrete Block Paving Manuals on and including 20mm thick river sand bed with dry filler sand swept and vibrated into joints including treatment with weed killer, all laid on subgrade (elsewhere measured) conforming to SABS 1200D degree of accuracy I:</u>				
23	Paving in herringbone bond to sidewalks and pathways to falls.	m ²	319		
24	Fair circular cutting and waste to paving.	m	7		
	<u>Paving of 25Mpa Bosun concrete Medium Urban paver colour Tan, size 200 x 150 x 60mm thick, laid in accordance with SANS 1200 MJ and CMA Concrete Block Paving Manuals on and including 20mm thick river sand bed with dry filler sand swept and vibrated into joints including treatment with weed killer, all laid on subgrade (elsewhere measured) conforming to SABS 1200D degree of accuracy I:</u>				
25	200mm Wide brick-on-flat header course edging.	m	501		
26	220mm Wide brick-on-flat header course edgings, circular on plan with tapered radiating joints.	m	7		
	<u>80mm Thick Type S-A approved precast concrete coloured interlocking paving blocks (colour to Architects later specification) in accordance with SANS 1058, laid to falls on and including 25mm thick sand layer with joints filled in with sand, compacted with a vibration compactor.</u>				
27	Paving to parking areas etc. to falls	m ²	493		
28	Extra over for straight edge blocks	m	167		
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
29	Fair circular cutting and waste to paving.	m	12		
	<u>ROADWORK (CPAP Work Group No 154)</u>				
	<u>Bituminous premix road surfacing:</u>				
	All surfacing and patching to be done in accordance with the specification of COLTO (Standard Specification Road and Bridge Works for State Authorities 1998) and the manufacturers.				
30	30mm Paving to parking areas, roadways, in patches, etc.	m ²	21		
	<u>PRECAST CONCRETE KERBS (CPAP Work Group No 112)</u>				
	<u>Precast concrete kerbing (complying with SABS 927) in 1m lengths, wet presses, placed in position, bedded on and including 10Mpa/19mm unreinforced concrete minimum 50mm thick bedding and jointed in (3:1) cement mortar and flush pointed on exposed faces, including 15MPa/19mm continuous unreinforced concrete haunching at back of kerbing, excavation, backfilling, ramming, etc.:</u>				
31	Edge kerb (Figure 10) 250 x 200mm high.	m	66		
32	Edge kerb (Figure 10) 100 x 250mm high circular on plan not exceeding 4m radius formed with 330mm lengths of straight kerb.	m	1		
33	Edge kerb (Figure 10) 100 x 250mm high circular on plan exceeding 4m radius formed with 330mm lengths of straight kerb.	m	6		
34	Barrier kerb (Figure 4) 150 x 250mm high.	m	690		
35	Barrier kerb (Figure 4) 150 x 250mm high circular on plan not exceeding 4m radius formed with 330mm lengths of straight kerb.	m	4		
36	Barrier kerb (Figure 4) 150 x 250mm high circular on plan exceeding 4m radius formed with 330mm lengths of straight kerb.	m	93		
	<u>DAMPPROOFING OF WALLS AND FLOORS (CPAP Work Group No 120)</u>				
	<u>One layer of 250 micron Consol Plastics Gunplas Black waterproof sheeting sealed at laps with Gunplas Pressure Sensitive Tape:</u>				
37	Under surface beds.	m ²	3,694		
TOTAL CARRIED TO BILL SUMMARY				R	
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Hardstands, Paving, Roads Etc					

Item		Unit	Quantity	Rate	Amount
	<u>JOINT SEALANTS ETC (CPAP Work Group No 120)</u>				
	<u>'Sikaflex Pro 3' Silicone sealing compound including backing cord, bond breaker, primer, etc., including correction of joint filler due to shrinkage after 6 months:</u>				
38	8 x 10mm In saw cut joints in paving.	m	1,190		
39	8 x 10mm In saw cut joints in paving.	m	244		
40	10 x 10mm In expansion joints in floors including raking out expansion joint filler as necessary.	m	853		
	<u>ROAD SIGNS (CPAP Work Group No 136)</u>				
	<u>Road signs:</u>				
41	Type R3 - Series 'R' 900mm no entry sign constructed of 1.4mm thick sheet steel in sign faces with galvanised background and symbols, characters, legends and borders in engineering grade retro-reflective material complete with reinforcement fitted on and including 125-150 mm diameter bitumen impregnated creosote pole bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, stainless steel strapping, etc.	No	1		
42	Type R1 - Series 'R' 900mm stop sign constructed of 1.4mm thick sheet steel in sign faces with galvanised background and symbols, characters, legends and borders in engineering grade retro-reflective material complete with reinforcement fitted on and including 125-150 mm diameter bitumen impregnated creosote pole bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, stainless steel strapping, etc.	No	2		
43	Type R323 - Series 'R' 900mm disabled person vehicle sign constructed of 1.4mm thick sheet steel in sign faces with galvanised background and symbols, characters, legends and borders in engineering grade retro-reflective material complete with reinforcement fitted on and including 125-150 mm diameter bitumen impregnated creosote pole bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, stainless steel strapping, etc.	No	1		
	<u>PAINTWORK (CPAP Work Group No 152)</u>				
	<u>Prepare and apply one coat white reflective road marking paint on bituminous road surfacing, precast concrete paving blocks, concrete road surfacing, etc.:</u>				
44	100mm Wide line.	m	113		
45	300mm Wide line.	m	10		
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Item		Unit	Quantity	Rate	Amount
46	600mm Wide line.	m	10		
47	Straight directional arrow 300 x 3500mm overall.	No	4		
48	Right/Left turn directional arrow 300 x 3500mm overall.	No	2		
49	Straight directional arrow 500 x 3500mm overall with right/left turn side arrow 955 x 600mm overall.	No	1		
50	Painted "STOP" sign with 2000mm high letter.	No	2		
51	Painted disabled parking bay sign 2000mm long.	No	1		
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R20 409 Elidz Bushveld Energy
EB/BUSH/01/19/Z1A

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Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 4</u></p> <p style="text-align: center;"><u>SUB-SOIL DRAINAGE</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>Tests:</u></p> <p>Prices for filling are to include for all necessary density and other tests as required by SANS 1200.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>uPVC pipes and fittings.</u></p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings.</p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p> <p><u>Vitrified clay pipes etc:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 3</p> <p>Bill No. 4</p> <p>Sub-soil Drainage</p>				
			R	

Item	Unit	Quantity	Rate	Amount
<p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches) Clause 5.7.2 will only be applicable if authorised by the Engineer in writing.</p> <p>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.</p> <p><u>Descriptions of pipes laid in trenches:</u></p> <p>Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.</p> <p><u>Descriptions of catchpits, junction boxes, manholes, etc:</u></p> <p>Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.</p> <p><u>Precast concrete manoles:</u></p> <p>Precast concrete manholes shall be constructed using dolomitic aggregate.</p> <p><u>Step irons:</u></p> <p>Calcamite step irons are to be cast into the manhole walls as specified.</p> <p><u>Existing services:</u></p> <p>There are a number of existing services within the site boundaries, some of these are shown on the drawings. This information is not exhaustive and does not relieve the contractor of the responsibility of locating all existing services prior to construction. There are existing water, storm water, telephone, communications and electrical services on the site. Work is to be carried out without any disruption to existing services, this includes instances where newly constructed services are to be connected to existing 'live' services.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Sub-soil Drainage				

Item		Unit	Quantity	Rate	Amount
	<u>SUBSOIL DRAINAGE (CPAP Work Group No 146)</u>				
	<u>'Kaytec geopipe' installed in strict accordance with the manufacturers instructions:</u>				
1	100mm 'Kaytec M100 Geopipe' HDPE pipe installed in bottom of Flo-Drain laid trench. (excavation, backfill etc measured with Flo-Drain). (Flo-Drain elsewhere measured)	m	157		
	<u>Extra over 'Kaytec Geopipe' HDPE sub-soil drainage pipe for uPVC fittings:</u>				
2	100mm End cap.	No	2		
3	100mm Bend.	No	10		
4	100mm Junction.	No	2		
	<u>Kaytech Flo-Drain™ drainage system comprising of Kaytech HDPE or equal approved, drainage core and perforated 100mm 'Kaytech Geopipe' with HDPE or uPVC couplings enclosed in Kaytech bidim® A3 nonwoven continuous filament needle-punched polyester geotextile with 150mm end laps and 525 Kaytech Flownet, including excavation, and backfilling with selected free draining granular material supplied by the Contractor installed in strict accordance with the manufacturers instructions. (geopipe elsewhere measured)</u>				
5	Kaytech Flo-Drain™ drainage system 700mm high.	m	157		
	<u>Sundries:</u>				
6	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m³	17		
7	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m³	67		
8	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m³	84		
9	110mm Diameter Cast Iron A.B.C straight or skew cleaning eye with removable plate cover jointed to 100mm unperforated pipe and set in and including concrete 25Mpa/19mm surround size 600 x 600 x 325mm thick with exposed surface trowelled smooth including all excavations, formwork, reinforcement, backfilling, compaction, etc. all as per RoddingEye Detail: Subsurface Drain detail on Drawing No P1985-Civil-C04 Rev 1 General Details Sheet 2 of 2 attached to these Bills of Quantities.	No	4		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Sub-soil Drainage				

Item		Unit	Quantity	Rate	Amount
10	100mm Polypropylene pipes vertically or ramped to cleaning eyes in and including 400mm x 600mm concrete encasing (25Mpa at 28 days in 19mm stone), etc. including all excavations, backfilling, compaction, etc.	m	4		
11	100mm Polypropylene Y-junction with ring seal joints	No	4		
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Bill No. 4

Sub-soil Drainage

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 5</u></p> <p style="text-align: center;"><u>STORMWATER DRAINAGE</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>Tests:</u></p> <p>Prices for filling are to include for all necessary density and other tests as required by SANS 1200.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Concrete pipes:</u></p> <p>Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Bill No. 5				
Stormwater Drainage				

Item	Unit	Quantity	Rate	Amount
<p><u>Exposed concrete surfaces:</u></p> <p>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.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches) Clause 5.7.2 will only be applicable if authorised by the Engineer in writing.</p> <p>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.</p> <p><u>Descriptions of pipes laid in trenches:</u></p> <p>Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor. Note minimum width of trench is 500mm on either side of pipe.</p> <p><u>Descriptions of catchpits, junction boxes, manholes, etc:</u></p> <p>Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.</p> <p><u>Step irons:</u></p> <p>Calcamite step irons are to be cast into the manhole walls as specified.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 5				
Stormwater Drainage				

Item		Unit	Quantity	Rate	Amount
	<p><u>Existing services:</u></p> <p>There are a number of existing services within the site boundaries, some of these are shown on the drawings. This information is not exhaustive and does not relieve the contractor of the responsibility of locating all existing services prior to construction. There are existing water, storm water, telephone, communications and electrical services on the site. Work is to be carried out without any disruption to existing services, this includes instances where newly constructed services are to be connected to existing 'live' services.</p> <p><u>Brickwork in Manholes:</u></p> <p>Brickwork in manholes to be 28 MPa in accordance with the engineers specifications.</p> <p><u>STORMWATER CHANNELS (CPAP Work Group No 146)</u></p> <p><u>Precast or in-situ reinforced concrete (30Mpa) with mesh Ref 395, V- shaped stormwater channels, finished smooth on all exposed surfaces and with angles rounded, cast in suitable lengths (not exceeding 2 000mm), with bitumen applied to one edge at joints, and reinforced as necessary for handling if precast, including all formwork, reinforcing, moulds, shallow excavation, filling and ramming, laying to falls, bedding and pointing in (3:1) cement mortar:</u></p>				
1	450 x 150mm V-Drain.	m	150		
2	Extra for angles, intersections, ends, dressing into sides of catchpits, etc.	No	6		
3	12mm Bitumen impregnated softboard, size 450mm wide x 150mm high with a V cut in the top to match the shape of the end of the channel, expansion joint between concrete stormwater channels.	No	150		
4	10 x 10mm 'Sikaflex Pro 3' Silicone sealing compound including backing cord, bond breaker, primer, etc, in isolation joint in channels including raking out expansion joint filler as necessary.	m	68		
	<p><u>STORMWATER DRAINAGE (CPAP Work Group No 146)</u></p> <p><u>uPVC Class 34 Socketed sewer piping with bedding and filling in accordance with SABS 1200LB:</u></p>				
5	110mm Pipes laid in and including trenches not exceeding 1m deep.	m	45		
	<u>Extra over uPVC pipes for fittings:</u>				
6	110mm Bend.	No	15		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Stormwater Drainage				

Item		Unit	Quantity	Rate	Amount
7	110mm 45 Degree bend.	No	11		
8	110mm Junction.	No	9		
	<u>Class 100D concrete pipes with interlocking joint pipes, including wrapping joints with 200mm wide strip of geotextile filter blanket with wrapping to overlap at least 200mm:</u>				
9	300mm Pipes laid in and including trenches not exceeding 1m deep.	m	2		
10	450mm Pipes laid in and including trenches not exceeding 1m deep.	m	118		
11	450mm Pipes laid in and including trenches exceeding 1 and not exceeding 2m deep.	m	155		
12	450mm Pipes laid in and including trenches exceeding 2 and not exceeding 3m deep.	m	39		
	<u>'Rofo Engineering' stainless steel grade 304 traps, drains, etc:</u>				
13	'RO280V NW100 SQ' floor drain with holes including connections to 110mm PVC pipe in concrete floor with floor hardener finish.	No	5		
	<u>Sumps, catchpits, inspection chambers, etc.:</u>				
14	Excavate for and build stormwater catch pit size 300 x 300 x exceeding 0,5m and not exceeding 1,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 760 x 760 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with mild steel angle frame and grating (frame and grating elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes.	No	10		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
15	Excavate for and build stormwater catch pit Type B size 600 x 600 x exceeding 0,5m and not exceeding 1,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1800 x 1800 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with mild steel angle frame and grating (frame and grating elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Catchpit Type B detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
16	Excavate for and build stormwater catch pit Type B size 600 x 600 x exceeding 1,0m and not exceeding 1,5m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1800 x 1800 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with mild steel angle frame and grating (frame and grating elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Catchpit Type B detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
17	Excavate for and build stormwater catch pit Type A size 650 x 900 x exceeding 1,5m and not exceeding 2,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 2400 x 880mm overall x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with mild steel angle frame and grating (frame and grating elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Catchpit Type A detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
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Item		Unit	Quantity	Rate	Amount
18	Excavate for and build stormwater catch pit Type A size 650 x 900 x exceeding 2,0m and not exceeding 2,5m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 2400 x 880mm overall x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with mild steel angle frame and grating (frame and grating elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Catchpit Type A detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
19	Excavate for and build stormwater catch pit Type A size 650 x 900 x exceeding 2,5m and not exceeding 3,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 2400 x 880mm overall x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with mild steel angle frame and grating (frame and grating elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Catchpit Type A detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
20	Excavate for and build stormwater manhole size 750 x 750 x exceeding 0,5m and not exceeding 1,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1210 x 1210 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebated for and fitted with cast iron cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Manhole Detail detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 3					
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Item		Unit	Quantity	Rate	Amount
21	Excavate for and build stormwater manhole size 750 x 750 x exceeding 1,0m and not exceeding 1,5m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1210 x 1210 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebated for and fitted with cast iron cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Manhole Detail detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	2		
22	Excavate for and build stormwater manhole size 750 x 750 x exceeding 1,5m and not exceeding 2,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1210 x 1210 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebated for and fitted with cast iron cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Manhole Detail detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	2		
23	Excavate for and build stormwater manhole size 750 x 750 x exceeding 2,0m and not exceeding 2,5m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1210 x 1210 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebated for and fitted with cast iron cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Manhole Detail detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Stormwater Drainage					

Item		Unit	Quantity	Rate	Amount
24	Excavate for and build stormwater manhole size 750 x 750 x exceeding 2,5m and not exceeding 3,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1210 x 1210 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebated for and fitted with cast iron cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Manhole Detail detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
25	Excavate for and build stormwater kerb inlet exceeding 1000mm deep and not exceeding 1500mm deep internally complete including all channels, kerbs, transitions, excavations, formwork, reinforcement, backfilling, compaction, etc., Kerb Inlet Detail, detail on Drawing Number P1985-Civil-C04 Rev 01 General Details Sheet 2 of 2 attached to these Bills of Quantities.	No	1		
26	Excavate for and build stormwater kerb inlet exceeding 1500mm deep and not exceeding 2000mm deep internally complete including all channels, kerbs, transitions, excavations, formwork, reinforcement, backfilling, compaction, etc., Kerb Inlet Detail, detail on Drawing Number P1985-Civil-C04 Rev 01 General Details Sheet 2 of 2 attached to these Bills of Quantities.	No	2		
27	Excavate for and build stormwater kerb inlet exceeding 200mm deep and not exceeding 2500mm deep internally complete including all channels, kerbs, transitions, excavations, formwork, reinforcement, backfilling, compaction, etc., Kerb Inlet Detail, detail on Drawing Number P1985-Civil-C04 Rev 01 General Details Sheet 2 of 2 attached to these Bills of Quantities.	No	1		
28	Excavate for and build stormwater kerb inlet exceeding 2500mm deep and not exceeding 3000mm deep internally complete including all channels, kerbs, transitions, excavations, formwork, reinforcement, backfilling, compaction, etc., Kerb Inlet Detail, detail on Drawing Number P1985-Civil-C04 Rev 01 General Details Sheet 2 of 2 attached to these Bills of Quantities.	No	1		
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Item		Unit	Quantity	Rate	Amount
29	Excavate for and build stormwater catch pit Type C size 800 x 1530 x exceeding 1,5m and not exceeding 2,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 3900 x 1990mm overall x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with mild steel angle frame and grating (frame and grating elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Stormwater Catchpit Type C detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
30	Excavate for and build stormwater relax tank size 2850mm x 1500mm x exceeding 1,0m deep and not exceeding 1,5mm deep internally with Type 2A manhole cover and frame (elsewhere measured), 1405mm x 800mm x 800mm concrete encasing (25Mpa at 28 days in 19mm stone) complete including all excavations, formwork, reinforcement, backfilling, compaction, etc., Relax Tank Detail, detail on Drawing Number P1985-Civil-C04 Rev 01 General Details Sheet 2 of 2 attached to these Bills of Quantities	No	2		
	<u>Gratings, covers, etc:</u>				
31	550mm Diameter x 93kg type 2A heavy duty manhole cover and frame.	No	11		
32	600 x 600mm Hot dipped galvanised angle section frame and grating, comprising of 70 x 70 x 8mm angle iron frame size 630 x 630mm cast into concrete and grating size 600 x 600mm comprising of 60 x 8mm flat iron support frame filled in with 50mm diameter high tensile steel bars at 100mm centres installed complete as detailed on Stormwater Cachpit Type B, detail on Drawing No. P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities	No	2		
33	900 x 650mm Hot dipped galvanised angle section frame and grating, comprising of 50 x 50 x 6mm angle iron frame size 930 x 680mm cast into concrete and grating size 900 x 650mm comprising of 40 x 6mm flat iron support frame filled in with 25mm diameter high tensile steel bars at 65mm centres installed complete as detailed on Stormwater Cachpit Type A and C, detail on Drawing No. P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities	No	4		
TOTAL CARRIED TO BILL SUMMARY				R	
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Stormwater Drainage					

Item		Unit	Quantity	Rate	Amount
34	300 x 300mm x 10,3kg Type 2934 light duty cast iron grating and frame.	No	10		
	<u>Sundries:</u>				
35	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m³	99		
36	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m³	352		
37	Extra over backfilling to pipe trenches, chambers, etc. for backfilling with sand material supplied by the Contractor to bedding and cradle in accordance with SABS 1200M compacted to 98 % Mod AASHTO density.	m³	325		
38	Extra over backfilling to pipe trenches, chambers, etc. for backfilling with G7 material supplied by the Contractor to bedding and cradle in accordance with SABS 1200M compacted to 98 % Mod AASHTO density.	m³	107		
39	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m³	432		
40	Cutting into side of existing inspection chamber for and connecting new 450mm pipe including making good concrete benching. (Note existing connection is on a 750mm diameter line)	No	2		
	<u>Testing:</u>				
41	Testing drainage pipe system.	Item	1		
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Stormwater Drainage					

Amount

SECTION NO. 3
EXTERNAL WORKS
Bill No. 5
STORMWATER DRAINAGE
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Section No. 3
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Stormwater Drainage

Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 3</u></p> <p align="center"><u>EXTERNAL WORKS</u></p> <p align="center"><u>Bill No. 6</u></p> <p align="center"><u>SOIL DRAINAGE</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item.</p> <p><u>uPVC pipes and fittings:</u></p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings.</p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 6				
Soil Drainage				

Item	Unit	Quantity	Rate	Amount
<p><u>Vitrified clay pipes etc:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches) Clause 5.7.2 will only be applicable if authorised by the Engineer in writing.</p> <p>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.</p> <p><u>Descriptions of pipes laid in trenches:</u></p> <p>Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.</p> <p><u>Descriptions of catchpits, junction boxes, manholes, etc:</u></p> <p>Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.</p> <p><u>Precast concrete manoles:</u></p> <p>Precast concrete manholes shall be constructed using dolomitic aggregate.</p> <p><u>Step irons:</u></p> <p>Calcamite step irons are to be cast into the manhole walls as specified.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 6				
Soil Drainage				

Item		Unit	Quantity	Rate	Amount
	<u>Existing services:</u>				
	There are a number of existing services within the site boundaries, some of these are shown on the drawings. This information is not exhaustive and does not relieve the contractor of the responsibility of locating all existing services prior to construction. There are existing water, storm water, telephone, communications and electrical services on the site. Work is to be carried out without any disruption to existing services, this includes instances where newly constructed services are to be connected to existing 'live' services.				
	<u>SOIL DRAINAGE (CPAP Work Group No 146)</u>				
	<u>uPVC Class 34 Socketed sewer piping with bedding and filling in accordance with SABS 1200LB:</u>				
1	110mm Pipes vertically or ramped to cleaning eyes etc (no excavation).	m	2		
2	160mm Pipes vertically or ramped to cleaning eyes etc (no excavation).	m	11		
3	110mm Pipes laid in and including trenches not exceeding 1m deep.	m	18		
4	110mm Pipes laid in and including trenches exceeding 1 and not exceeding 2m deep.	m	13		
5	110mm Pipes laid in and including trenches exceeding 2 and not exceeding 3m deep.	m	2		
6	160mm Pipes laid in and including trenches not exceeding 1m deep.	m	43		
7	160mm Pipes laid in and including trenches exceeding 1 and not exceeding 2m deep.	m	149		
8	160mm Pipes laid in and including trenches exceeding 2 and not exceeding 3m deep.	m	36		
	<u>Extra over uPVC class 34 pipes for fittings:</u>				
9	110mm Bend.	No	6		
10	110mm 45 Degree bend.	No	9		
11	160mm Bend.	No	2		
12	160mm 45 Degree bend.	No	11		
13	110mm Junction.	No	3		
14	160mm Junction.	No	11		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Soil Drainage				

Item		Unit	Quantity	Rate	Amount
15	110mm Access bend.	No	2		
16	160mm Access bend.	No	5		
17	110mm Access junction.	No	1		
18	160mm Access junction.	No	3		
19	110mm Access reducing junction.	No	5		
20	160mm Access reducing junction.	No	2		
	<u>PVC gulleys:</u>				
21	110mm Gully not exceeding 1m deep with and including precast concrete gully head surround.	No	4		
	<u>'Rofo Engineering' stainless steel grade 304 traps, drains, etc:</u>				
22	'RO280V NW100 SQ' floor drain with holes including connections to 110mm PVC pipe in concrete floor with floor hardener finish.	No	3		
	<u>Manholes, floor drains etc:</u>				
23	Excavate for and build concrete sump 600 x 600 x exceeding 0.5m and not exceeding 1,0m deep internally, formed of 200mm thick cement concrete (30Mpa) bottom and walls, mass concrete (30Mpa) benching, 110mm uPVC gully head and P-trap cast into benching, top of wall rebated for 50 x 50 x 4mm angle (angle elsewhere) measured, including all necessary fittings, excavations, formwork, holes through sides for pipes etc., as detailed on Drawing Number SK-S-012 RO Plant Drainage Manhole attached to these Bills of Quantities.	No	1		
24	Excavate for and build sewer manhole size 750 x 750 x exceeding 0,5m and not exceeding 1,0m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1210 x 1210 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with cast iron cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Sewer Manhole - up to 1500mm, detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
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Bill No. 6					
Soil Drainage					

Item		Unit	Quantity	Rate	Amount
25	Excavate for and build sewer manhole size 750 x 750 x exceeding 1,0m and not exceeding 1,5m deep internally, formed of 150mm thick cement concrete (25MPa) bottom projecting 75mm all round, mass concrete (15Mpa) benching, hard burnt one brick sides with galvanised brickforce between each course, rendered internally in 1:3 cement plaster, 1210 x 1210 x 200mm thick (25Mpa) reinforced concrete cover slab including reinforcing, rebating for and fitted with cast iron cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary fittings, excavations, formwork, holes through sides for pipes etc as per Sewer Manhole - up to 1500mm, detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	3		
26	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 1,5m and not exceeding 2,0m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:2 cement mortar, 150mm thick (25MPa/19mm) concrete intermediate cover slab between 1000mm and 700mm internal diameter segments with Y12 bars at 150mm centres finished smooth with a steel float and bedded in 1:2 cement mortar, 1300mm diameter x 350mm thick (20Mpa/19mm) unreinforced concrete bottom, including cast iron step irons, concrete benching, uPVC channels and fittings, sealing joints between manhole rings with Bitu-Joint sealer, backfilling and ramming, carting away surplus excavated material, formwork, holes through sides for pipes, etc complete as per Sewer Manhole - Over 1500mm, detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	5		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 3					
Bill No. 6					
Soil Drainage					

Item		Unit	Quantity	Rate	Amount
27	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 2,0m and not exceeding 2,5m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:2 cement mortar, 150mm thick (25MPa/19mm) concrete intermediate cover slab between 1000mm and 700mm internal diameter segments with Y12 bars at 150mm centres finished smooth with a steel float and bedded in 1:2 cement mortar, 1300mm diameter x 350mm thick (20Mpa/19mm) unreinforced concrete bottom, including cast iron step irons, concrete benching, uPVC channels and fittings, sealing joints between manhole rings with Bitu-Joint sealer, backfilling and ramming, carting away surplus excavated material, formwork, holes through sides for pipes, etc complete as per Sewer Manhole - Over 1500mm, detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
28	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 2,5m and not exceeding 3,0m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:2 cement mortar, 150mm thick (25MPa/19mm) concrete intermediate cover slab between 1000mm and 700mm internal diameter segments with Y12 bars at 150mm centres finished smooth with a steel float and bedded in 1:2 cement mortar, 1300mm diameter x 350mm thick (20Mpa/19mm) unreinforced concrete bottom, including cast iron step irons, concrete benching, uPVC channels and fittings, sealing joints between manhole rings with Bitu-Joint sealer, backfilling and ramming, carting away surplus excavated material, formwork, holes through sides for pipes, etc complete as per Sewer Manhole - Over 1500mm, detail on Drawing Number P1985-Civil-C03 Rev 01 General Details Sheet 1 of 2 attached to these Bills of Quantities.	No	1		
	<u>Gratings, covers, etc:</u>				
29	550mm Diameter x 75kg type 4A medium duty manhole cover and frame.	No	3		
30	550mm Diameter x 93kg type 2A heavy duty manhole cover and frame.	No	8		
TOTAL CARRIED TO BILL SUMMARY				R	
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Bill No. 6					
Soil Drainage					

Item		Unit	Quantity	Rate	Amount
31	600 x 600mm Grade 316 stainless steel angle section frame and grating, comprising of 50 x 50 x 4mm angle iron frame size 700 x 700mm cast into concrete and 600 x 600mm grating formed of 'Vitagrid VE 40' 40 x 4,5mm Grade 316 stainless steel grating installed complete as detailed on Drawing Number SK-S-012 RO Plant Drainage Manhole attached to these Bills of Quantities.	No	1		
	<u>Sundries:</u>				
32	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m³	73		
33	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m³	249		
34	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m³	207		
35	Extra over backfilling to pipe trenches, chambers, etc. for backfilling with sand material supplied by the Contractor to bedding and cradle in accordance with SABS 1200M compacted to 98% Mod AASHTO density.	m³	119		
36	Extra over backfilling to pipe trenches, chambers, etc. for backfilling with G7 material supplied by the Contractor in accordance with SABS 1200M compacted to 98% Mod AASHTO density.	m³	86		
37	Unreinforced concrete in trenches in encasing to bends, junctions, etc., including extra excavation, formwork, cart away, etc.	m³	4		
38	Unreinforced concrete encasing to 110mm horizontal pipe.	m	8		
39	Unreinforced concrete encasing to 160mm horizontal pipe.	m	12		
40	100mm Cast iron 'ABC' cleaning eye.	No	1		
41	160mm Cast iron 'ABC' cleaning eye.	No	5		
42	Cutting into side of existing inspection chamber for and connecting 160mm pipe, including inserting 160mm channel junction and making good concrete benching	No	1		
	<u>Testing:</u>				
43	Testing drainage pipe system.	Item	1		
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SECTION NO. 3
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Soil Drainage

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 7</u></p> <p style="text-align: center;"><u>WATER SUPPLY IN GROUND</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>uPVC pressure pipes and fittings:</u></p> <p>Pipes for water supply shall be of the class stated.</p> <p>Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings.</p> <p>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.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 7				
Water Supply In Ground				

Item	Unit	Quantity	Rate	Amount
<p><u>Copper pipes:</u></p> <p>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.</p> <p><u>Reducing fittings:</u></p> <p>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.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SAB.</p> <p>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.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Descriptions of pipes laid in trenches:</u></p> <p>Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.</p> <p><u>Descriptions of catchpits, junction boxes, manholes, etc:</u></p> <p>Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Water Supply In Ground				

Item	Unit	Quantity	Rate	Amount
<p><u>Thrust Blocks:</u></p> <p>Thrust blocks for pressure pipes to be formed of Class B concrete shaped for fittings with notchings of suitable size to take fittings and with sinkings and flanges of short collar detachable joints of suitable size to allow for removing of coupling when necessary including necessary formwork, excavation, etc</p> <p><u>Existing services:</u></p> <p>There are a number of existing services within the site boundaries, some of these are shown on the drawings. This information is not exhaustive and does not relieve the contractor of the responsibility of locating all existing services prior to construction. There are existing water, storm water, telephone, communications and electrical services on the site. Work is to be carried out without any disruption to existing services, this includes instances where newly constructed services are to be connected to existing 'live' services.</p> <p><u>Corrosion Protection:</u></p> <p>All steel and cast iron fittings, specials and valves shall be fusion bonded epoxy lined and coated, film thickness 300 microns. Steel pipes and fittings shall be hot dipped galvanised and Fusion Bonded Epoxy coated and lined. The film thickness shall be 300 microns. Galvanising shall be in accordance with SABS 763. Fusion Bonded Epoxy lining and coating to be to SABS 1217, and strictly in accordance with the manufacturer's specifications. All pipes shall be inspected before and after laying, and any damage shall be made good with cold galvanising and the appropriate epoxy paint. Any on-site cutting and jointing of pipes shall be similarly treated.</p> <p><u>Corrosive Soil:</u></p> <p>All nuts, bolts, couplings, screwed threads and saddles are to be treated with a compatible primer, packed with a bitumen or tar based mastic and wrapped with 'Denso Tape'. The cost of this work shall be included in the rates tendered for supplying and fixing fittings, specials and valves.</p> <p><u>Bolts for Flanges:</u></p> <p>All cast iron valves are to be class 16 waterworks pattern with wedge gate to SABS 664 and 665, clock-wise closing with non-rising spindle, and fitted with a valve cap. Valves are to be embossed with the SABS mark, operating class and size. Flanged valves are to be drilled according to SABS 1123 (1977) table 16.</p> <p><u>Valves:</u></p> <p>Bolts and nuts shall comply with the standards of SABS 136 and shall be hot dipped galvanised to SABS 763 (1977)</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Bill No. 7				
Water Supply In Ground				

Item		Unit	Quantity	Rate	Amount
	<u>WATER SUPPLIES IN GROUND (CPAP Work Group No 148)</u>				
	<u>uPVC Class 9 pressure water supply pipe jointed with 'Lyng' mechanical rubber ring joints including short lengths and cutting and laid in pipe trenches as SABS 1200 LB of 1979 and SABS 1200 DB of 1982:</u>				
1	50mm Pipes laid in trenches and including trenches not exceeding 1m deep.	m	30		
	<u>Extra over Class 9 uPVC pressure pipes with 'Lyng' mechanical joints for UPVC pressure fittings with 'Lyng' couplers:</u>				
2	50mm 90 Degree bends.	No	7		
3	50mm Adaptor coupling (uPVC to GMS)	No	2		
	<u>uPVC Class 12 pressure water supply pipe jointed with 'Lyng' mechanical rubber ring joints including short lengths and cutting and laid in pipe trenches as SABS 1200 LB of 1979 and SABS 1200 DB of 1982:</u>				
4	110mm Pipes laid in trenches and including trenches not exceeding 1m deep.	m	358		
	<u>Extra over Class 12 uPVC pressure pipes with 'Lyng' mechanical joints for UPVC pressure fittings with 'Lyng' couplers:</u>				
5	75 x 50mm Reducer.	No	6		
6	110 x 75mm Reducer.	No	8		
7	110mm 90 degree bend.	No	8		
8	110mm Tee.	No	6		
9	110mm Cast iron flanged adaptor.	No	14		
10	110mm x 50mm Saddle with threaded outlet including nuts and bolts and drilling boss and pipe.	No	3		
	<u>Galvanised steel pipes with screwed and socketed joints:</u>				
11	20mm Pipes.	m	3		
	<u>Extra over galvanised steel pipes with screwed and socketed joints for screwed and socketed fittings:</u>				
12	20mm Fittings.	No	8		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 3				
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	Water Supply In Ground				

Item		Unit	Quantity	Rate	Amount
	<u>Valves, water meters and pipe fittings within and around the meter chamber installed complete as detailed on Drawing No. P1985-Civil-CO4 Rev 01 General Details Sheet 2 of 2 attached to these Bills of Quantities:</u>				
13	80mm Galvanised steel pipe 535mm long with flanges both ends.	No	2		
14	110 x 80mm Cast iron flanged reducer.	No	2		
15	110mm Cast iron flanged adaptor.	No	8		
16	110mm Flanged resilient seal gate valve with cap top.	No	4		
17	110mm Non return valve including couplings to uPVC pipe.	No	1		
18	80mm 'SENSUS' combination water meter with flanges drilled to table 16 and bolted joints.	No	1		
	<u>Sundries:</u>				
19	20mm 'Cobra 108-15 3/4 rough brass hose bibtap.	No	2		
	<u>Sandblast to bare metal, hot dip galvanise or zinc metal spary, prime with one coat 'Duram NS 4' and apply 'National Industries Ultracoat 400B 199 BC Grey/ 500 B 199 BC:</u>				
20	80mm Galvanised steel pipe 535mm long with flanges both ends.	No	2		
21	110 x 80mm Galvanised flanged reducer.	No	2		
22	110mm Cast iron flanged adaptor.	No	2		
23	110mm Flanged resilient seal gate valve with cap top.	No	4		
24	110mm Non return valve including couplings to uPVC pipe.	No	1		
	<u>Valves or meters chambers:</u>				
25	Excavate for and build valve chamber size 1500 x 800 x 1500mm deep overall valve and water meter chambe, including 500mm diameter Type 4A cast iron manhole cover and frame and 'Saint Gobain' Type LD 16099 GI stopcock assess box type 7 installed complete as Valve and Water Meter Chamber detail on Drawing No P1985-Civil-C04 Rev1 General Details attached to these Bills of Quantities.	No	1		
26	Precast concrete valve chamber for 110mm valve with and including precast concrete cover including excavations, backfilling, carting away surplus material, etc., as Gate Valve and Chamber detail on Drawing No P198-Civil-C03 Rev 1 General Details Sheet 1 attached to these Bills of Quantities.	No	3		
	TOTAL CARRIED TO BILL SUMMARY			R	
	Section No. 3				
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	Water Supply In Ground				

Item		Unit	Quantity	Rate	Amount
	<u>Sundries:</u>				
27	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m ³	55		
28	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m ³	193		
29	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m ³	138		
30	Extra over backfilling to pipe trenches, chambers, etc. for backfilling with sand material supplied by the Contractor to bedding and cradle in accordance with SABS 1200M compacted to 98% Mod AASHTO density.	m ³	138		
31	Unreinforced concrete in thrust blocks at bends, tees, etc including necessary extra excavations, formwork , etc.	m ³	8		
32	Locate, cut into and temporarily stop off 200mm diameter water pipe, insert reducing tee and joint to new 110mm uPVC pipe.	No	1		
33	160mm Diameter uPVC pipe 1400mm high cast in 20MPa/19mm concrete around 20mm diameter vertical stand pipe with bottom 600mm below ground, including two 20mm diameter holes through uPVC pipe, necessary excavation, risk of collapse, backfilling, carting away of surplus material, concrete etc.	No	2		
	<u>Testing:</u>				
34	Testing water pipe system.	Item	1		
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Water Supply In Ground

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 8</u></p> <p style="text-align: center;"><u>WATER SUPPLIES TO FIRE APPLIANCES</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item.</p> <p><u>uPVC pressure pipes and fittings:</u></p> <p>Pipes for water supply shall be of the class stated.</p> <p>Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings.</p> <p>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.</p> <p style="text-align: right;">TOTAL CARRIED TO BILL SUMMARY</p> <p>Section No. 3</p> <p>Bill No. 8</p> <p>Water Supplies To Fire Appliances</p>				
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Item	Unit	Quantity	Rate	Amount
<p><u>Copper pipes:</u></p> <p>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.</p> <p><u>Reducing fittings:</u></p> <p>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.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SAB.</p> <p>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.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Descriptions of pipes laid in trenches:</u></p> <p>Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.</p> <p><u>Descriptions of catchpits, junction boxes, manholes, etc:</u></p> <p>Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Water Supplies To Fire Appliances				

Item	Unit	Quantity	Rate	Amount
<p><u>Thrust Blocks:</u></p> <p>Thrust blocks for pressure pipes to be formed of Class B concrete shaped for fittings with notchings of suitable size to take fittings and with sinkings and flanges of short collar detachable joints of suitable size to allow for removing of coupling when necessary including necessary formwork, excavation, etc</p> <p><u>Existing services:</u></p> <p>There are a number of existing services within the site boundaries, some of these are shown on the drawings. This information is not exhaustive and does not relieve the contractor of the responsibility of locating all existing services prior to construction. There are existing water, storm water, telephone, communications and electrical services on the site. Work is to be carried out without any disruption to existing services, this includes instances where newly constructed services are to be connected to existing 'live' services.</p> <p><u>Corrosion Protection:</u></p> <p>All steel and cast iron fittings, specials and valves shall be fusion bonded epoxy lined and coated, film thickness 300 microns. Steel pipes and fittings shall be hot dipped galvanised and Fusion Bonded Epoxy coated and lined. The film thickness shall be 300 microns. Galvanising shall be in accordance with SABS 763. Fusion Bonded Epoxy lining and coating to be to SABS 1217, and strictly in accordance with the manufacturer's specifications. All pipes shall be inspected before and after laying, and any damage shall be made good with cold galvanising and the appropriate epoxy paint. Any on-site cutting and jointing of pipes shall be similarly treated.</p> <p><u>Corrosive Soil:</u></p> <p>All nuts, bolts, couplings, screwed threads and saddles are to be treated with a compatible primer, packed with a bitumen or tar based mastic and wrapped with 'Denso Tape'. The cost of this work shall be included in the rates tendered for supplying and fixing fittings, specials and valves.</p> <p><u>Bolts for Flanges:</u></p> <p>All cast iron valves are to be class 16 waterworks pattern with wedge gate to SABS 664 and 665, clock-wise closing with non-rising spindle, and fitted with a valve cap. Valves are to be embossed with the SABS mark, operating class and size. Flanged valves are to be drilled according to SABS 1123 (1977) table 16.</p> <p><u>Valves:</u></p> <p>Bolts and nuts shall comply with the standards of SABS 136 and shall be hot dipped galvanised to SABS 763 (1977)</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Water Supplies To Fire Appliances				

Item		Unit	Quantity	Rate	Amount
	<u>WATER SUPPLIES TO FIRE APPLIANCES (CPAP Work Group No 148)</u>				
	<u>uPVC Class 12 pressure water supply pipe jointed with 'Lyng' mechanical rubber ring joints including short lengths and cutting and laid in pipe trenches as SABS 1200 LB of 1979 and SABS 1200 DB of 1982:</u>				
1	75mm Pipes laid in and including trenches not exceeding 1m deep.	m	167		
	<u>Extra over Class 12 uPVC pressure pipes with 'Lyng' mechanical joints for UPVC pressure fittings with 'Lyng' couplers:</u>				
2	75mm 90 Degree bend.	No	10		
3	75mm Tee.	No	3		
4	75mm ND Flexible adaptor (Klamflex Ranger).	No	6		
	<u>Galvanised steel pipes:</u>				
5	80mm Pipes.	m	3		
6	80mm Pipes in laid in and including trenches not exceeding 1m deep .	m	2		
	<u>Extra over galvanised steel pipes for steel fittings:</u>				
7	80mm Elbow.	No	2		
8	80mm Longscrew connector.	No	2		
9	80mm 'Johnson' coupling.	No	2		
	<u>Galvanised steel pipes with screwed and flanged joints including wrapid bond wrapping to underground pipe fittings.</u>				
10	75mm Diameter x 430mm pipe with one end butt welded to bend	No	1		
11	75mm Diameter x 1036mm pipe with one end butt welded to bend	No	1		
12	Galvanised steel pipe size 80mm Diameter x 575mm long with one end flanged and the other to suit pipeline tee flange with bottom end denso wrapped.	No	1		
13	75mm 90 degree radius bend	No	3		
14	75mm PVC flange adapter	No	6		
15	75mm G.I puddle flange	No	6		
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Item		Unit	Quantity	Rate	Amount
	<u>Valves, meters etc:</u>				
16	80mm Diameter RSV cast iron gate valve with socket ends Class 16 Left hand closing including bolts, nuts and packing flanges to be SABS 1123 T10.	No	2		
17	80mm 'VENTOMAT RBX' or equally approved PN25 air-valve including joints to pipes.	No	1		
	<u>Valves or meters chambers:</u>				
18	1440 x 1440mm Brick valve chamber not exceeding 1000mm deep internally consisting of Type 4 cast iron cover and frame size 550mm diameter including excavations, backfilling, carting away surplus material.	No	1		
19	Precast concrete valve chamber for 80mm valve with and including precast concrete cover including excavations, backfilling, carting away surplus material, etc., as Gate Valve and Chamber detail on Drawing No P198-Civil-C03 Rev 1 General Details Sheet 1 attached to these Bills of Quantities.	No	1		
	<u>Sundries:</u>				
20	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m ³	22		
21	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m ³	72		
22	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m ³	53		
23	Extra over backfilling to pipe trenches, chambers, etc. For backfilling with sand material to bedding and cradle in accordance with SABS 1200M compacted to 98% Mod AASHTO density.	m ³	53		
24	Unreinforced concrete in thrust blocks at bends, tees, etc including necessary extra excavations, formwork , etc.	m ³	16		
25	Locate, cut into and temporarily stop off 200mm diameter water pipe, insert reducing tee and joint to new 75mm uPVC pipe.	No	1		
	<u>Testing:</u>				
26	Testing fire water pipe system.	Item	1		
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Item		Unit	Quantity	Rate	Amount
	<u>FIRE APPLIANCES ETC</u>				
	<u>Fire Hydrants, etc:</u>				
27	100 x 80mm brass double booster pump connection and Y-piece, with caps and chains	No	1		
28	75 x 63mm Brass reducer bush.	No	2		
29	75 x 63mm Brass transition coupler and male thread.	No	2		
30	80mm Brass right angle shielded spindle hydrant valve with cap and chain as per SABS 1128-2/ SANS 1128- -2.	No	2		
31	Hydrant keys.	No	2		
32	80mm Hydrant tee drilled to table 16, including connecting bolts, gaskets, etc.	No	4		
	<u>Clean all surfaces with a high pressure waterwasher using a mixuture of water and 'Plascon Aquasolve' degreaser, apply two inner layers with a 50 percent overlay of 'Canusa Wrapid' tape and single outer wrap with a 50 percent overlay of 'Wrapid Bond':</u>				
33	80mm Pipes.	m	5		
	<u>Fire hydrant pedestals:</u>				
34	Reinforced concrete 25Mpa/19mm hydrant pedestal 700mm high cast around vertical 80mm galvanised steel water pipe with bottom 1000mm minimum below ground level, 440 x 440mm square at base and tapering to octagonal shaped top 240 x 240mm overall including all necessary excavation, smooth off shutter formwork, concrete, 4 x Y12 reinforcing bars vertically, finished smooth off shutter and painted two coats of approved golden yellow paint to exposed surfaces (price to include all pipes and fittings up to hydrant valve) as detailed on Drawing No. 33722-DET-9 attached to these Bills of Quantities.	No	2		
35	Reinforced concrete 25Mpa/19mm booster pedestal 800mm high cast around vertical pipe with bottom 600mm minimum below ground level, 340 x 340mm square at base and tapering to octagonal shaped top 210 x 210mm overall including all necessary excavation, smooth off shutter formwork, concrete, 4 x Y12 reinforcing bars vertically, finished smooth off shutter and painted two coats of approved golden yellow paint to exposed surfaces (price to include all pipes and fittings up to booster connection) as detailed on Drawing No. 33722-DET-9 attached to these Bills of Quantities.	No	1		
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Water Supplies To Fire Appliances

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 9</u></p> <p style="text-align: center;"><u>DUCTS FOR ELECTRICAL CABLES ETC</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item.</p> <p><u>uPVC pipes and fittings:</u></p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings.</p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p>				
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Item	Unit	Quantity	Rate	Amount
<p><u>Vitrified clay pipes etc:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches) Clause 5.7.2 will only be applicable if authorised by the Engineer in writing.</p> <p>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.</p> <p><u>Descriptions of pipes laid in trenches:</u></p> <p>Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.</p> <p><u>Descriptions of catchpits, junction boxes, manholes, etc:</u></p> <p>Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.</p> <p><u>Precast concrete manoles:</u></p> <p>Precast concrete manholes shall be constructed using dolomitic aggregate.</p> <p><u>Step irons:</u></p> <p>Calcamite step irons are to be cast into the manhole walls as specified.</p>				
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Item		Unit	Quantity	Rate	Amount
	<p><u>Existing services:</u></p> <p>There are a number of existing services within the site boundaries, some of these are shown on the drawings. This information is not exhaustive and does not relieve the contractor of the responsibility of locating all existing services prior to construction. There are existing water, storm water, telephone, communications and electrical services on the site. Work is to be carried out without any disruption to existing services, this includes instances where newly constructed services are to be connected to existing 'live' services.</p> <p><u>DUCTS FOR ELECTRICAL AND TELEPHONE CABLES, ETC. (CPAP Work Group No 146)</u></p> <p><u>Kabelflex or equally approved sleeve pipes:</u></p>				
1	Supply, lay, bed and prove 50mm diameter KABELFLEX sleeve pipes, laid in and including trenches not exceeding 1m, including all excavations, bedding, backfilling with suitable material, carting away surplus material, compacting to required density, fittings, etc., complete.	m	6		
2	Supply, lay, bed and prove 75mm diameter KABELFLEX sleeve pipes, laid in and including trenches not exceeding 1m, including all excavations, bedding, backfilling with suitable material, carting away surplus material, compacting to required density, fittings, etc., complete.	m	50		
3	Supply, lay, bed and prove set of two 110mm diameter KABELFLEX sleeve pipes, laid in and including trenches not exceeding 1m deep, including all excavations, bedding, backfilling with suitable material, carting away surplus material, compacting to required density, fittings, etc., complete.	m	85		
4	Supply, lay, bed and prove set of three 110mm diameter KABELFLEX sleeve pipes, laid in and including trenches not exceeding 1m deep, including all excavations, bedding, backfilling with suitable material, carting away surplus material, compacting to required density, fittings, etc., complete.	m	190		
5	Supply, lay, bed and prove set of two 160mm diameter KABELFLEX sleeve pipes, laid in and including trenches not exceeding 1m, including all excavations, bedding, backfilling with suitable material, carting away surplus material, compacting to required density, fittings, etc., complete.	m	25		
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Item		Unit	Quantity	Rate	Amount
6	Supply, lay, bed and prove set of four 160mm diameter KABELFLEX sleeve pipes, laid in and including trenches exceeding 1 and not exceeding 2m, including all excavations, bedding, backfilling with suitable material, carting away surplus material, compacting to required density, fittings, etc., complete.	m	60		
7	Extra for 75mm 90° Long radius bend	No	6		
8	Extra for 110mm 90° Long radius bend	No	10		
9	Extra for 160mm 90° Long radius bend	No	6		
10	Extra for cable sleeve seal	No	10		
	<u>Draw wires:</u>				
11	1,6mm Galvanised steel draw wires in continuous lengths in pipes.	m	1,180		
	<u>MANHOLES (CPAP Work Group No 146)</u>				
	<u>Manholes, etc.</u>				
12	Manhole, complete, size 600 x 600 x average 1000mm deep including 230mm brickwork, reinforced concrete slab cover and SABS 558 600 x 600mm medium duty cast iron single seal manhole cover and frame in square base including excavations, backfilling, carting away surplus material, etc.	No	8		
13	Manhole, complete, size 900 x 900 x average 1000mm deep including 230mm brickwork, reinforced concrete slab cover and SABS 558 900 x 900mm medium duty cast iron single seal manhole cover and frame in square base including excavations, backfilling, carting away surplus material, etc.	No	8		
14	Manhole, complete, size 1000 x 1000 x average 1000mm deep including 230mm brickwork, reinforced concrete slab cover and SABS 558 1000 x 1000mm diameter heavy duty cast iron single seal manhole cover and frame in square base including excavations, backfilling, carting away surplus material, etc.	No	6		
	<u>SUNDRIES (CPAP Work Group No 146)</u>				
	<u>Sundries:</u>				
15	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock	m³	88		
16	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock	m³	220		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Ducts For Electrical Cables Etc				

Item		Unit	Quantity	Rate	Amount
17	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor	m ³	260		
18	Extra over backfilling to pipe trenches, chambers, etc. for backfilling with G7 material supplied by the Contractor to bedding and cradle in accordance with SABS 1200M compacted to 98 % Mod AASHTO density.	m ³	41		
19	Extra over pipe trenches for imported sand bedding and blanket	m ³	233		
20	Unreinforced 15Mpa mass concrete encasing to horizontal pipe	m ³	2		
21	LV cable marker tape laid in open trench and 150mm above a cable 150mm wide 900 guage cable marker tape	m	410		
22	Standard precast concrete cable route marker blocks in the shape of truncated pyramids approximately 300mm high, 150 x 150mm at the top and 250 x 250mm at the bottom set in ground and protruding 50mm above ground, to route of underground cable, with brass plates cast into top of blocks with the wording 'Electrical Cable' and directional arrows and the voltage rating, all as per specification under electrical specifications.	No	8		
23	Cable painted kerb marker	No	5		
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R20 409 Elidz Bushveld Energy
EB/BUSH/01/19/Z1A

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Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 3</u></p> <p align="center"><u>EXTERNAL WORKS</u></p> <p align="center"><u>Bill No. 10</u></p> <p align="center"><u>PALISADE FENCING</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item.</p> <p>1. All fencing components are to be hot-dip galvanised after manufacture 2. Flatwrap wire to comply with CKS 592 3. Flatwrap wire and clips to be "Aluzink" coated. 4. Sole plates and portions of posts and stays embedded in ground shall be coated in bitumen.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Palisade Fencing				

Item		Unit	Quantity	Rate	Amount
	<u>FENCING</u>				
	<u>EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)</u>				
	<u>Excavation in earth not exceeding 2m deep:</u>				
1	Trenches.	m ³	14		
	<u>Extra over excavations other than bulk in earth for excavation in:</u>				
2	Soft rock.	m ³	3		
3	Hard rock.	m ³	10		
	<u>Excavation of vertical sides of excavation in earth for working space including backfilling compacted to 98% Mod. AASHTO maximum density:</u>				
4	Not exceeding 500mm deep for erection and removal of formwork to edges of mowing strips.	m ²	362		
	<u>CARTING AWAY (CPAP Work Group No 104)</u>				
	<u>Extra aver all excavations for loading, carting away and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
5	Off site to a dumping site located by the contractor.	m ³	14		
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>25Mpa/19mm stone Concrete:</u>				
6	Mowing strip under fence line.	m ³	18		
	<u>FINISHING TOP SURFACE OF CONCRETE (CPAP Work Group No 110)</u>				
	<u>Finishing top surfaces of concrete smooth with a wood float:</u>				
7	Sloping and splayed tops of beams, walls, etc.	m ²	145		
	<u>TEST BLOCKS (CPAP Work Group No 110)</u>				
	<u>Test blocks:</u>				
8	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes.	Sets	2		
	<u>SMOOTH FORMWORK (DEGREE OF ACCURACY II) (CPAP Work Group No 110)</u>				
	<u>Smooth Formwork to Sides:</u>				
9	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	724		
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Item		Unit	Quantity	Rate	Amount
	<u>HOT DIPPED GALVANIZED SECURITY FENCING</u> <u>(CPAP Work Group No 136)</u>				
	<u>Hot dipped galvanized palisade fencing:</u>				
10	<p>Palisade fence 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised posts at 3000mm centres (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only) per post, both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to post with and including 2No. 40 x 4mm a 250mm long fish plate brackets,</p> <p>bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.</p>	m	205		
11	<p>Palisade fence panel size 2150mm wide by 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised intermediate posts at maximum 3000mm centres (if more than one post required per panel, to be spaced to ensure equal width of the panels) (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only)</p>				
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
	both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to intermediate post with and including 2No. 40 x 4mm a 250mm long fish plate brackets, bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, and the bottom and top rails on the two ends fixed to brick piers with and including adequate brackets and suitable expansion bolts, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.	No	1		
12	<p>Palisade fence panel size 2880mm wide by 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised intermediate posts at a maximum of 3000mm centres (if more than one post required per panel, to be spaced to ensure equal width of the panels) (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only) per post,</p> <p>both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to intermediate post with and including 2No. 40 x 4mm a 250mm long fish plate brackets, bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, and the bottom and top rails on the two ends fixed to brick piers with and including adequate brackets and suitable expansion bolts, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.</p>	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
13	<p>Palisade fence panel size 3160mm wide by 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised intermediate posts at a maximum 3000mm centres (if more than one post required per panel, to be spaced to ensure equal width of the panels) (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only) per post,</p> <p>both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to intermediate post with and including 2No. 40 x 4mm a 250mm long fish plate brackets, bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, and the bottom and top rails on the two ends fixed to brick piers with and including adequate brackets and suitable expansion bolts, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.</p>	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Palisade Fencing					

Item		Unit	Quantity	Rate	Amount
14	<p>Palisade fence panel size 3080mm wide by 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised intermediate posts at a maximum 3000mm centres (if more than one post required per panel, to be spaced to ensure equal width of the panels) (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only) per post,</p> <p>both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to intermediate post with and including 2No. 40 x 4mm a 250mm long fish plate brackets, bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, and the bottom and top rails on the two ends fixed to brick piers with and including adequate brackets and suitable expansion bolts, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.</p>	No	23		
TOTAL CARRIED TO BILL SUMMARY				R	
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Palisade Fencing					

Item		Unit	Quantity	Rate	Amount
15	<p>Palisade fence panel size 3290mm wide by 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised intermediate posts at a maximum 3000mm centres (if more than one post required per panel, to be spaced to ensure equal width of the panels) (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only) per post,</p> <p>both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to intermediate post with and including 2No. 40 x 4mm a 250mm long fish plate brackets, bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, and the bottom and top rails on the two ends fixed to brick piers with and including adequate brackets and suitable expansion bolts, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.</p>	No	2		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 3					
Bill No. 10					
Palisade Fencing					

Item		Unit	Quantity	Rate	Amount
16	<p>Palisade fence panel size 3800mm wide by 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised intermediate posts at a maximum 3000mm centres (if more than one post required per panel, to be spaced to ensure equal width of the panels) (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only) per post,</p> <p>both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to intermediate post with and including 2No. 40 x 4mm a 250mm long fish plate brackets, bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, and the bottom and top rails on the two ends fixed to brick piers with and including adequate brackets and suitable expansion bolts, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.</p>	No	10		
TOTAL CARRIED TO BILL SUMMARY				R	
Section No. 3					
Bill No. 10					
Palisade Fencing					

Item		Unit	Quantity	Rate	Amount
17	<p>Palisade fence panel size 4840mm wide by 2000mm high comprising of 1,95m high 40 x 40 x 3mm angle iron mitred spear head profile pales at 130mm centres (16 per 3m section) in nominal panel size 3000m wide, with centre anti-sag pale 2,5m high, pales welded to and including 40 x 40 x 3mm angle section top and bottom rails, bolted to and including 76 x 3,5mm SHS hot dip galvanised intermediate posts at a maximum 3000mm centres (if more than one post required per panel, to be spaced to ensure equal width of the panels) (SABS 121, ISO 1461 1999 specification) after welding of fish tail brackets to posts to receive rails, with top of post capped and seam welded and ground smooth prior to galvanizing and a 8mm drainage hole drilled 650mm from bottom of post, with M12 x 40mm (4No per 3m section) galvanised cup square bolt and high tensile anti-vandal shear nuts, posts are to be pre-holed prior to galvanising with 2 No 4mm diameters holes at 100mm centres (on internal face only) per post,</p> <p>both holes to be filled with a grey plastic/ nylon plug to prevent water penetration, rails fixed to intermediate post with and including 2No. 40 x 4mm a 250mm long fish plate brackets, bent around half of the post, to ensure adequate grip to the post, end brackets to be used where panels are stepped, and the bottom and top rails on the two ends fixed to brick piers with and including adequate brackets and suitable expansion bolts, posts are planted in a minimum of 20MPa 19mm concrete block 400 x 400 x 650mm deep foundation to be excavated to 750mm deep for top of foundation to be 100mm below natural ground level, and the centre anti-sag pale dropper is set in 250 x 250 x 400mm deep 20Mpa 19mm concrete block foundation to be excavated to 500mm deep for top of foundation to be 100mm below natural ground level, including all necessary excavation, backfill, carting away, formwork etc installed complete.</p>	No	7		
TOTAL CARRIED TO BILL SUMMARY				R	
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Bill No. 10

Palisade Fencing

Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 3</u></p> <p align="center"><u>EXTERNAL WORKS</u></p> <p align="center"><u>Bill No. 11</u></p> <p align="center"><u>DRY DUCT</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>National treasury designated sectors instruction number 15 of 2016/2017:</u></p> <p>Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold of 100 percent for local production and content will be considered in accordance with National treasury designated sectors instruction number 15 of 2016/2017, included in Part C3 Scope of Work: C3.6 National Treasury Designated Sectors Instruction No 15 of 2016/2017 of the Bills of Quantities/ Tender Documents. Tenderers are also required to complete SBD 6.2 included in Envelope A: Volume 2 of 2 of these tender documents.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)</u></p> <p><u>Excavation in earth not exceeding 2m deep:</u></p>				
1	Trenches.	m ³	29	
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 11				
Dry Duct				

Item		Unit	Quantity	Rate	Amount
	<u>Excavation of vertical sides of excavation in earth for working space including backfilling compacted to 98% Mod. AASHTO maximum density:</u>				
2	Not exceeding 500mm deep for erection and removal of formwork to sides of duct walls, against excavated face.	m ²	39		
3	Extra over for excavation in soft rock.	m ²	1		
4	Extra over for excavation in hard rock.	m ²	2		
	<u>Extra over excavations other than bulk in earth for excavation in:</u>				
5	Soft rock.	m ³	6		
6	Hard rock.	m ³	18		
	<u>Risk of collapse of excavations other than bulk:</u>				
7	Sides of trenches and hole excavations not exceeding 1,5m deep.	m ²	39		
	<u>CARTING AWAY. (CPAP Work Group No 104)</u>				
	<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
8	Off site to a dumping site to be found by the Contractor.	m ³	29		
	<u>EARTH FILLING, ETC (CPAP Work Group No 104)</u>				
	<u>Coarse river sand filling compacted to 95% Mod. AASHTO maximum density:</u>				
9	Under floors, etc.	m ³	2		
	<u>Surface Preparation:</u>				
10	Trim and level off surface of ground (excavated or filled under a previous contract) to receive concrete surface beds, including excavating or filling, ripping and scarifying as necessary and compacting the whole area for a depth of 300mm to a density of at least 93% Mod. AASHTO maximum density, part to falls.	m ²	33		
	<u>KEEPING EXCAVATIONS FREE OF WATER (CPAP Work Group No 104)</u>				
	<u>Keeping excavations free of water:</u>				
11	Keeping excavations free of all water other than subterranean water.	Item	1		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Dry Duct				

Item		Unit	Quantity	Rate	Amount
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>10Mpa/19mm Concrete:</u>				
12	Surface blinding under footings and bases.	m³	2		
	<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>30Mpa/19mm Concrete:</u>				
13	Walls.	m³	7		
14	Bottom.	m³	8		
	<u>TEST BLOCKS. (CPAP Work Group No 110)</u>				
	<u>Test blocks:</u>				
15	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes.	Sets	2		
	<u>FINISHING TOP SURFACE OF CONCRETE. (CPAP Work Group No 110)</u>				
	<u>Finishing top surfaces of concrete smooth with a steel trowel:</u>				
16	Tops of walls, beams, etc.	m²	11		
	<u>ROUGH FORMWORK (CLASS II) (CPAP Work Group No 111)</u>				
	<u>Smooth Formwork to Sides:</u>				
17	Walls.	m²	63		
	<u>Boxing in rough formwork to form:</u>				
18	25 x 25mm Chamfers along top or bottom edges.	m	43		
	<u>REINFORCEMENT (CPAP Work Group No 114)</u>				
	<u>Mild steel reinforcement to structural concrete work:</u>				
19	10mm Diameter bars.	Tonnes	0.15		
	<u>High tensile steel reinforcement to structural concrete work:</u>				
20	20mm Diameter bars.	Tonnes	0.66		
21	16mm Diameter bars.	Tonnes	0.66		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Dry Duct				

Item		Unit	Quantity	Rate	Amount
	<u>SUNDRY STEELWORK (CPAP Work Group No 134)</u>				
	<u>Floor duct covers:.</u>				
22	40mm Thick plate duct covers in approximately 1000mm widths and suitable lengths (approximatley 900mm) laid loose in framing.	Kg	6,992		
	<u>SUNDRY GALVANIZED STEELWORK (CPAP Work Group No 134)</u>				
	<u>Floor duct covers:</u>				
23	45 x 45 x 5m Angle section framing with 30 x 5 x 100mm long fished tailed lugs welded on at 300mm centres including embedding in concrete.	Kg	176		
24	Extra over 40 x 40 x 3mm angle for mitred L-intersection.	No	6		
25	Extra over 40 x 40 x 3mm angle for T-intersection.	No	2		
26	25mm Diameter finger hole through 40mm steel.	No	65		
	<u>SCREEDS (CPAP Work Group No 142)</u>				
	<u>Screeds on concrete:</u>				
27	Average 50mm thick on floors to falls.	m ²	13		
TOTAL CARRIED TO BILL SUMMARY				R	
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Dry Duct

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 12</u></p> <p style="text-align: center;"><u>PIERS TO FENCE</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>Note:</u></p> <p>Note: The removal of bitumen paving has not been measured, and forms part of the relevant excavations. No payment will be made for the removal of bitumen pavings when it forms part of areas to be excavated.</p> <p><u>Nature of ground:</u></p> <p>A soils investigation has been carried out on the site and the report is annexed to these Bills of Quantities .</p> <p><u>Carting away of excavated material:</u></p> <p>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.</p> <p><u>Demolition:</u></p> <p>The contractor is to visit the site, and inspect the works to be demolished and price accordingly. No claims for additional cost in regard of demolitions will be considered.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
Section No. 3				
Bill No. 12				
Piers To Fence				

Item		Unit	Quantity	Rate	Amount
	<p><u>Working space:</u></p> <p>Working space for formwork to sides of all concrete, except columns, has been measured only where the concrete face is less than 600mm from the face of the measured excavation.</p> <p>Working space for formwork to sides of columns has been measured for the width of the column face only where both: the top of the column base is more than 1,5 m below the commencing level of the excavation, and the column face is less than 600 mm from the face of the measured excavation.</p> <p>No claim will be considered for any working space for formwork to concrete other than as described above nor for working space beyond the sides of trench excavations for the building of brick or block walls.</p> <p>Descriptions of excavations for working space shall be deemed to include any additional risk of collapse so incurred and the returning and compacting of the excavated material as described.</p> <p><u>Filling:</u></p> <p>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.</p> <p><u>EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)</u></p> <p><u>Excavation in earth not exceeding 2m deep:</u></p> <p>1 Holes. m³ 45</p> <p><u>Extra over excavations other than bulk in earth for excavation in:</u></p> <p>2 Soft rock. m³ 9</p> <p>3 Hard rock. m³ 36</p> <p><u>Risk of collapse of excavations other than bulk:</u></p> <p>4 Sides of trenches and hole excavations not exceeding 1,5m deep. m² 180</p> <p><u>CARTING AWAY. (CPAP Work Group No 104)</u></p> <p><u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u></p> <p>5 Off site to a dumping site to be found by the Contractor. m³ 20</p>				
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
	<u>EARTH FILLING, ETC. (CPAP Work Group No 104)</u>				
	<u>Filling with material obtained from the excavations and/or prescribed stock piles compacted to a density of at least 95% Mod. AASHTO maximum density:</u>				
6	Backfilling to trenches, holes, etc.	m ³	25		
	<u>UNREINFORCED CONCRETE (CPAP Work Group No 110)</u>				
	<u>20Mpa/19mm Concrete</u>				
7	Filling to cavity of hollow pier.	m ³	5		
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>30Mpa/19mm Concrete</u>				
8	Bases.	m ³	11		
	<u>BRICKWORK (CPAP Work Group No 116)</u>				
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u>				
9	Hollow piers filled with concrete. (concrete elsewhere)	m ³	29		
	<u>FACE BRICKWORK (CPAP Work Group No 116)</u>				
	<u>'Makana Heritage Satin' face bricks, pointed with 10mm recessed square vertical and horizontal joints:</u>				
10	Extra over ordinary brickwork for facing and pointing piers.	m ²	248		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount																																																						
<p style="text-align: center;"><u>SECTION NO. 3</u></p> <p style="text-align: center;"><u>EXTERNAL WORKS</u></p> <p style="text-align: center;"><u>Bill No. 13</u></p> <p style="text-align: center;"><u>DILUTION TANKS ETC</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Project particular specifications:</u></p> <p>The specifications particular to this project are included in C3.2 Particular Specifications: Construction Works included in Envelope A Volume 1 of 2 of the tender documents. The Contractor is to take cognisance of them when pricing the relevant items in the Bill of Quantities as no extras arising out of their failure to do so will be entertained.</p> <p><u>NOTE:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)</u></p> <p><u>Excavation in earth not exceeding 2m deep:</u></p> <tr><td>1</td><td>Holes.</td><td>m³</td><td>33</td><td></td><td></td></tr> <p><u>Excavation in earth exceeding 2m and not exceeding 4m deep:</u></p> <tr><td>2</td><td>Holes.</td><td>m³</td><td>26</td><td></td><td></td></tr> <p><u>Excavation in earth exceeding 4m and not exceeding 6m deep:</u></p> <tr><td>3</td><td>Holes.</td><td>m³</td><td>2</td><td></td><td></td></tr> <p><u>Excavation of vertical sides of excavation in earth for working space including backfilling compacted to 98% Mod. AASHTO maximum density:</u></p> <tr><td>4</td><td>Exceeding 1,5m not exceeding 3,0m deep for erection and removal of formwork to walls, against excavated face.</td><td>m²</td><td>16</td><td></td><td></td></tr> <tr><td>5</td><td>Extra over for excavation in soft rock.</td><td>m²</td><td>3</td><td></td><td></td></tr> <tr><td colspan="4">TOTAL CARRIED TO BILL SUMMARY</td><td>R</td><td></td></tr> <tr><td colspan="4">Section No. 3</td><td></td><td></td></tr> <tr><td colspan="4">Bill No. 13</td><td></td><td></td></tr> <tr><td colspan="4">Dilution Tanks Etc</td><td></td><td></td></tr>						1	Holes.	m ³	33			2	Holes.	m ³	26			3	Holes.	m ³	2			4	Exceeding 1,5m not exceeding 3,0m deep for erection and removal of formwork to walls, against excavated face.	m ²	16			5	Extra over for excavation in soft rock.	m ²	3			TOTAL CARRIED TO BILL SUMMARY				R		Section No. 3						Bill No. 13						Dilution Tanks Etc					
1	Holes.	m ³	33																																																								
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Dilution Tanks Etc																																																											

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Item		Unit	Quantity	Rate	Amount
6	Extra over for excavation in hard rock.	m ²	8		
7	Exceeding 3,0m not exceeding 4,5m deep for erection and removal of formwork to walls, against excavated face.	m ²	59		
8	Extra over for excavation in soft rock.	m ²	12		
9	Extra over for excavation in hard rock.	m ²	30		
	<u>Extra over excavations other than bulk in earth for excavation in:</u>				
10	Soft rock	m ³	12		
11	Hard rock.	m ³	30		
	<u>Risk of collapse of excavations other than bulk:</u>				
12	Sides of trench and hole excavations exceeding 1,5m deep.	m ²	76		
	<u>CARTING AWAY (CPAP Work Group No 104)</u>				
	<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
13	Off site to a dumping site to be found by the Contractor.	m ³	61		
	<u>KEEPING EXCAVATIONS FREE OF WATER CPAP Work Group No 104)</u>				
	<u>Keeping excavations free of water:</u>				
14	Keeping excavations free of all water other than subterranean water.	Item	1		
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)</u>				
	<u>10Mpa/19mm Concrete</u>				
15	Surface blinding under footings and bases.	m ³	1		
	<u>REINFORCED CONCRETE (CPAP Work Group No 110)</u>				
	<u>35Mpa/19mm Concrete with Xypex Admx C-500 NF 1,5 percent by weight additive in strict accordance with the manufacturer's instructions:</u>				
16	Slabs including beams and inverted beams.	m ³	3		
17	Walls.	m ³	14		
18	Surface beds.	m ³	4		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Dilution Tanks Etc				

Item		Unit	Quantity	Rate	Amount
<u>FINISHING TOP SURFACE OF CONCRETE (CPAP Work Group No 110)</u>					
<u>Finishing top surfaces of concrete smooth with a steel trowel:</u>					
19	Surface beds, slabs, etc.	m ²	32		
20	Tops of beams, walls, etc.	m ²	4		
<u>ROUGH FORMWORK (DEGREE OF ACCURACY II) (CPAP Work Group No 111)</u>					
<u>Rough Formwork to Sides:</u>					
21	Walls.	m ²	68		
22	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	1		
<u>Rough Formwork to Soffits:</u>					
23	Slabs propped up exceeding 1,5m and not exceeding 3,5m high and removing through 610mm diameter opening.	m ²	11		
<u>Boxing in rough formwork to form:</u>					
24	Rebated opening size 610mm diameter through 200mm slab and beam for manhole and frame (elsewhere).	No	1		
25	Rebated opening size 610mm diameter through 250mm slab and beam for manhole and frame (elsewhere).	No	1		
26	Rebated opening size 600 x 450mm through 250mm slab and beam for manhole and frame (elsewhere).	No	1		
<u>SMOOTH FORMWORK (DEGREE OF ACCURACY II) (CPAP Work Group No 111)</u>					
<u>Smooth Formwork to Sides:</u>					
27	Walls above concrete.	m ²	5		
28	Walls with total height exceeding 3,5m and not exceeding 5,0m above bearing level	m ²	60		
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Item		Unit	Quantity	Rate	Amount
	<u>MOVEMENT JOINTS, ETC (CPAP Work Group No 111)</u>				
	<u>Horizontal construction joints through concrete including 1,0kg/m2 1,25mm thick 'Xypex Concentrate 07160' cementitious slurry coat and 28 x 12mm thick 'Xypex Kuniseal C-31DS' pressed to concrete and pinched to triangular shape concrete joint waterproofing material to one face applied in strict accordance with the manufacturers instructions:</u>				
29	Between surface beds and walls 200mm wide.	m	20		
	<u>REINFORCEMENT (CPAP Work Group No 114)</u>				
	<u>High tensile steel reinforcement to structural concrete work:</u>				
30	16mm Diameter bars.	Tonnes	1.05		
31	12mm Diameter bars.	Tonnes	1.05		
	<u>SOIL DRAINAGE (CPAP Work Group No 146)</u>				
	<u>Gratings, covers, etc:</u>				
32	550mm Diameter x 75kg type 4A medium duty manhole cover and frame.	No	2		
33	600x 450mm 'Aco' ZA-MS209M load class B125 manhole cover and frame.	No	1		
	<u>TANKS (CPAP Work Group No 146)</u>				
	<u>'Jojo' Heavy duty chemical SG1,6 tank:</u>				
34	500l Tank inside concrete dilution tank.	No	1		
35	1000l Low profile tank inside concrete waste tank.	No	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Dilution Tanks Etc					

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Section No. 3

Bill No. 13

Dilution Tanks Etc

SECTION NO. 4

OCCUPATIONAL HEALTH AND

SAFETY AND COVID 19

Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 4</u></p> <p align="center"><u>OCCUPATIONAL HEALTH AND SAFETY</u></p> <p align="center"><u>AND COVID 19</u></p> <p align="center"><u>Bill No. 1</u></p> <p align="center"><u>OCCUPATIONAL HEALTH AND SAFETY</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Supplementary Preambles:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent each item.</p> <p>Prior to pricing the Principal Contractor must familiarize him/herself with the Occupational Health and Safety Act No. 85 Of 1993, Construction Regulations 2014, Covid 19 and any other relevant Regulations and Standards as well as project specific Health & Safety specifications.</p> <p>The quantities contained herein serve as a guideline only to determine if the contractor has sufficiently priced for the Health and Safety obligations and demands of the Occupational Health and Safety Act No. 85 Of 1993, Construction Regulations 2014, other relevant Regulations and Standards as well as project specific Health & Safety specifications. Were quantities are missing the contractor is to insert his own quantities based on his individual requirements to comply with the Health and Safety obligations and demands of the Occupational Health and Safety Act No. 85 Of 1993, Construction Regulations 2014, other relevant Regulations and Standards as well as project specific Health & Safety specifications.</p> <p>All Costs to comply with the obligations and demands of the Occupational Health and Safety Act No. 85 Of 1993, Construction Regulations 2014, Covid 19 regulations and any other other relevant Regulations and Standards as well as project specific Health & Safety Specifications not listed or mentioned below must be priced in Preliminaries Section of the Bills of Quantities ' Clause 7,2 Health and Safety and Covid 19' no additional claims in respect of compliance with the above mentioned will be considered.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Bill No. 1				
Occupational Health And Safety				

Item		Unit	Quantity	Rate	Amount
<u>OCCUPATIONAL HEALTH AND SAFETY</u>					
<u>Full time safety officer and COVID-19 Compliance Officer:</u>					
1	Full time attendance on site of a SACPCMP-registered construction health and safety officer or manager from the start of construction until the end of project handover. The full time construction health and safety officer shall also be responsible for management of COVID 19 compliance.	Months	7		
<u>General:</u>					
2	First aiders and first aid kits.	Item	1		
3	Medical certificates of fitness Medical examination of all employees and certification of fitness by an occupational medicine practitioner. Pre-employment, annual and exit medical examination is required.	Item	1		
4	Emergency Equipment based on the risk exposure and emergency rescue. stretchers, neck brace, spill kits, lifting and lowering hosting equipment of the injured.	Lump Sum	1		
5	Competent inspectors for equipment such as examples scaffolding inspectors and lifting machine inspector.	Lump Sum	1		
6	Mandatory training such as risk assessments, legal liability/OHS Act, incident investigation.	Lump Sum	1		
7	Provide, supply and maintenance for each worker the following SANS approved personal protective equipment & clothing as per the site-specific risk assessments: • Hard Hats • Overall/work suit (100% Cotton) • Safety boots/shoes (Steel-Toe) • Safety gumboots (Steel-Toe) • Ear Plugs/Muffs • Dust Mask(at least FF2 type) • Respirators • Safety goggles • Hand gloves •Reflector vests • Other	Item	1		
8	Barricading and hoarding for fall arrest, SANS approved safety netting (orange color with minimum of 1,2 meters	Lump Sum	1		
9	Waste bins on site and regular removal.	Item	1		
10	Construction signage, including the sign for the construction work permit number.	Item	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
11	Safe scaffolding.	Lump Sum	1		
12	Safe lifting equipment for lifting and lowering pipes.	Lump Sum	1		
13	Provision for solid edge protection on roofing structures for the pump and substations.	Lump Sum	1		
14	Occupational hygiene measurement and/or AIA certification, where required Measurement or certification of risk exposure.	Lump Sum	1		
15	Employee facilities drinking water, change facility, personal lockers, wash facilities, eating facilities) considering toilet and rest facilities along the road alignment	Lump Sum	1		
16	Dust control measure for the prevention of dust nuisance.	Item	1		
	<u>HEALTH AND SAFETY EDUCATION</u>				
	<u>Health and safety education:</u>				
17	Allow for all compulsory health and safety awareness programme (e.g. Inductions, toolbox Talks, Safety Promotions, H&S related training, etc.)	Item	1		
	<u>COVID 19</u>				
	<u>Occupational Health & Safety Obligations:</u>				
18	Update of the Contractor's site specific COVID-19 Health and Safety Plan.	Item	1		
19	Update of the Contractor's site specific COVID-19 Health and Safety Plan.	Item	1		
20	Principal Contractor's time related obligations in respect of the COVID-19 Workplace Regulations (Anticipated Period)	Months	1		
	<u>Provision of Personal Protective Equipment (PPE):</u>				
21	(a) Plastic face shield mask (quantity to be aligned with scaling in employment).	No			
22	(b) Disposable gloves (quantity to be aligned with scaling in employment).	No			
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Occupational Health And Safety				

Item		Unit	Quantity	Rate	Amount
23	(c) Cloth face masks (quantity to be aligned with scaling in employment)	No			
	<u>Cost of medical certificates and medical surveillance:</u>				
24	(a) Initial (baseline) medical examinations (quantity to be aligned with risk assessment and scaling in employment).	No			
25	(b) Periodic and exit examinations (quantity to be aligned with risk assessment and scaling in employment).	No			
	<u>Education & Training:</u>				
26	Initial COVID-19 training (quantity to be aligned with risk assessment and scaling in employment).	No			
27	Weekly COVID-19 toolbox talks.	Months	7		
	<u>Facilities and equipment:</u>				
28	(a) Separate office (16m2) with windows and a door for use by COVID-19 Compliance Officer including electricity connection and supply.	No	1		
29	(b) Provision and upkeep of infrared handheld thermometer.	No	3		
	<u>Supply and fix COVID-19 signs:</u>				
30	Hand Hygiene (800 x 800mm).	No	4		
31	Sanitisation Station (297 x 400mm).	No	4		
32	Face Mask (297 x 420mm).	No	4		
33	Social Distancing (400 x 400mm).	No	4		
34	Prevention Tips (297 x 420mm).	No	4		
	<u>Cleaning materials and Hand sanitizers:</u>				
35	Monthly disinfection of facilities.	Months	7		
36	Supply and upkeep of hand sanitizer dispensers and consumables (paper towel).	Months	7		
	<u>ENVIRONMENTAL</u>				
	<u>Environmental:</u>				
37	Provide for adequate handling and storage of materials so as to minimize contamination of ground, air or water.	Item	1		
38	Provide for the adequate and safe collection and disposal of waste material from site by an approved method.	Item	1		
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Item		Unit	Quantity	Rate	Amount
39	Provide for rehabilitation on completion of site areas and temporary access routes not covered by construction or landscaping specifications. i.e. grass seeding/hydro seeding, maintenance of alien vegetation.	Item	1		
40	Provide for stockpiling of topsoil for re-use.	Item	1		
41	Provide for a responsible person to prepare and update Method Statements, conduct regular inspections, maintain records, and report to the Principal Agent.	Item	1		
<u>COMPULSORY BREAKDOWN FOR THE ADJUSTMENT OF OHS AND COVID 19 REQUIREMENTS</u> <u>Compulsory breakdown for the adjustment of OHS and Covid 19 requirements:</u> Value related (R_____) Fixed related (R_____) Time related (R_____)					
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SECTION SUMMARY

SECTION NO. 5

PRESCRIBED TEMPORARY WORKS

Item	Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 5</u></p> <p style="text-align: center;"><u>PRESCRIBED TEMPORARY WORKS</u></p> <p style="text-align: center;"><u>Bill No. 1</u></p> <p style="text-align: center;"><u>PRESCRIBED TEMPORARY WORKS</u></p> <p><u>TRADE PREAMBLES</u></p> <p><u>Trade Preambles:</u></p> <p>For Trade Preambles refer to 'Model Preambles for Trades' (2008 edition) for the full descriptions of material to be used and work to be done in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.</p> <p><u>Note:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p>The Contractor must price for re-instating the Contractors Site Area and the access road to the Contractors Site Area under clause 19 of the Preliminaries Bill. The Contractors attention is drawn Clause PS 6 of the CEMP Rev 8 January 2016 included in Part C3.4 in Envelope A: Volume 1 of 2 of these tender documents which sets out the Employers re-instatement requirements. The Contractor is to price under clause 19.3 the re-instatement of the Contractors Site Area and the access road from the Contractors Site Area entrance to the boundary between the Contractors Site Area and the Tenants site laydown area. The Tenants EPC, Contractor will be responsible for re-instatement of their site laydown area and the access road from the entrance to their site laydown area.</p> <p>Perimeter temporary fencing of the site and to the Contractors yard has not been measured in this section and the Contractor must price for this work under clause 19 of Preliminaries Bill.</p> <p>The temporary barriers, hoardings and temporary fencing measured below are only for hoardings and fencing prescribed by the Employer, the extent of which is depicted on Drawing No 0046-Arch-Design-209 Rev 0 Site Camp Location attached to these Bills of Quantities.</p>				
TOTAL CARRIED TO BILL SUMMARY			R	
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Prescribed Temporary Works				

Item		Unit	Quantity	Rate	Amount
	<p>Furthermore, the Contractor must allow for all necessary temporary hoardings, hoardings with gantries, fans, safety screens, barriers, access gates, covered gangways, walkways, overhead protection against falling objects and materials, security fences, etc. for the enclosure of the works and elements thereof for the protection of the public and others as required by prevailing BCMM bylaws, the Construction Regulations 2014 issued in terms of Occupational Health and Safety Act 1993, any other Laws and Regulations and/or demanded by his own site requirements. Allowance must furthermore be made for periodic adjustment of any enclosure or protection and for their eventual removal. The Contractor must price for this work under clause 19 in the Preliminaries Bill.</p> <p>The dedicated Contractor site is also to house the office for the Clerk of Works and Resident Engineers as well as the office accommodation for meetings. These items are to be priced under clause 19 of the Preliminaries Bill.</p> <p>The Contractor is to price for all his other requirements and legal obligations in respect of site establishment in the Preliminaries Bill. No further claims in this respect will be entertained.</p> <p><u>Site clearance:</u></p> <p>Notwithstanding clause 4 page 6 of the Standard System of Measuring Building Work, site clearance will not be measured as per the said clause. The Contractor is to visit site and establish the extent of bush to be cleared and trees to be removed and price for all the works required to clear site under the clear site item below. No further claims in respect of site clearance will be entertained.</p> <p><u>TEMPORARY BARRIERS, SCREENS, ETC. (CPAP Work Group No 102):</u></p> <p><u>Temporary barriers, screens, etc., including removal and making good disturbed:</u></p> <p>1 Enclose opening size 500 x 500mm high in one brick wall with 19mm shutterboard securely fixed to 50 x 76mm softboard framing fixed to brickwork.</p> <p>2 Enclose opening size 900 x 2100mm high in one brick wall with 19mm shutterboard securely fixed to 50 x 76mm softboard framing fixed to brickwork.</p> <p>3 Enclose opening size 1800 x 2100mm high in one brick wall with 19mm shutterboard securely fixed to 50 x 76mm softboard framing fixed to brickwork.</p>	No	1		
		No	3		
		No	2		
	TOTAL CARRIED TO BILL SUMMARY			R	
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	Prescribed Temporary Works				

Item		Unit	Quantity	Rate	Amount
4	Enclose opening size 3000 x 900mm high in one brick wall with 19mm shutterboard securely fixed to 50 x 76mm softboard framing fixed to brickwork.	No	3		
	<u>TEMPORARY FENCING TO CORDEN OFF WORKS BETWEEN THE VARIOUS SECTIONS (CPAP Work Group No 134)</u>				
	<u>Bonnox fencing with shade cloth:</u>				
5	1,83m High 'Bonnox Close Mesh 1472/12' fence fixed to and including 150mm diameter gumpole posts at 5,0m centres cast in suitable sized concrete bases and the fence covered with shade cloth, including excavations, formwork, backfilling, cart away etc., installed complete.	m	179		
6	Carefully take down and re-erect 1,83m High 'Bonnox Close Mesh 1472/12' fence fixed to and including 150mm diameter gumpole posts at 5,0m centres cast in suitable sized concrete bases and the fence covered with shade cloth including excavations, formwork, backfilling, cart away etc., installed complete.	m	142		
7	Take down and remove 1,83m High 'Bonnox Close Mesh 1472/12' fence fixed to and including 150mm diameter gumpole posts at 5,0m centres cast in suitable sized concrete bases and the fence covered with shade cloth, gates etc., including making good.	m	179		
8	4500mm x 1830mm High Vehicle gate covered with shade cloth including gate posts, 3500mm x 1200mm High vehicle gate including gate posts, including excavations, formwork, backfilling, cart away etc., installed complete.	No	2		
9	Carefully take down and re-erect 4500mm x 1830mm High Vehicle gate covered with shade cloth including gate posts, 3500mm x 1200mm High vehicle gate including gate posts, including excavations, formwork, backfilling, cart away etc., installed complete.	No	1		
	<u>SITE CLEARANCE, ETC TO THE TENANTS LAYDOWN AREA CAMP SITE (CPAP Work Group No 104)</u>				
	<u>Site clearance:</u>				
10	Digging up and removing rubbish, debris, vegetation, hedges, shrubs all trees irrespective of girth, bush, etc. (Contractor to visit site and establish extent of bush, trees etc to be removed. Removal of all trees irrespective of girth, bush etc are deemed to be included in this item)	m ²	759		
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Item		Unit	Quantity	Rate	Amount
11	Stripping average 150mm thick layer of top soil and carting away to a dump site.	m²	759		
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SECTION NO. 6

PROVISIONAL AMOUNTS

Item		Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 6</u></p> <p align="center"><u>PROVISIONAL AMOUNTS</u></p> <p align="center"><u>Bill No. 1</u></p> <p align="center"><u>PROVISIONAL SUMS</u></p> <p><u>PROVISIONAL SUMS</u></p> <p><u>The following Selected Sub-Contract amounts are for work to be carried out by Selected Sub- Contractors in terms of clause 21 of the Principal Building Agreement:</u></p> <p><u>ELECTRICAL INSTALLATION</u></p> <p><u>Electrical installation:</u></p>					
1	Provide the amount of R 8 300 000.00 (Eight Million Three Hundred Thousand Rands) for Electrical Installation.	Item			8,300,000 00
2	Profit on above item.	Item	1		
3	Attendance on ditto.	Item	1		
<p><u>AIR CONDITIONING AND FACTORY VENTILATION INSTALLATION</u></p> <p><u>Air conditioning and factory ventilation installation:</u></p>					
4	Provide the sum of R 3 000 000.00 (Three Million Rands) for Air Conditioning and Factory Ventilation Installation.	Item			3,000,000 00
5	Profit on above item.	Item	1		
6	Attendance on ditto.	Item	1		
<p><u>SPRINKLER INSTALLATION</u></p> <p><u>Sprinkler installation:</u></p>					
7	Provide the amount of R 1 430 000.00 (One Million Four Hundred and Thirty Thousand Rands) for Sprinkler Installation.	Item			1,430,000 00
8	Profit on above item.	Item	1		
9	Attendance on ditto.	Item	1		
<p><u>FIRE DETECTION INSTALLATION</u></p> <p><u>Fire detection installation:</u></p>					
10	Provide the amount of R 510 000.00 (Five Hundred and Ten Thousand Rands) for Fire Detection Installation.	Item			510,000 00
11	Profit on above item.	Item	1		
12	Attendance on ditto.	Item	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
<u>DOCK LEVELLER INSTALLATION</u>					
<u>Dock leveller installation:</u>					
13	Provide the amount of R 300 000.00 (Three Hundred Thousand Rands) for Dock Leveller Installation.	Item			300,000 00
14	Profit on above item.	Item	1		
15	Attendance on ditto.	Item	1		
<u>HYDRANTS FIRE HOSE REELS AND FIRE EXTINGUISHERS</u>					
<u>Hydrants fire hose reels and fire extinguishers installation:</u>					
16	Provide the amount of R 450 000.00 (Four Hundred and Fifty Thousand Rands) for Hydrants, Fire Hose Reels and Fire Extinguisher Installation.	Item			450,000 00
17	Profit on above item.	Item	1		
18	Attendance on ditto.	Item	1		
<u>SOLAR SHADING</u>					
<u>Solar shading installation:</u>					
19	Provide the amount of R 100 000.00 (One Hundred Thousand Rands) for Solar Shading Installation.	Item			100,000 00
20	Profit on above item.	Item	1		
21	Attendance on ditto.	Item	1		
<u>FIBREGLASS GUTTERS AND GEBERIT PLUVIA RAINWATER SYSTEM</u>					
<u>Fireglass gutters and Geberit pluvia rainwater system:</u>					
22	Provide the amount of R 830 000.00 (Eight Hundred and Thirty Thousand Rands) for Fibreglass Gutters and Geberit Pluvia Rainwater System.	Item			830,000 00
23	Profit on above item.	Item	1		
24	Attendance on ditto.	Item	1		
<u>TIMBER DECK INSTALLATION</u>					
<u>Timber deck installation:</u>					
25	Provide the amount of R 55 000.00 (Fifty Five Thousand Rands) for Timber Deck Installation	Item			55,000 00
26	Profit on above item.	Item	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Item		Unit	Quantity	Rate	Amount
27	Attendance on ditto.	Item	1		
	<u>LANDSCAPING</u>				
	<u>Landscaping:</u>				
28	Provide the amount of R 100 000.00 (One Hundred Thousand Rands) for Landscaping.	Item			100,000 00
29	Profit on above item.	Item	1		
30	Attendance on ditto.	Item	1		
	<u>STEEL GATES</u>				
	<u>Steel gates:</u>				
31	Provide the amount of R 330 000.00 (Three Hundred and Thirty Thousand Rands) for Steel Gates.	Item			330,000 00
32	Profit on above item.	Item	1		
33	Attendance on ditto.	Item	1		
	<u>JOINERY FITTINGS</u>				
	<u>Joinery fittings:</u>				
34	Provide the amount of R 105 000.00 (One Hundred and Five Thousand Rands) for Joinery Fittings.	Item			105,000 00
35	Profit on above item.	Item	1		
36	Attendance on ditto.	Item	1		
	<u>ISOLATION CORRIDORS AND AIRLOCKS</u>				
	<u>Isolation corridor and airlocks:</u>				
37	Provide the amount of R 425 000.00 (Four Hundred and Twenty Five Thousand Rand) for Isolation Corridor and Airlocks.	Item			425,000 00
38	Profit on above item.	Item	1		
39	Attendance on ditto.	Item	1		
	<u>SIGNAGE</u>				
	<u>Signage:</u>				
40	Provide the amount of R 120 000.00 (One Hundred and Twenty Thousand Rand) for Signage.	Item			120,000 00
41	Profit on above item.	Item	1		
42	Attendance on ditto.	Item	1		
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
	<u>STEEL STAIRCASES</u>				
	<u>Steel Staircases:</u>				
43	Provide the amount of R 250 000.00 (Two Hundred and Fifty Thousand Rands) for Steel Staircases.	Item			250,000 00
44	Profit on above item.	Item	1		
45	Attendance on ditto.	Item	1		
	<u>BALUSTRADES AND HANDRAILS</u>				
	<u>Balustrades and handrails:</u>				
46	Provide the amount of R 300 000.00 (Three Hundred Thousand Rands) for Balustrades and Handrails.	Item			300,000 00
47	Profit on above item.	Item	1		
48	Attendance on ditto.	Item	1		
	<u>ALUMINIUM WINDOWS, SHOPFRONTS, CURTAIN WALLING AND DOORS</u>				
	<u>Aluminium windows, shopfronts, curtain walling and doors:</u>				
49	Provide the amount of R 1 150 000.00 (One Million and One Hundred and Fifty Thousand Rands) for Aluminium Windows, Shopfronts, Curtain Walling and Doors.	Item			1,150,000 00
50	Profit on above item.	Item	1		
51	Attendance on ditto.	Item	1		
	<u>ALUMINIUM RAINWATER GOODS</u>				
	<u>Aluminium rainwater goods:</u>				
52	Provide the amount of R 60 000.00 (Sixty Thousand Rands) for Aluminium Rainwater Goods.	Item			60,000 00
53	Profit on above item.	Item	1		
54	Attendance on ditto.	Item	1		
	<u>FIRE STOP</u>				
	<u>Fire stops:</u>				
55	Provide the amount of R 100 000.00.00 (One Hundred Thousand Rands) for Fire Stop Installation.	Item			100,000 00
56	Profit on above item.	Item	1		
57	Attendance on ditto.	Item	1		
	TOTAL CARRIED TO BILL SUMMARY			R	
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Item		Unit	Quantity	Rate	Amount
<u>AUTOMATIC FIRE SUPPRESSION</u>					
<u>Automatic fire suppression:</u>					
58	Provide the amount of R 450 000.00 (Four Hundred and Fifty Thousand Rands) for Fire Suppression Installation.	Item			450,000 00
59	Profit on above item.	Item	1		
60	Attendance on ditto.	Item	1		
<u>BULK WATER AND FIRE MAIN CONNECTION</u>					
<u>Bulk Water And Fire Main Connection:</u>					
61	Provide the sum of R200 000-00 (Two Hundred Thousand Rand) for Bulk Water And Fire Main Connection.	Item			200,000 00
62	Allow for profit.	Item	1		
63	Allow for attendance.	Item	1		
TOTAL CARRIED TO BILL SUMMARY				R	
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Provisional Sums

Item		Unit	Quantity	Rate	Amount
<p style="text-align: center;"><u>SECTION NO. 6</u> <u>PROVISIONAL AMOUNTS</u> <u>Bill No. 2</u> <u>BUDGETARY ALLOWANCES</u></p> <p><u>BUDGETARY ALLOWANCES</u> <u>The following budgetary allowances are for work to be executed by the contractor to be measured out and priced at Billed rates if constructed, or to be omitted from the Contract depending on the Employers requirements:</u></p>					
1	Provide the amount of R 1 500 000.00 (One Million Five Hundred Thousand Rands) for unmeasured items.	Item			1,500,000 00
2	Provide the amount of R 150 000.00 (One Hundred and Fifty Thousand Rands) for structural steelwork to the dock lever loading bay.	Item			150,000 00
3	Provide the amount of R 300 000.00 (Three Hundred Thousand Rands) waste storage area.	Item			300,000 00
4	Provide the amount of R 450 000.00 (Four Hundred and Fifty Thousand Rands) for gate house.	Item			450,000 00
5	Provide the amount of R 7 500.00 (Seven Thousand Five Hundred Rands) for gas store plinth.	Item			7,500 00
6	Provide the amount of R 50 000.00 (Fifty Thousand Rands) for compressor room plinths.	Item			50,000 00
7	Provide the amount of R 50 000.00 (Fifty Thousand Rands) for bulkheads.	Item			50,000 00
8	Provide the amount of R 60 000.00 (Sixty Thousand Rands) for cat ladders.	Item			60,000 00
9	Provide the amount of R 120 000.00 (One Hundred and Twenty Thousand Rands) for planters and dwarf walls.	Item			120,000 00
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Bill No. 2					
Budgetary Allowances					

Item	Unit	Quantity	Rate	Amount
<p align="center"><u>SECTION NO. 6</u></p> <p align="center"><u>PROVISIONAL AMOUNTS</u></p> <p align="center"><u>Bill No. 3</u></p> <p align="center"><u>CONTINGENCY, CPAP ETC</u></p> <p><u>MONETARY ALLOWANCES</u></p> <p>The following monetary provisions are to be omitted from the contract sum and used as directed below.</p> <p><u>Contingencies:</u></p> <p>1 Provide the sum of R 4 000 000.00 (Four Million Rand) for contingencies and design contingency, to be used as instructed by the Architect in terms of clause 17 of the Principal Building Agreement. shall be expended at the sole discretion of the Client.</p> <p><u>Statutory Increases:</u></p> <p>2 Provide the amount of R 1 800 000.00 (One Million Eight Hundred Thousand Rands) for CPAP to used in terms of clause 32.13 of the Principal Building Agreement.</p>				
	Item			4,000,000 00
	Item			1,800,000 00
TOTAL CARRIED TO SECTION SUMMARY			R	
Section No. 6				
Bill No. 3				
Contingency, Cpap Etc				

Amount

SECTION NO. 6
PROVISIONAL AMOUNTS
SECTION SUMMARY

Bill
No.

Page

- | | |
|---|-----------------------|
| 1 | PROVISIONAL SUMS |
| 2 | BUDGETARY ALLOWANCES |
| 3 | CONTINGENCY, CPAP ETC |

244
245
246

TOTAL CARRIED TO FINAL SUMMARY

R

Section No. 6

SECTION SUMMARY

Section No.	<u>FINAL SUMMARY</u>	Page	
1	PRELIMINARIES	18	
2	BUILDING WORKS	133	
3	EXTERNAL WORKS	222	
4	OCCUPATIONAL HEALTH AND SAFETY AND COVID 19	230	
5	PRESCRIBED TEMPORARY WORKS	237	
6	PROVISIONAL AMOUNTS	247	
	TOTAL BEFORE VAT		
	ADD: VALUE ADDED TAX @ 15%:		
	TOTAL CARRIED TO FORM OF OFFER AND ACCEPTANCE C2.6	R	
	FINAL SUMMARY		

C2.3 SCHEDULE FOR IMPORTED MATERIALS AND EQUIPMENT

C2.3 DPW-23 (EC): Schedule for Imported Materials and Equipment

Project title:	BUSHVELD ENERGY FACTORY IN ZONE 1A OF THE ELIDZ
Tender no:	EB/BUSH/01/19/Z1A

This schedule should be completed by the tenderer. (Attach additional pages if more space is required)

Item	Material / Equipment	Rand (R) (Excl. VAT)
1.		R
2.		R
3.		R
4.		R

The Contractor shall list imported items, materials and/or equipment which shall be excluded from the Contract Price Adjustment Provisions (if applicable) and shall be adjusted in terms of currency fluctuations only. Copies of the supplier's quotations for the items, materials or equipment (provided that such costs shall not be higher than the relevant contract rate as listed above) should be lodged with the Principal Agent / Engineer of the Department of Public Works within 60 (sixty) days from the date of acceptance of the tender. No adjustment of the local VAT amount, nor the contractor's profit, discount, mark-up, handling costs, etc. shall be allowed.

These net amounts will be adjusted as follows:

FORMULA:

The net amount to be added to or deducted from the contract sum: $A = V \times (\frac{Z}{Y} - 1)$

A = the amount (R) of adjustment

V = the net amount (supplier's quotation) (R) of the imported item

Y = exchange rate at the closing date of tender submission

Z = exchange rate on the date of payment.

SIGNED FOR THE TENDERER:	 NAME OF TENDERER
..... SIGNATURE: TENDERER NAME: CAPACITY: DATE: SIGNATURE: WITNESS 1 NAME: SIGNATURE: WITNESS 2 NAME:

**C2.4: GUARANTOR PROFORMA LETTER OF
INTENT**

C2.4: Guarantor Proforma Letter of Intent

BUSHVELD ENERGY FACTORY IN ZONE 1A OF THE ELIDZ TENDER No. EB/BUSH/01/19/Z1A

The following letter is to be reproduced on the Guarantor's company letterhead

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE SOC LTD
Lower Chester Road
EAST LONDON
5201

Date:

Attention: Ms N. Boya

Dear Madam,

**ELIDZ: BUSHVELD ENERGY FACTORY IN ZONE 1A OF THE ELIDZ - TENDER No.
EB/BUSH/01/19/Z1A**

I/we the undersigned undertake to provide an unaltered
JBCC Construction Guarantee on behalf of(the
Contractor) for the amount of R (in words) in favour
of the East London Industrial Development Zone SOC Ltd should
(the Contractor) be awarded the ELIDZ: Provision of Extensions to existing Manufacturing
Facility IN ZONE 1A OF THE ELIDZ.

Yours faithfully,

.....
Guarantor

C2.5: CONTRACT DATA CE

C2.5: Contract Data CE (Contractor)

	<p>The Conditions of Contract are clauses 1 to 42 of the JBCC series 2000 Principal Building Agreement (Edition 5 of July 2007) prepared by the Joint Building Contracts Committee.</p> <p>Copies of these conditions of contract may be obtained from the Association of South African Quantity Surveyors, Master Builders Association, South African Association of Consulting Engineers, South African Institute of Architects, Association of Construction Project Managers, Building Industries Federation South Africa, South African Property Owners Association or Specialist Engineering Contractors Committee.</p>		
	<p>Definitions</p> <p>The definitions used in this document and the interpretation thereof are as listed in the Principal Building Agreement. The word or phrase of a definition is in bold text and shall bear the meaning assigned to it in the Principal Building Agreement. Where such word or phrase is not highlighted it shall bear the meaning consistent with the context of its use. The listed defined word or phrase does not qualify as a definition where information required to be stated in the contract data has not been provided.</p>		
	<p>Provision of Contract Data</p> <p>Spaces requiring information must be filled in, shown as “not applicable” or deleted but not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the contract data.</p>		
	<p>Reference Clauses</p> <p>Where relevant the Principal Building Agreement clause applicable to the required information is printed in italics under the Contract Data clause number ie. <i>[27.4.2]</i></p>		
1.0	CONTRACTING PARTY		
1.1	Contractor:		
	Postal address:		
		Code	
	Tel :		Fax :
	Email :		
	Tax/VAT registration No :		
[1.2]	Physical address:		
	Tel :		Fax :
	Email:		

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

2.0	SECURITIES		
2.1	Security		
	The security provisions selected are:		
2.1.1 [14.3]	Variable Construction Guarantee	Yes/No	
2.1.2 [14.4]	Fixed Construction Guarantee and Payment Reduction	Yes/No	
2.1.3 [14.5]	Advanced Payment is required. Where "Yes"	(Amount)	
2.1.4	An Advance Payment Guarantee to be provided	Yes/No	
3.0	PAYMENT AND ADJUSTMENT OF PRELIMINARIES		
3.1	Payment of Preliminaries The payment of preliminaries shall be according to the option selected by the contractor. The amount included in each monthly payment certificate in respect of preliminaries as stated in the contract data shall be.		
3.1.1	Option A Assessed by the principal agent as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the contract sum excluding: <ul style="list-style-type: none"> • The amount for preliminaries • Any contingency sum • Any amount in respect of CPAP • All inclusive of tax 		
3.1.2	Option B Calculated from the priced items in the bills of quantities/lump sum document. The contractor and the principal agent shall agree on a division of the priced preliminaries items into: <ul style="list-style-type: none"> • An initial or establishment charge • A monthly charge • A final or disestablishment charge • All inclusive of tax In arriving at such a division cognizance shall be taken of such factors as: <ul style="list-style-type: none"> • Premiums for annually renewable insurance policies • Plant, scaffolding and the like remaining the property of the contractor or the hiring company and the capital costs thereof not treated as part of the initial charge • Where the initial construction period is extended the monthly charge shall be recalculated on the same basis as was originally applied but taking into account the revised construction period and the amounts already paid to the contractor • Should the contractor and the principal agent be unable to agree such division then the principal agent shall make a division of the amount of the preliminaries to be incorporated in the valuations for each monthly payment certificate. 		
3.2	Adjustment of preliminaries The amount or items of preliminaries shall be adjusted to take account of the theoretical financial effect which changes in time and/or value have on preliminaries. Such an adjustment shall be based on the particulars provided by the contractor for this purpose in terms of Option A or B and shall preclude any further adjustment of preliminaries. Adjustment of preliminaries in terms of Option A or B shall apply notwithstanding the actual employment of resources by the contractor in the execution of the works. The adjustment of preliminaries shall be based on the option as selected in		

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

	<p>the contractor's tender.</p> <p>For the adjustment of preliminaries both the contract sum and the contract value shall exclude:</p> <ul style="list-style-type: none"> • The amount of the preliminaries • Any contingency sum • Any amount in respect of CPAP • Dayworks • All inclusive of tax
3.2.1	<p>Option A</p> <p>The amount of preliminaries shall be adjusted in the following categories:</p> <ul style="list-style-type: none"> • An amount which shall not be varied • An amount which shall be varied in proportion to the contract value as compared with the contract sum • An amount which shall be varied in proportion to the construction period as compared to the initial construction period excluding revisions to the construction period for which the contractor is not entitled to adjustment of of the contract value in terms of the agreement. • The contractor shall, within fifteen (15) working days of taking possession of the site, give the principal agent a breakdown, sub-divided into the above categories, of the amount for preliminaries in tabulated form, all to the satisfaction of the principal agent. <p>Should the contractor fail to provide such information within the period stipulated then the amount for preliminaries shall be subdivided into the following proportions:</p> <ul style="list-style-type: none"> • 10% (ten percent) which amount shall not be varied • 15% (fifteen percent) which amount shall be varied in proportion to the contract value as compared to the contract sum • 75% (seventy percent) which amount shall be varied in proportion to the construction period as compared with the initial construction period <p>For a lump sum document, should the contractor fail to identify the amount for preliminaries, then such an amount shall be deemed to be 7.5% (seven and a half percent) of the contract sum excluding:</p> <ul style="list-style-type: none"> • Any contingency sum • Any amount in respect of CPAP • All inclusive of tax <p>Where sectional completion is required in terms of the agreement, the contractor shall provide the principal agent with the division of the above categorised amounts into sections. Should the contractor fail to provide such information within the period stipulated the categorised amounts shall be prorated to the value of each section</p>
3.2.2	<p>Option B</p> <p>The contractor shall, within fifteen (15) working days of taking possession of the site, give the principal agent with a detailed breakdown of the amount for preliminaries. This breakdown shall set out, among others, full particulars of administrative, supervisory and other personnel, plant, transport and other resources and charges included in the amount for preliminaries. The contractor shall show the periods to which the individual items relate with the charge rate for such items by means of a program all to the satisfaction of the principal agent.</p> <p>Where sectional completion is required in terms of the agreement, the contractor shall provide the principal agent with details of the resources required for each section and those that are common to sections. Should the contractor fail to provide such information within the period stipulated, Option A shall apply.</p>
3.2.3	<p>Payment certificate cash flow</p> <p>The contractor shall provide all reasonable assistance to the principal agent in the</p>

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

	preparation of cash flow projections of claims for payment certificates where required by the employer. The projections shall be based on the program and shall be updated as and when the program requires updating. The cooperation of the contractor in terms of this item shall not prejudice his right to receive payment in terms of the agreement		
3.2.4	The contract value shall be adjusted according to CPAP [3.1] (Yes/No)		YES
3.2.5	Payment of preliminaries [3.1.1, 3.1.2]	(A or B)	
3.2.6	Adjustment of preliminaries [3.2.1, 3.2.2]	(A or B)	
4.0	EMPLOYER CHANGES TO JBCC STANDARD DOCUMENTS		
4.1	Changes (if any) in terms of the Contract Data - Employer are accepted (Yes/No)		
	<i>Where "No" an addendum referenced to this clause is to be attached</i>		
5.0	THE TENDER		
5.1	This tender is to be submitted to the Employer at the street address provided in the invitation to tender before the tender closing date and time stipulated therein		
5.2	By the submission of this tender to the employer the tenderer offers and agrees to contract for, execute and complete the works for the tender sum as stated below		
5.3	Tenders will be opened in public directly after the stated closing time. Only the total tender sum as stated in each tender will be announced (Not Applicable)		
5.4	The lowest or any tender will not necessarily be accepted		
5.5	This tender shall remain in full legal force for 120 (One Hundred and Twenty) calendar days. the tenderer accepts liability for damages as may be suffered by the Employer should the Tender validity period not be honoured.		
5.6	This tender takes into account all listed items [4.0] for the purpose of preparing and submitting this tender.		
5.7	The successful tenderer will be appointed in terms of the JBCC Principal Building Agreement.		

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

C2.6: FORM OF OFFER AND ACCEPTANCE

C2.6: Form of Offer and Acceptance

Project title:	BUSHVELD ENERGY FACTORY IN ZONE 1A OF THE ELIDZ
Contract No:	EB/BUSH/01/19/Z1A

A. OFFER

The Employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of: **BUSHVELD ENERGY FACTORY IN ZONE 1A OF THE ELIDZ**

The Tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the Tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

Rand (in words):	
Rand in figures:	R

This offer may be accepted by the Employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the tender data, whereupon the Tenderer becomes the party named as the Contractor in the conditions of contract identified in the contract data.

THIS OFFER IS MADE BY THE FOLLOWING LEGAL ENTITY: (cross out block which is not applicable)

Company or Close Corporation:	OR	Natural Person or Partnership:
		Whose Identity Number(s) is/are:
		Whose Income Tax Reference Number is/are:

AND WHO IS (if applicable):

Trading under the name and style of:	
--------------------------------------	--

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

AND WHO IS (if applicable):

Represented herein, and who is duly authorised to do so, by:	Note: A Resolution / Power of Attorney, signed by all the Directors / Members / Partners of the Legal Entity must accompany this Offer, authorising the Representative to make this offer.
Mr/Mrs/Ms:	
In his/her capacity as:	

SIGNED FOR THE TENDERER:

Name of Representative	Signature	Date

WITNESSED BY:

Name of Witness	Signature	Date

GUARANTEE OFFERED:

Guarantees submitted must be issued by either an insurance company duly registered in terms of the Short-Term Insurance Act, 1998 (Act 35 of 1998) or by a bank duly registered in terms of the Banks Act, 1990 (Act 94 of 1990) on the Form of Guarantee included in Part C2.4. No alterations or amendments of the wording of the pro-forma will be accepted.

DOMICILIUM CITANDI ET EXECUTANDI:

The Tenderer elects as its domicilium citandi et executandi in the Republic of South Africa, where any and all legal notices may be served, as (physical address):

Domicilium Citandi Et Executandi:

Other Contact Details of the Tenderer are:

Postal address:			
Code:		Tel:	
Cell:		Fax:	
Email:			

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

B. ACCEPTANCE

By signing this part of this form of offer and acceptance, the Employer identified below accepts the Tenderer's offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the Tenderer's offer shall form an agreement between the Employer and the Tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

- 2.1 Agreement and contract data
- 2.2 Pricing data
- 2.3 Scope of work
- 2.4 Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 2.1 to 2.4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The Tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect, if delivered by hand on the day of delivery, or if delivered by courier within two working days after submission by the Employer to the courier services for a door-to-door delivery to the Tenderer, provided that the Employer notifies the Tenderer of the tracking number within 24 hours of such submission. Unless the Tenderer (now Contractor) within seven working days of the date of such submission notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

FOR THE EMPLOYER:

Name of Signatory	Signature	Date

Name of Organisation:	East London Industrial Development Zone SOC Ltd
Address of Organisation	Lower Chester Road, Sunnyridge, East London, 5201

WITNESSED BY:

Name of Witness	Signature	Date

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

SCHEDULE OF DEVIATIONS:

1. Subject:

Detail:

2. Subject:

Detail:

3. Subject:

Detail:

By the duly authorised representatives signing this agreement, the Employer and the Tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Tenderer and the Employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

C2.7: DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

Part C2.7: Declaration Certificate for Local Production and Content for Designated Sectors

C2.7: SBD 6.2 DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2011, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2011 (Regulation 9) makes provision for the promotion of local production and content.
- 1.2. Regulation 9(1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for bids referred to in paragraph 1.2 above, a two-stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = [1 - x / y] * 100$$

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.

1.6. A bid may be disqualified if –

- (a) this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation; and
- (b) the bidder fails to declare that the Local Content Declaration Templates (Annex C, D and E) have been audited and certified as correct.

2. Definitions

- 2.1. **“bid”** includes written price quotations, advertised competitive bids or proposals;
- 2.2. **“bid price”** price offered by the bidder, excluding value added tax (VAT);
- 2.3. **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- 2.4. **“designated sector”** means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;
- 2.5. **“duly sign”** means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility(close corporation, partnership or individual).
- 2.6. **“imported content”** means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad (this includes labour or intellectual property costs), plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;
- 2.7. **“local content”** means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;
- 2.8. **“stipulated minimum threshold”** means that portion of local production and content as determined by the Department of Trade and Industry; and
- 2.9. **“sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.

3. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:

<u>Description of services, works or goods</u>	<u>Stipulated minimum threshold</u>
National Treasury Designated Sectors Instruction No. 15 of 2016/2017 Stipulated Minimum Threshold of Conversion Processes for Local Production and Content for Steel Products in Components for Construction	100% as set out in Table 1A and 1B

4. Does any portion of the services, works or goods offered have any imported content?

(Tick applicable box)

YES		NO	
-----	--	----	--

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

- 4.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on www.reservebank.co.za.

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

5. Were the Local Content Declaration Templates (Annex C, D and E) audited and certified as correct?

(Tick applicable box)

YES		NO	
-----	--	----	--

- 5.1. If yes, provide the following particulars:

(a) Full name of auditor:

(b) Practice number:

(c) Telephone and cell number:

(d) Email address:

(Documentary proof regarding the declaration will, when required, be submitted to the satisfaction of the Accounting Officer / Accounting Authority)

6. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

LOCAL CONTENT DECLARATION
(REFER TO ANNEX B OF SATS 1286:2011)

LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID NO.

ISSUED BY: (Procurement Authority / Name of Institution):

.....
 NB

- 1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
- 2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on <http://www.thdti.gov.za/industrialdevelopment/ip.jsp>. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, (full names),

do hereby declare, in my capacity as

of(name of bidder entity),
 the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
 - (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
 - (ii) the declaration templates have been audited and certified to be correct.
- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above. The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

(d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

C2.8: DECLARATION FOR 30% SMME SUB- CONTRACTING AND TARGETED PERCENTAGE PER CIDB GROUP

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

C2.8: Declaration for 30% SMME Subcontracting and Targeted Percentage per CIDB Group

C2.8 DECLARATION FOR 30% SMME SUB-CONTRACTING AND TARGETED PERCENTAGE PER CIDB GROUP

TARGETED PERCENTAGES PER CIDB GROUP

CIDB Grading irrespective of trade	Max CIDB Value Range	Minimum Targeted Percentage Allocation Apportioned to the 30%	Percentage Goal Tendered	Estimated Rand Value (R) Including VAT
Grade 1-2	R1 000 000	1%	%	R
Grade 3	R 3 000 000	1%	%	R
Grade 4	R 6 000 000	3%	%	R
Grade 5	R 10 000 000	5%	%	R
Grade 6	R 20 000 000	6%	%	R
Grade 7	R 60 000 000	14%	%	R
Total % SMME Goal Tendered ⁽¹⁾		30%	%	R

Note (1): *Bidders that do not meet minimum SMME 30% subcontracting requirements will be deemed to be non-responsive and shall be disqualified.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

CONTRACTOR DECLARATION WITH REGARDS TO 30% SMME SUB-CONTRACTING:

I / We tender the following SMME participation targets of:

Tender Amount Including VAT	R
SMME Value Including VAT	R
Percentage of SMME to Tender Amount ⁽¹⁾	%

Note (1): **Bidders that do not meet minimum SMME 30% subcontracting requirements will be deemed to be non-responsive and shall be disqualified.*

SIGNED FOR THE TENDERER: NAME OF TENDERER
..... SIGNATURE: TENDERER SIGNATURE: WITNESS 1
NAME:	NAME:
CAPACITY: SIGNATURE: WITNESS 2
DATE:	NAME: