

Item	Description	Unit	Quantity	Rate	Amount
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BILL NO 1

PRELIMINARIES

Note: Tenderers are advised to study the General Preambles for Trades before pricing this Bill.

Unless otherwise stated herein, all items in this Bill shall be deemed to be a fixed price for the duration of this project.

BUILDING AGREEMENT AND PRELIMINARIES

The JBCC General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the JBCC Building Agreement shall be deemed to be incorporated in these bills of quantities, amended as hereinafter described

The contractor is deemed to have referred to the above mentioned documents for the full intent and meaning of each clause

PREAMBLES FOR TRADES

The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities

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 General Preambles/Model Preambles

The contractor's prices for all items throughout these bills of quantities shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles/ Model Preambles and in any supplementary preambles and/or specifications

STRUCTURE OF THIS PRELIMINARIES BILL

Section A : A recital of the headings of the individual clauses in the aforementioned JBCC Building Agreement

Section B : A recital of the headings of the individual clauses in the aforementioned JBCC General Preliminaries

Section C : Any special clauses to meet the particular circumstances of the project

SECTION A: PRINCIPAL BUILDING AGREEMENT

Interpretation (A1-A7)

1 Clause 1.0 - Definitions and interpretation

The following changes/additions are made to the definitions: Compensatory interest: Is hereby amended by the substitution of the words "practical completion" by the words "final completion"

The following new clauses are hereby added:

1.2.6 The contractor is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this agreement

Items left unpriced will be deemed to be covered in prices against other items throughout these bills of quantities and no claim for any extras arising out of the contractor's omission to price any item will be entertained

Prices for all construction equipment, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary

1.2.7 The items in these bills of quantities utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the contractor shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of international best practice

1.2.8 If the contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:

1. These persons are deemed to be jointly and severally liable to the employer for the performance of this agreement

2. These persons shall notify the employer of their leader who has assigned authority to bind the contractor and each of these persons

3. The contractor shall not alter its composition or legal status without the prior written consent of the employer

	Item	1
2	Clause 2.0 - Law, regulations and notices	Item 1
3	Clause 3.0 - Offer and acceptance	Item 1
4	Clause 4.0 - Cession and assignment	Item 1
5	Clause 5.0 - Documents	

Clause 5.4 is hereby deleted and replaced with the following:

The principal agent shall decide which portion of the priced document may be used as a specification of materials and goods or methods, if any

The following is added to clause 5.6: All drawings for this project will be issued electronically and the contractor shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically

6	Clause 6.0 - Employer's agents	Item 1
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Clause 7.0 - Design responsibility The following new clause is hereby added: 7.4 Notwithstanding the provisions of 7.1, the contractor shall ensure that every such nominated or selected subcontractor shall simultaneously with the signing of the relevant nominated or selected subcontract sign and deliver to the employer a Design Materials and Workmanship Warranty and Undertaking in favour of the employer or a Materials and Workmanship Undertaking strictly in accordance with the instructions or provisions contained in the tender documents for the nominated or selected subcontract works

Item 1

Insurances and securities (A8-A11)

8 Clause 8.0 - Works risk Item 1

9 Clause 9.0 - Indemnities Item 1

10 Clause 10.0 - Insurances Item 1

11 Clause 11.0 - Securities Clause 11.5 is hereby deleted and no guarantee for payment will thus be provided by the employer The following new clause is hereby added: 11.11 In the event that the value of the works (inclusive of tax but excluding adjustments in terms of contract price adjustments were to increase during the course of the contract by an amount of fifteen percent (15%) or more of the contract sum, the contractor shall, upon written request from the principal agent, immediately arrange to have the guarantee for construction (guaranteed sum) increased accordingly, the verified cost of which shall be added to the contract value

Item 1

Execution (A12 - A17)

12 Clause 12.0 - Obligations of the parties

The following is added to clause 12.2.18: The contractor shall provide, maintain and remove on practical completion air-conditioned office accommodation with suitable tables and chairs for meetings to be held on the site. Such offices shall be kept clean and fit for use at all times

The contractor shall erect in a position approved by the principal agent, maintain and remove on practical completion a notice board recommended by the South African Institute of Architects and as approved by the principal agent listing the names and logos of the employer, the contractor and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the principal agent for such notice boards to be erected

The following new clause is hereby added:

12.2.23 The contractor shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the works by the contractor. The contractor shall pay all deposits or fees in this regard

It is, however, specifically recorded that the employer shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto

13	Clause 13.0 - Setting out	Item	1
14	Clause 14.0 - Nominated subcontractors	Item	1
15	Clause 15.0 - Selected subcontractors	Item	1
16	Clause 16.0 - Direct contractors		

Details of direct contractors: - ICT equipment The following new clauses are hereby added:

16.1.4. Designate an area for the direct contractor to establish a temporary office and workshop and storage of equipment and materials

16.1.5. Allow the use of personnel welfare facilities, where provided

16.1.6 Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation

17 16.1.7 Permit the direct contractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right, while it remains erected on the site Item 1

18 Clause 17.0 - Contract instructions The following new clause is hereby added: 17.6 Instructions issued on site are to be recorded in a site instruction book which is to be supplied and maintained on site by the contractor Item 1

Completion (A18 - A24)

19 Clause 18.0 - Interim completion N/A

20 Clause 19.0 - Practical completion Item 1

21 Clause 20.0 - Completion in sections Refer to scope of works and contract data for details of sections Item 1

22 Clause 21.0 - Defects liability period and final completion Item 1

23 Clause 22.0 - Latent defects liability period Item 1

24 Clause 23.0 - Revision of the date for practical completion
The following new clause is hereby added before clause 23.1: 23.A The removal or substitution of any materials and goods which do not conform to the specification or the contract drawings shall not constitute grounds for the extension of the construction period nor for the adjustment of the contract value [17.1.8] Item 1

25 Clause 24.0 - Penalty for late or non-completion Item 1

Payment (A25 - A27)

26 Clause 25.0 - Payment

Clause 25.10 is hereby amended by the substitution of the words "fourteen (14) calendar days" in the first line by the words "thirty (30) calendar days"

The following new clause is hereby added: 25.18 Where prices are submitted by the contractor or subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of this agreement 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 certificate of final completion, it shall be in writing

Item 1

- 27 Clause 26.0 - Adjustment of the contract value and final account

Clause 26.9.5 is hereby deleted and replaced with the following: All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the contractor

The following new clauses are hereby added: 26.14 There is a possibility that phase 3 of the works may be omitted from the scope of works, subject to available funding

The employer reserves the right to omit such work without compensation to the contractor for loss of profit or any other loss which the contractor may suffer as a result of such omission

26.15 All costs incurred by the contractor in the preparation of claims shall be borne by the contractor. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this agreement [30.6 & 7] from making a determination on costs

26.16 The contractor shall review, assess and adjudicate any claims received by him from any subcontractor and thereafter submit same to the principal agent with a recommendation in order to assist the principal agent in adjudicating the claim

Item 1

- 28 Clause 27.0 - Recovery of expense and/or loss Item 1

Suspension and termination (A28 - A29)

- 29 Clause 28.0 - Suspension by the contractor Item 1

- 30 Clause 29.0 - Termination Item 1

Dispute resolution (A30)

31	Clause 30.0 - Dispute resolution	Item	1
32	Agreement		
	The required information of the parties and the amount of the contract sum shall be inserted in the agreement for signature of the agreement by the parties	Item	1

33 Contract data

Before submission of his tender the contractor is to complete the tenderer's selections in the contract data

SECTION B: GENERAL PRELIMINARIES

Definitions and interpretation (B1)

34	Clause 1.1 - Definitions	Item	1
35	Clause 1.2 - Interpretation	Item	1

Documents (B2)

36	Clause 2.1 - Checking of documents	Item	1
37	Clause 2.2 - Provisional bills of quantities	Item	1
38	Clause 2.3 - Availability of construction information	Item	1
39	Clause 2.4 - Ordering of materials and goods	Item	1

Previous work and adjoining properties (B3)

40	Clause 3.1 - Previous work - dimensional accuracy	Item	1
41	Clause 3.2 - Previous work - defects	Item	1
42	Clause 3.3 - Inspection of adjoining properties	Item	1

The site (B4)

43	Clause 4.1 - Handover of site in stages	Item	1
44	Clause 4.2 - Enclosure of the works		

Clause 4.2 is hereby deleted and replaced with the following:

The contractor shall enclose the site along the street frontages over a total length of 400m by means of a new galvanised ribbed sheet hoarding, having rib of sheeting horizontal, and 2,0m high with matching gates. Hoardings shall be maintained, repainted periodically, kept clean and free from unauthorised posters, graffiti, etc and finally removed, including making good

45	Clause 4.3 - Geotechnical and other investigations	Item	1
46	Clause 4.4 - Encroachments	Item	1
47	Clause 4.5 - Existing premises occupied	Item	1
48	Clause 4.6 - Services - known	Item	1

Management of contract (B5)

49	Clause 5.1 - Management of the works	Item	1
50	Clause 5.2 - Progress meetings	Item	1
51	Clause 5.3 - Technical meetings	Item	1

Samples, shop drawings and manufacturer's instructions (B6)

52	Clause 6.1 - Samples of materials		
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The following is added to clause 6.1:

The principal agent may reject any materials or colours not corresponding with the approved samples. The approved samples shall be kept on site until completion of the works. Should any materials or items specified prove to be either unavailable, in poor supply or likely to cause delay to the works, the contractor shall notify the principal agent in sufficient time for suitable alternatives to be considered. Any claims for delays resulting from the contractor not conforming with the terms of this clause will not be entertained or allowed

53	Clause 6.2 - Workmanship samples	Item	1
54	Clause 6.3 - Shop drawings	Item	1
55	Clause 6.4 - Compliance with manufacturer's instructions	Item	1

Deposits and fees (B7)

56	Clause 7.1 - Deposits and fees	Item	1
	Temporary services (B8)		
57	Clause 8.1 - Water	Item	1
58	Clause 8.2 - Electricity	Item	1
59	Clause 8.3 - Ablution and welfare facilities	Item	1
60	Clause 8.4 - Communication facilities	Item	1
	Prime cost amounts (B9)		
61	Clause 9.1 - Responsibility for prime cost amounts	Item	1
	Attendance on subcontractors (B10)		
62	Clause 10.1 - General attendance	Item	1
63	Clause 10.2 - Special attendance	Item	1
	General (B11)		
64	Clause 11.1 - Protection of the works	Item	1
65	Clause 11.2 - Protection/isolation of existing works and works occupied in sections	Item	1
66	Clause 11.3 - Security of the works	Item	1
67	Add the following to clause 11.3 The contractor shall provide and maintain twenty-four hour site security and loss control systems all to the satisfaction of the principal agent. It is envisaged that these procedures will incorporate, inter alia, gate control for personnel and vehicles, individual entry permits, regular security patrols and the like	Item	1
68	Clause 11.4 - Notice before covering work	Item	1
69	Clause 11.5 - Disturbance	Item	1

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Add the following to clause 11.5: All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as the exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the construction period or contract value whatsoever

Item 1

71 Clause 11.6 - Environmental disturbance

Add the following to clause 11.6: The contractor shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the site during the construction period due inter alia to noise, artificial light, wind-blown sand, dust, deposits of mud, etc

The contractor is to ensure that all roads which border the site and are used by the contractor during the execution of the works are kept clean and free of any dirt or debris caused by the execution of the works

The employer has prepared an environmental management plan (EMP) (refer to Annexures for the SHEQ spec). The contractor shall price opposite this item for compliance with all the requirements of such EMP/ SHEQ

Item 1

72 Clause 11.7 - Works cleaning and clearing

Item 1

73 Clause 11.8 - Vermin

Item 1

74 Clause 11.9 - Overhand work

Item 1

75 Clause 11.10 - Tenant installations

Item 1

76 Clause 11.11 - Advertising

Item 1

SECTION C: SPECIFIC PRELIMINARIES

Warranties for materials and workmanship

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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 executing the work and shall deliver same to the principal agent on final completion of the contract

The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of practical 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

Item 1

Overtime

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Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the employer

Item 1

Cooperation of the contractor for cost management

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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 contract value does not exceed the budget

Item 1

Overloading

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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

Item 1

81 As-built drawings
 THE POSITION OF CONSTRUCTION BREAKS AND THE EXTENT 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 Item 1

82 Contract instructions
 Contract instructions issued on site are to be recorded in triplicate in an instruction book which is to be maintained on site by the contractor Item 1

83 Control of sand, dust, mud, light and noise pollution on site, public spaces, public road, etc
 Notwithstanding any further requirements stated elsewhere, the contractor shall be responsible for and take all precautions in controlling all forms of pollution during the construction period due to noise, artificial light, wind-blown sand, dust, deposits of mud etc by whatever means necessary All work shall be executed without unacceptable and unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the construction period or contract value whatsoever The contractor indemnifies the employer against and accepts entire responsibility for any claims, costs, damages and all other loss of whatsoever nature or delays which may arise on the above grounds

The contractor shall take every precaution to protect buildings, etc on adjoining sites against damage and shall be held solely responsible for any damage to persons or property caused by inadequate precautions All existing access roads to and from the site shall be cleaned on a daily basis No claims for clearing or carting away any rubbish or superfluous materials, including that of any subcontractor shall be accepted Should the contractor fail to carry out any or all clearing and cleaning, the principal agent will arrange for such clearing and cleaning to be carried out by others and shall recover the cost from the contractor Item 1

84 Copyright
 specifications, models and documents of any nature delivered to the contractor or produced by or on behalf of the contractor in connection with the works; and, the artistic character and/or artistic design of the works, shall remain vested in and/or is hereby assigned to the employer by the Item 1

85 Confidentiality
 As the project is of a highly confidential nature, the contractor shall treat all drawings, specifications, models and documents of any nature delivered to the contractor or produced by or on behalf of the contractor in connection with the works as being confidential; keep secret and not directly or indirectly disclose or divulge to any person (except insofar as may be necessary in connection with the project) any information contained in the contract documents without the previous written consent of the principal agent; not copy, photograph and/or repeat either wholly or in part any of the contract documents referred to above (except insofar as may be necessary in connection with the project); return to the principal agent all contract documents. Item 0

Health and safety

Without limiting the generality of the provisions of clause 2.0, the contractor's attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the employer shall prepare a documented health and safety specification for the works (refer to Annexures for a copy of the relevant SHEQ specification) 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 for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification

86 specification for the works 2. Prepare and agree with the health and safety consultant the health and safety plan for the works 3. Cooperate with the health and safety consultant in all respects 4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification 5. Conform to the conditions contained in the employer's health and safety specification. Item 1

Advertising rights

87 agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The contractor shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the principal agent so as not to hinder the contractor in meeting his obligations. Item 1

Confidentiality

88 and all information regarding this project and shall obtain appropriate similar undertakings from all subcontractors and suppliers. Such information shall not be used in any way except in connection with the execution of the works No information regarding this project shall be published or disclosed without the prior written consent of the employer Item 1

Media releases

89 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 connected with this project to be printed, screened or aired by the media Item 1

SUMMARY OF CATEGORIES

Category : Fixed R..... Category : Value
 R..... Category : Time
 R.....

Total Carried to Summary R

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BILL NO 1					
ALTERATIONS					
Note to Tenderer					
The Tenderer is referred to the relevant clauses in the Model Preambles for Trades (1999 Edition)					
SUPPLEMENTARY PREAMBLES					
Proprietary items or materials: Quality and performance of proprietary items or materials to be equal to specification - or other equal approved					
REMOVAL OF EXISTING WORK					
Breaking up and removing reinforced concrete including cutting off and removing reinforcement and cart away to a dumpsite located by the contractor					
1	200mm Thick slabs and cart away including levelling and scarifying area	m2	447		
2	150mm Thick slabs and cart away	m2	10		
3	Pavers and any concrete bedding and cart away to a dump site located by the contractor including scarifying and levelling area	m2	241		
Taking out and removing piping, sanitary fittings, etc including disconnecting piping from fittings and making good floor and wall finishes (making good tiling and paintwork elsewhere measured)					
4	Vaal Sanitaryware vitreous china WC's including stopcock and cistern and closing off and making safe water supply and cart away to dump site as located by the contractor	No	4		
5	Double WHB vanity fixed to wall and floor and cart away to dump site as located by the contractor	No	2		
6	Vaal Sanitaryware vitreous china WHB and brackets fixed to wall including the closing off and making safe hot and cold water supply to 2 no. WHB taps and cart away to dump site as located by the contractor	No	3		
7	Wall mounted urinal	No	2		
8	Single bowl sink	No	1		
9	Double bowl sink	No	1		
10	Cut through plastered finish take off and remove existing galvanised or copper piping not exceeding 50mm diameter, including fittings, and brackets from roof spaces and plastered walls etc. cut back and seal off piping into walls and repair finished faces	m	81		
BUILDING UP OPENINGS					

Brickwork in NFP bricks in class II mortar in building up openings

11 Building up openings in half brick walls	m2	3
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270mm Hollow walls of two half brick skins including wire ties and 230mm wide galvanised brick

12 reinforcement laid horizontally	m2	3
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MAKING GOOD BRICKWORK ETC.

13 Face of 230mm walls where pipework was removed	m	38
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TOTAL ALTERATIONS	R
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BILL NO 2

EARTHWORKS

Note to Tenderer

The Tenderer is referred to the relevant clauses in the Model Preambles for Trades (1999 Edition)

Excavations:

No claim for rock excavation will be entertained unless the Contractor has timeously notified the project manager prior to backfilling.

Nature of material to be excavated

The material to be excavated is assumed to be predominantly of a composition that will allow "soft excavation" as specified, but including a percentage of "intermediate excavation" and "hard rock excavation"

Carting away of excavated material

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations, or alternatively, from stock piles situated on the building site

Site clearance

Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc

1	m2	27
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EXCAVATIONS

Excavation in earth not exceeding 2m deep

2 Trenches	m3	97
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Excavation in earth in reduction of levels

3 Reduced levels under floors	m3	34
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Extra over trench and hole excavations in earth for excavation in		
4 Soft rock	m3	12
5 Hard rock	m3	6
Extra over all excavations for carting away		
Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor		
6	m3	40
Risk of collapse of excavations		
Sides of trench and hole excavations not exceeding 1,5m deep		
7	m2	90
Keeping excavations free of water		
Keeping excavations free of water other than subterranean water		
8	Item	1.00
FILLING ETC		
Earth filling supplied by the contractor, compacted to 98% Mod AASHTO density		
9	m3	10
Earth filling supplied by the contractor, compacted to 95% Mod AASHTO density		
10	m3	10
Earth filling supplied by the contractor, compacted to 93% Mod AASHTO density		
11	m3	10
12	m3	30
Compaction of surfaces		
Compaction of ground surface under floors etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density		
13	m2	70
SOIL POISONING		
Soil insecticide		
Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming		
14	m2	70
15	m2	80

TOTAL EARTHWORKS R

BILL NO 3

PLUMBING AND DRAINAGE

Note to Tenderer

The Tenderer is referred to the relevant clauses in the Model Preambles for Trades (1999 Edition)

SUPPLEMENTARY PREAMBLES

Proprietary items or materials:

Quality and performance of proprietary items or materials to be equal to specification - or other equal approved

National treasury designated sectors instruction number 15 of 2016/2017:

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

uPVC pressure pipes and fittings:

Pipes for water supply shall be of the class stated. 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.

Copper pipes:

Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be 'Cobra Watertech' type. Capillary solder fittings shall Fixing of pipes

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.

Flush pans:

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

Descriptions of WC pans 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.

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

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

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

Laying, backfilling, bedding, etc of pipes:

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

Waste unions:

Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

Testing:

Prices for filling are to include for all necessary density and other tests as required by SANS 1200.

RAINWATER DISPOSAL

Saint-Gobain Fullbore cast iron outlets:

1 100mm Vertical outlet with dome grating.	No	15,00
2 100mm 45 Degree outlet with dome grating.	No	15,00

Zincalume (Aluminium) rol-formed seamless gutter including matching rivet-fixed miters and stop end caps internally sealed using Silicon Mastic (or similar approved silicone sealer). Gutter secured to fascia with hung aluminium hangers at max 600mm centers using yellow passivated serrated nails. Colour: Neutral

150mm x 100mm x 115mm High x 0.5mm thick 355 pre-coated gutters in continuous lengths, including brackets 3 at 1000mm centres	m	50
4 Extra over gutter for stopped end	No	9
5 Extra over gutter for angles	No	4
6 Extra over gutters for 75mm diameter outlet	No	16
7 Extra over gutters for offsets	No	16

100mm x 70mm x 0.5mm Thick rectangular rainwater pipes in continuous lengths downpipes fixed to wall with straps at maximum 1500mm centres using nail-in anchor fixings, with and including downpipes riveted and silicone sealed to gutter outlets, including all necessary 8 bends, elbows, shoes etc.	m	34
9 Extra over downpipes for shoes	No	16

SOIL DRAINAGE

Excavation in earth not exceeding 2m deep

10 Excavation not exceeding 2m deep for drain trenches	m3	50
Extra over trench and hole excavations in earth for excavation in		
11 Soft rock	m3	7
12 Hard rock	m3	4

Extra over all excavations for carting away

Surplus material from excavations and/or stock piles on 13 site to a dumping site to be located by the contractor	m3	38
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Risk of collapse of excavations

Sides of trench and hole excavations not exceeding 1,5m 14 deep	m2	76
Keeping excavations free of water		
Keeping excavations free of water other than 15 subterranean water	Item	1
Earth filling obtained from excavation, compacted to 90% Mod AASHTO density		
Backfilling to drain trenches compacted to 90% Mod 16 AASHTO density	m3	37
Selected granular material supplied by the contractor, compactd to 90% Mod AASHTO density		
Backfilling to drain trenches compacted to 90% Mod 17 AASHTO density	m3	40
uPVC pipes		
18 110mm Diameter pipes	m	21
19 160mm Pipes laid in trenches (trenches e.m)	m	80
Extra over uPVC pipes for fittings		
20 160mm x 110mm Reducing T-junction	No	8
21 160mm Diameter 45 degree channels	No	5
STORMWATER DRAINAGE		
Class 100D concrete pipes		
22 450mm Pipes laid in trenches (trenches e.m)	m	37
Sundries		
Cutting into side of existing inspection chamber for and connecting stormwater pipe, including inserting channel 23 junction and making good concrete benching, etc	No	4
Precast concrete circular inspection chambers (covers elsewhere)		
Inspection chamber 1000mm diameter and exceeding 24 750mm and not exceeding 1000mm deep internally	No	5
Covers etc		
Gratings, covers, etc		
1000mm Diameter 150mm thick precast concrete 25 removable cover	No	5
600mm x 600mm Polymer concrete manhole covers coated with and including solvent-free amine-cured 26 epoxy	No	2
27 Lifting key for manhole cover	No	5
The following in inspection chambers		

Excavation in earth not exceeding 2m deep		
28 Holes	m3	5
Extra over trench and hole excavations in earth for excavation in		
29 Soft rock	m3	0,5
30 Hard rock	m3	0,3
Extra over all excavations for carting away		
Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor		
31	m3	5
Risk of collapse of excavations		
Sides of trench and hole excavations not exceeding 1,5m deep		
32	m2	6
Keeping excavations free of water		
Keeping excavations free of water other than subterranean water		
33	Item	1
Compaction of surfaces		
Compaction of ground surface under floors etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density		
34	m2	5
Unreinforced concrete cast against excavated surfaces		
35	m3	5
Finishing top surfaces of concrete smooth with a broom finish		
36	m2	5
Brickwork of NFX bricks (14 MPa nominal compressive strength) in class 1 mortar		
37	m2	6
Gratings, covers, etc		
1310mm x 1008mm Type C cast iron dished grating and frame		
38	No	2
SANITARY FITTINGS		
Vaal		
Vaal Amber' white washhand basin colour white with one taphole integrated overflow and chainstay hole, mounted to wall on and including two bolts		
39	No	5

40	Vaal Amber' white washhand basin colour white with one taphole integrated overflow and chainstay hole, mounted to wall on and including two bolts fixed to dry wall partitioning including all necessary additional framing, support plates etc.	No	5
41	mounted paraplegic washdown suite colour White (Code: 750246) comprising 90° outlet pan (Code: 750200) and matching 9 litre cistern, including lid, fittings and purpose-made chromium plated side flush lever BEMIS 7500 economy double flap thermostet seat.	No	1
42	600mm x 385mm x 380mm White vitreous china wall mounted back inlet urinal, including 38mm chromium plated domical grating and chromium plated back inlet spreader, flush valve, flush pipe and fittings, fixed on and including two hanger brackets supplied and installed as per manufacturer's specification	No	5
43	Walrco CIRS HEXS overhead shower with resisitant sleeve, shower walls finshed with Duraflex, ABE product or similar approved with push button metering non hold open valve as prison type Walrco 150 with extension ring or similar approved concrete screeds laid to fall towards outlet as indicated and finished with "Duraflex-ABE product	No	2
44	Franke Quinline' stainless steel domestic inset sinks: Franke Quinline Single end bowl inset sink and drainer unit, size 900 x 500mm overall with one bowls 410 x 343 x 167mm, including one 90mm basket waste outlet	No	2
45	Franke Quinline' QLX621-120 double end bowl inset sink and drainer unit, size 1200 x 500mm overall with two bowls 410 x 343 x 167mm, including two 90mm basket waste outlets, built into worktop.	No	2
46	Franke 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.	No	2
WASTE UNIONS ETC			
Cobra Watertech' waste unions etc:			
47	Cobra 301' 32mm Chromium plated brass slotted basin waste outlet with plug, chain and chain stay.	No	3
48	Cobra 38mm Chromium plated brass unslotted sink waste outlet with plug, chain and chain stay.	No	2
49	38mm Chromium plated urinal waste outlet.	No	2
TRAPS ETC			
Marley or equally approved			
50	40mm x 300mm Sink combination for double bowl with deepseal "P" trap	No	2
51	110mm PVC P trap.	No	2
Chromium plated			
52	Cobra watertech 32mm chrome plated deep seal bottle trap with outlet for 40mm PVC (Code: 345/40)	No	6

53	15mm x 380mm Projection chrome plated overhead shower arm with wall flange 150x140mm deep	No	2
54	15mm x 125mm Diameter chrome plated full flow shower head including male inlets	No	2
TAPS, VALVES, ETC			
Cobra or equally approved			
55	15mm Chrome plated sink mixer with aerated swivel spout and 400mm long flexible inlets, manufactured in accordance with SANS 226:2009	No	2
56	Single lever 15mm chrome undertile shower mixer with stepped blanking plug (Code: SE-956)	No	2
57	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.	No	15
	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		
	Cobra 111-15 Star' 15mm Chrome plated basin pillar tap.	No	2
58	15mm x 15mm chrome angle regulating valve, including braided flexi connectors	No	2
59	Single lever 15mm chrome single taphole basin mixer with pop-up waste, mounting kit and flexible connection tubes (code: SE-950), manufactured in accordance with SANS 1480:2005 (BS EN 1286).	No	2
Brass			
60	15mm Standard brass plain bib tap (rough brass) with male inlet and flow straighter manufactured in accordance with SANS 226:2004 Type 2 (BS 1010) supplied and installed complete strictly to manufacturer's specifications	No	1
SANITARY PLUMBING			
uPVC pipes:			
61	40mm Pipes.	m	48,00
62	50mm Pipes.	m	61,00
63	110mm Pipes.	m	57,00
64	40mm Pipes chased into brick walls.	m	36,00
65	50mm Pipes chased into brick walls.	m	59,00
66	Extra over uPVC pipes for fittings:		

67 50mm Straight reducer.	No	11,00
68 40mm Bend.	No	36,00
69 50mm Bend.	No	40,00
70 110mm Bend.	No	42,00
71 40mm Access bend.	No	25,00
72 50mm Access bend.	No	30,00
73 110mm Access bend.	No	30,00
74 40mm Junction.	No	22,00
75 50mm Junction.	No	20,00
76 110mm Junction.	No	40,00
77 40mm Access junction.	No	10,00
78 50mm Access junction.	No	10,00
79 110mm Access junction.	No	10,00
80 110mm Double junction.	No	5,00
81 110mm Access bend with anti-syphon horn.	No	5,00
82 50 x 40mm Access reducing junction.	No	10,00
83 110 x 50mm Access reducing junction.	No	10,00
84 110mm Straight pan connector.	No	12,00
85 50mm Air release vent valve.	No	5,00
86 110mm Air release vent valve.	No	5,00
uPVC Class 34 pipes:		
87 50mm Pipes laid in trenches not exceeding 1m deep.	m	10,00
88 110mm Pipes suspended below concrete soffits not exceeding 1m deep.	m	10,00
Vulcathene' pipes:		
89 38mm Pipes.	m	15,00
90 51mm Pipes.	m	5,00
91 38mm Pipes chased into brick walls.	m	10,00
92 51mm Pipes chased into brick walls.	m	5,00
93 38mm Pipes laid in and including trenches not exceeding 1m deep under surface beds.	m	5,00
94 51mm Pipes laid in and including trenches not exceeding 1m deep under surface beds.	m	35,00
95 51mm Pipes laid in and including trenches not exceeding 1m deep.	m	20,00

Extra over 'Vulcathene' pipes for fittings:

96 51mm End cap.	No	7,00
97 51mm Reducer.	No	9,00
98 38mm Bend.	No	13,00
99 51mm Bend.	No	8,00
100 38mm equal sweep tee.	No	8,00
101 51mm equal sweep tee.	No	8,00

Sundries:

102 Testing waste pipe system.	Item	1,00
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WATER SUPPLIES

103 Class 2 copper pipes

104 15mm Pipes.	m	60,00
105 22mm Pipes.	m	50,00
106 28mm Pipes.	m	30,00
107 35mm Pipes.	m	20,00
108 54mm Pipes.	m	20,00
109 63mm Pipes.	m	30,00
110 15mm Pipes chased into brick walls.	m	20,00
111 22mm Pipes chased into brick walls.	m	15,00

Extra over class II copper pipes for capillary fittings:

112 15mm Fittings.	No	30,00
113 22mm Fittings.	No	20,00
114 28mm Fittings.	No	20,00
115 35mm Elbow.	No	15,00
116 35mm Tee.	No	14,00
117 35mm Reducer.	No	13,00
118 54mm Elbow.	No	10,00
119 63mm Elbow.	No	14,00
120 54mm Tee.	No	15,00
121 63mm Tee.	No	12,00
122 54mm Reducer.	No	13,00
123 63mm Reducer.	No	13,00

Extra over class II copper pipes for brass compression fittings:

125 15mm Fittings.	No	10,00
126 22mm Fittings.	No	11,00
127 28mm Fittings.	No	14,00
130 35mm Elbow.	No	10,00
131 35mm Tee.	No	11,00
132 35mm Reducer.	No	14,00
133 54mm Elbow.	No	12,00
134 63mm Elbow.	No	13,00
135 54mm Tee.	No	12,00
136 63mm Tee.	No	11,00
137 54mm Reducer.	No	14,00
138 63mm Reducer.	No	16,00

Copper overflow and service pipes:

139 15mm Braided flexible connector 350mm girth.	No	20,00
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ELECTRIC WATER HEATERS

Kwikot' standard geysers (SABS 151:1992):

200 Litre 'Kwikhot Standard 600 Dual' horizontally wall mounted electric water heater with 22mm fittings complete with mounting brackets, draincock, two vacuum breakers and 22mm 600kPa 'Kwikhot Multi control and expansion relief valve, etc complete

140 installation.	No	2,00
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Black polyethylene geyser trays (SABS 1848:2000):

141 Polyethylene geyser drip tray size 1600 x 600mm with union and backnut.	No	2,00
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142 50mm uPVC black polythene overflow pipe fixed to steel roof member at 1500mm centres.	m	14,00
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143 Extra over 50mm uPVC black polythene overflow pipe for bend.	m	10,00
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TESTING

Testing:

144 Testing water pipe system.	Item	1,00
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WATER SUPPLIES IN GROUND

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:		
145	50mm Pipes laid in trenches and including trenches not exceeding 1m deep.	m 35,00
Extra over Class 9 uPVC pressure pipes with 'Lyng' mechanical joints for UPVC pressure fittings with 'Lyng' couplers:		
146	50mm 90 Degree bends.	No 7,00
147	50mm Adaptor coupling (uPVC to GMS)	No 2,00
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:		
148	110mm Pipes laid in trenches and including trenches not exceeding 1m deep.	m 35,00
Extra over Class 12 uPVC pressure pipes with 'Lyng' mechanical joints for UPVC pressure fittings with 'Lyng' couplers:		
149	75 x 50mm Reducer.	No 10,00
150	110 x 75mm Reducer.	No 12,00
151	110mm 90 degree bend.	No 14,00
152	110mm Tee.	No 12,00
153	110mm Cast iron flanged adaptor.	No 14,00
154	110mm x 50mm Saddle with threaded outlet including nuts and bolts and drilling boss and pipe.	No 10,00
Valves, water meters and pipe fittings etc installed complete		
155	80mm Galvanised steel pipe 535mm long with flanges both ends.	No 5,00
156	110 x 80mm Cast iron flanged reducer.	No 5,00
157	110mm Cast iron flanged adaptor.	No 8,00
158	110mm Flanged resilient seal gate valve with cap top.	No 5,00
159	110mm Non return valve including couplings to uPVC pipe.	No 5,00
Sundries:		
160	20mm 'Cobra 108-15 3/4 rough brass hose bibtap.	No 5,00
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:		

80mm Galvanised steel pipe 535mm long with flanges 161 both ends.	No	3,00	
162 110 x 80mm Galvanised flanged reducer.	No	3,00	
163 110mm Cast iron flanged adaptor.	No	3,00	
164 110mm Flanged resilient seal gate valve with cap top.	No	4,00	
110mm Non return valve including couplings to uPVC 165 pipe.	No	2,00	
Locate, cut into and temporarily stop off 200mm diameter water pipe, insert reducing tee and joint to 166 new 110mm uPVC pipe.	No	1,00	
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	2,00	
167	No	2,00	
Testing: 168 Testing water pipe system.	Item	1,00	
Heat Pumps			
3,0 kw Domestic heat pump with safety combination valve, combination draincock, Y-strainer and lever shut off valves installed on hot and cold water supply, the installation including control panel, all connected to single-phase electrical power supply with isolator 1000 mm away from connection on heat pump, all supplied and installed complete strictly in accordance with 169 manufacturer's recommendations	No	1	Rate Only
FIRE APPLIANCES ETC			
Tempest or equally approved			
Tempest fire red fire hose reel comprising of a 580mm diameter total of 22kg hose reel with 750mm valve with 260mm wall projection fitted with 20mm diameter, 3000mm long red PVC hose complying to SABS 1086, manufactured in accordance with SANS 1086:2007, including valve/stop cock with a flow of 30litres per minute at standard pressure of 300kPa, with the hose reel fitted in 800mm x 800mm x 300mm deep for 14kg steel hose cabinet bolted to wall, installed in accordance with manufacturer's recommendations. All fire-fighting equipment to have the SABS 1475- Diamond Mark of approval supplied and installed as per 170 manufacturer's specification	No	5	

TOTAL PLUMBING AND DRAINAGE R

FINAL SUMMARY

Item

AMOUNT

1 PRELIMINARIES AND GENERAL

R

2 ALTERATIONS

R

3 EARTHWORKS

R

4 PLUMBING AND DRAINAGE

R

SUB - TOTAL: CONSTRUCTION COST

R

Add : Value Added Tax at 15%

15%

TOTAL TO FORM OF OFFER

R