ITEM NO		QUANTITY	RATE	AMOUNT
	Bills of Quantities for ERADICATION OF PIT LATRINES IN KWAZULU-NATAL PROVINCE FOR THE INDEPENDENT DEVELOPMENT TRUST MADILIKA COMBINE SCHOOL			
	SECTION NO. 1			
	BILL NO.1			
	PRELIMINARIES AND GENERAL			
	BUILDING AGREEMENT AND PRELIMINARIES			
	The JBCC principal BUilding Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described			
	The JBCC Principal Building Agreement Contract Data form an integral part of this agreement			
	The ASAQS Preliminaries (November 2007 edition) published by the Association of South African Quantity Surveyors for use with the said JBCC Principal Building Agreement shall be deemed to be incorporated in these bills of quantities			
	The JBCC General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the JBCC Principal Building Agreement (Edition 6.2) shall be deemed to be incorporated in project specific preliminaries, amended as hereinafter described			
	The Preliminaries for use with the JBCC Series 2000 Principal Building Agreement (July 2007 edition) prepared by the Joint Building Contracts Committee, shall be deemed to be incorporated in these bills of quantities			
	The contractor is deemed to have referred to the above mentioned documents for the full intent and meaning of each clause			
	The relevant clauses in the above mentioned documents are hereinafter referred to by clause number and heading only			
	Where standard clauses or alternatives are not entirely applicable to this agreement such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the above mentioned documents			
	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 and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained			
	Supplementary preambles and/or specifications are incorporated in this Project specific preliminaries to satisfy the requirements of this project. Such supplementary preambles shall take precedence over the provisions of the General Preambles			

	The contractor's prices for all items throughout these bills of quantities must take account of and include for all of the obligations, requirements and specifications given in the said Model Preambles and in any supplementary preambles				
	PRICING OF PRELIMINARIES				
	Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable")				
	If Alternative A as set out in clause C 4.0 hereinafter is to be used for the adjustment of the preliminaries each item price is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time.				
	Should the contractor select Option A in terms of Contract Data - Contractor to Employer (CE) for the purpose of adjustment of these preliminaries, the amount entered into the amount column in these preliminaries is to be divided into one or more of the three categories provided namely Fixed (F), Value Related (V) and Time Related (T)				
	Should Option A, as set out in clause B10.3.1 hereinafter be used for the adjustment of preliminaries then each item priced is to be allocated to one or more of the three categories Fixed, Value Related or Time Related and the respective amounts entered in the spaces provided under each item				
	Items not priced in these Preliminaries shall be deemed to be included elsewhere in these Bills of Quantities				
	SECTION A - PRINCIPAL BUILDING AGREEMENT				
	Interpretation				
1	Clause 1.0 - Definitions and interpretationF:..... V:..... T:.....	Item	1		0,00
2	Clause 2.0 - Law, regulations and notices F:..... V:.....T:.....	Item	0		0,00
3	Clause 3.0 - Offer and acceptance F:..... V:..... T:.....	Item	0		0,00
4	Clause 4.0 - Cession and assignment F:..... V:..... T:.....	Item	0		0,00
5	Clause 5.0 - Documents F:..... V:..... T:.....	Item	0		0,00
6	Clause 6.0 - Employer's agents F:..... V:..... T:.....	Item	0		0,00

	The principal agent shall:-monitor and control progress and scheduling-monitor all contract conditions, and-coordinate the efforts of the employer's agents, the contractor and subcontractorsThe powers conferred on the principal agent in terms of this clause and/or the exercising of these powers shall not be construed as removing or diminishing any of the obligations of the Contractor in terms of the Principal Building Agreement, whether financial, contractual or otherwise, nor shall the exercising of these powers create any privity of contract as between the Employer or his agents on the one part and the Contractor or subcontractors or suppliers on the other part The principal agent reserves the right to attend and participate in all contractor/subcontractor's meetings, to invite other employer's agents to attend such meetings at his discretion and to converse and chair any such meetings if the contractor is derelict in his duty in arranging such meetings to the degree of frequency and comprehensiveness dictated in the opinion of the project manager by the circumstances and exigencies of the construction process				
7	Clause 7.0 - Design responsibility F:..... V:..... T:.....	Item	0		0,00
	Insurances and Securities				
8	Clause 8.0 - Works riskF:..... V:..... T:.....	Item	0		0,00
9	Clause 9.0 - Indemnities F:..... V:..... T:.....	Item	0		0,00
10	Clause 10.0 - Insurances F:..... V:.....T:.....	Item	0		0,00
11	Clause 11.0 - Securities F:..... V:..... T:.....	Item	0		0,00
	Execution				
12	Clause 12.0 - Obligations of the parties F:..... V:..... T:.....	Item	0		0,00
13	Clause 13.0 - Setting out 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. F: ..... V:.....T:.....	Item	0		0,00
14	Clause 14.0 - Nominated subcontractors F:..... V:..... T:.....	Item	0		0,00
15	Clause 15.0 - Selected subcontractors Written proof is required from subcontract tenderers at tendering that they can meet the JBCC Selected Subcontract Agreement or other tender agreements and provide security in terms of the agreement. If the above is not provided the tender may not be accepted All amounts allowed under Provisional Amounts are intended to be awarded to Selected Subcontractors F:..... V:..... T:.....	Item	0		0,00

16	Clause 16.0 - Direct contractors F:..... V:..... T:.....	Item	0		0,00
17	Clause 17.0 - Contract instructions F:..... V:..... T:.....	Item	0		0,00
	Completion				
18	Clause 18.0 - Interim completion = n/s subcontract agreement F:..... V:..... T:.....	Item	0		0,00
19	Clause 19.0 - Practical completion F:..... V:..... T:.....	Item	0		0,00
20	Clause 20.0 - Completion in sections F:..... V:..... T:.....	Item	0		0,00
21	Clause 21.0 - Defects liability period and final completion F:..... V:..... T:.....	Item	0		0,00
22	Clause 22.0 - Latent defects liability period F:..... V:..... T:.....	Item	0		0,00
23	Clause 23.0 - Revision of date for practical completion F:..... V:..... T:.....	Item	0		0,00
24	Clause 24.0 - Penalty for late or non-completion F:..... V:..... T:.....	Item	0		0,00
25	Clause 19.0 - Temporary works and plantUser note?Insert details against this clause for any of the following where specifically required Subclause 19.1.1 - Enclosure of the works Subclause 19.1.2 - Office accommodation Clause 19.2 - Notice boardsF:..... V:..... T:.....	Item	0		0,00
26	Clause 23.0 - Contractor's domestic subcontractorsF:..... V:..... T:.....	Item	0		0,00
27	Clause 11.0 - Special insurances F:..... V:..... T:.....	Item	0		0,00
28	Clause 16.0 - Site and accessUser noteInsert details against this clause for any of the following where specifically required Clause 16.7 - Known services Clause 16.8 - Protection of trees F:..... V:..... T:.....	Item	0		0,00
29	Clause 6.0 - Contractor's site representative F:..... V:..... T:.....	Item	0		0,00
30	Clause 7.0 - Compliance with laws and regulations F:..... V:..... T:.....	Item	0		0,00
	Payment				
31	Clause 25.0 - Payment F:..... V:..... T:.....	Item	0		0,00
	Objective (A2)				

32	Clause 26.0 - Adjustment to the contract value and final account F:..... V:..... T:.....	Item	0		0,00
33	Clause 27.0 - Recovery of expense and or loss F:..... V:..... T:.....	Item	0		0,00
	Suspension and Termination				
34	Clause 28.0 - Suspension by the contractor F:..... V:..... T:.....	Item	0		0,00
35	Clause 29.0 - Termination F:..... V:..... T:.....	Item	0		0,00
	Dispute Resolution				
36	Clause 30.0 - Dispute resolution F:..... V:..... T:.....	Item	0		0,00
	Agreement				
37	No Clause	Item	0		0,00
	The agreement comprises the entire contract between the parties. No representations, terms, conditions or warranties not contained in this agreement shall be binding on the parties. No agreement or addendum varying, adding to, deleting or terminating this agreement including this clause shall be effective unless reduced to writing and signed by the duly authorised representatives of the parties. User note All information for this clause requires consultation with the contractor. The principal agent should not pre-select any of the alternatives available to the contractor				
38	Contractual agreement	Item	0		0,00
	The required information of the contracting parties and the amount of the accepted contract sum shall be inserted in the contractual agreement for signature of the agreement by the contracting parties				
	SECTION B - GENERAL PRELIMINARIES				
	Definitions and interpretation				
39	1.1 - Definitions F:..... V:..... T:.....	Item	0		0,00
40	1.2 - Interpretation F:..... V:..... T:.....	Item	0		0,00
	Documents				
41	2.1 - Checking of documents F:..... V:..... T:.....	Item	0		0,00
42	2.2 - Provisional bills of quantities N/A F:..... V:..... T:.....	Item	0		0,00
43	2.3 - Availability of construction information F:..... V:..... T:.....	Item	0		0,00

44	2.4 - Ordering of materials and goods F:..... V:..... T:.....	Item	0		0,00
	Previous work and adjoining properties				
45	3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item	0		0,00
46	3.2 - Previous work - defects F:..... V:..... T:.....	Item	0		0,00
47	3.3 - Inspection of adjoining properties F:..... V:..... T:.....	Item	0		0,00
	The site				
48	4.1 - Handover of site in stages F:..... V:..... T:.....	Item	0		0,00
49	4.2 - Enclosure of the works F:..... V:..... T:.....	Item	0		0,00
	The contractor shall provide, erect, alter as necessary, maintain, remove and make good on completion of the works suitable hoardings, complete with gantries, fans, safety screens, barriers, guard railing, access gates, covered gangways, steel sections at crane lifts, splayed corners, returned ends, etc as indicated on the drawings and as necessary for the enclosure of the works and the protection of the public, all to the satisfaction of the Representative/Agent and the Local Authority				
50	4.3 - Geotechnical and other investigations F:..... V:..... T:.....	Item	0		0,00
51	4.4 - Encroachments F:..... V:..... T:.....	Item	0		0,00
52	4.5 - Existing premises occupied F:..... V:..... T:.....	Item	0		0,00
53	4.6 - Services - Known F:..... V:..... T:.....	Item	0		0,00
	Management of contract				
54	5.1 Management of the works F:..... V:..... T:.....	Item	0		0,00
55	5.2 Progress meetings F:..... V:..... T:.....	Item	0		0,00
56	5.3 Technical meetings F:..... V:..... T:.....	Item	0		0,00
	Samples, shop drawings etc				
57	6.1 - Samples of materials F:..... V:..... T:.....	Item	0		0,00
58	6.2 - Workmanship samples F:..... V:..... T:.....	Item	0		0,00

59	6.3 - Shop drawings F:..... V:..... T:.....	Item	0		0,00
60	6.4 - Compliance with manufacturer's instructionsF:..... V:..... T:.....	Item	0		0,00
	Deposits and fees				
61	7.1 - Deposits and fees F:..... V:..... T:.....	Item	0		0,00
	Temporary services				
62	8.1 - Water F:..... V:..... T:.....	Item	0		0,00
63	8.2 - Electricity F:..... V:..... T:.....	Item	0		0,00
64	8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item	0		0,00
65	8.4 - Communication facilities F:..... V:..... T:.....	Item	0		0,00
	Prime cost amounts				
66	9.1 - Responsibility for prime cost amounts F:..... V:..... T:.....	Item	0		0,00
	Attendance on subcontractors				
67	10.1 - General attendance User note?General attendance is defined in the n/s subcontract agreementInsert details against this clause or where provisional sums are stated for any special attendance where specifically required for each n/s subcontractor separatelyF:..... V:..... T:.....	Item	0		0,00
68	10.2 - Special attendance User note?General attendance is defined in the n/s subcontract agreementInsert details against this clause or where provisional sums are stated for any special attendance where specifically required for each n/s subcontractor separatelyF:..... V:..... T:.....	Item	0		0,00
	General				
69	11.1 - Protection of the works F:..... V:..... T:.....	Item	0		0,00
70	11.2 - Protection/isolation of existing works and works occupied in sections F:..... V:..... T:.....	Item	0		0,00
71	11.3 - Security of the works F:..... V:..... T:.....	Item	0		0,00
72	11.4 - Notice before covering work F:..... V:..... T:.....	Item	0		0,00

73	11.5 - Disturbance F:..... V:..... T:.....	Item	0		0,00
74	11.6 - Environmental disturbance F:..... V:..... T:	Item	0		0,00
75	11.7 - Works cleaning and clearing F:..... V:..... T:.....	Item	0		0,00
76	11.8 - Vermin F:..... V:..... T:.....	Item	0		0,00
77	11.9 - Overhand work F:..... V:..... T:.....	Item	0		0,00
78	Clause 9.10 Enclosure of works F: ..... V: ..... T:	Item	0		0,00
79	Clause 9.11 Sheds F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain, and remove on completion of the works temporary sheds for the proper storage of materials				
80	11.10 Tenant installtions by direct contractors F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove on completion of the work an office for the exclusive use of the Representative/Agent, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board, and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times				
81	11.11 Advertising F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove if no longer required all plant and scaffolding necessary for the execution of the worksScaffolding will not be permitted to be erected from buildings on adjacent premises				
82	Clause 9.14 - Notice Board F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick all round outer edges and projecting 12mm from face of boarding and rounded on front edge The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines deep blue. All wording shall be inscribed in deep blue painted sans serif lettering Sub-contractor's individual boards will be allowed on the site subject to the written approval of the Representative/Agent				
83	Clause 9.10 Enclosure of works F: ..... V: ..... T:	Item	0		0,00
84	Sheds F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain, and remove on completion of the works temporary sheds for the proper storage of materials				

85	Office for the representative / agent F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove on completion of the work an office for the exclusive use of the Representative/Agent, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board, and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times				
86	Plant and Scaffolding F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove if no longer required all plant and scaffolding necessary for the execution of the works Scaffolding will not be permitted to be erected from buildings on adjacent premises				
87	Notice Board F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick all round outer edges and projecting 12mm from face of boarding and rounded on front edge The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines deep blue. All wording shall be inscribed in deep blue painted sans serif lettering Sub-contractor's individual boards will be allowed on the site subject to the written approval of the Representative/Agent				
	Schedule of variables				
	Information necessary for elections 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 no specific requirements are expected or that the clause is not relevant to this specific contract				
	- Provisional bills of quantities [clause 2.2] The quantities are provisional? No				
	- Availability of construction documentation [clause 2.3] Construction documentation is complete? Yes				
	- Previous work - dimensional accuracy [clause 3.1]				
	- Previous work - defects [clause 3.2]				
	- Inspection of adjoining properties [clause 3.3]				
	- Water [clause 8.1] Option A (by contractor) yes Option B (by employer - free of charge) no Option C (by employer - metered) no				
	- Electricity [clause 8.2] Option A (by contractor) yes Option B (by employer - free of charge) no Option C (by employer - metered) no				

	- Ablution and welfare facilities [clause 8.3] Option A (by contractor) yes Option B (by employer) no - Communication facilities [clause 8.4] Telephone yes Facsimile yes E-mail yes - Protection of the works [clause 11.1] - Protection/isolation of existing works and works occupied in sections [clause 11.2] Protection/isolation is required Yes - Disturbance [clause 11.5] - Environmental disturbance [clause 11.6] **SECTION C - SPECIFIC PRELIMINARIES** User note Selected examples of typical clauses are provided to indicate ways of describing such clauses. Users must delete, adapt or add to these examples to suit their particular circumstances				
88	Site instructions 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 F:..... V:..... T:.....	Item	0		0,00
89	Warranties for material and workmanship Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the firm supplying the materials and/or doing the work and shall deliver same to the principal agent on the certified completion of the contract. The warranty shall state that workmanship, materials and installation are warranteed for a specified 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 firm 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 construction of the building in which case the responsibility for replacement shall rest entirely with the contractor F:.....V:.....T:.....	Item	0		0,00
90	Co-operation of contractor for cost management 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 F:.....V:.....T:.....	Item	0		0,00

91	Propping of floors below 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 F:..... V:..... T:.....	Item	0		0,00
92	Testing of windows for watertightness 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 F:..... V:..... T:.....	Item	0		0,00
93	Testing of flat roof waterproofing for watertightness 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 36 hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofingF:..... V:..... T:.....	Item	0		0,00
	LABOUR DESK				
94	The contractor shall establish a labour desk on site with a dedicated office with and including a desk 2 chairs and electricity. From the labour desk (CLO), the contractor will appoint a dedicated community laison officer at a monthly gross remuneration as indicated, subject to all statury deductions. The community laison officer will be employed by and will report to the contractor, who will in turn forwad such reports to the Principal Agent. F:..... V:..... T:.....	Item	0		0,00
	HEALTH AND SAFETY ACT (Act 85 of 1993)				
95	Compliance with th Occupational Health and safety Act (Act 85 of 1993) and all relevant and applicable regulations, especially the Construction Health & Safety Act (Act 85 of 1993) (as amended) for the duration of the contract.	Item	0		0,00
96	Provision of OH & S plan prior to commencement of works as well as a full consolidated copy of such plan at the completion of construction work inclusive of a record of all drawings, designs, copies of statutory appointments, material used and other similarinformation concerning completed contract	Item	0		0,00
97	Implemetantion of Approved OHS plan for duration of contract, including daily/ weekly inspectios, monthly meeting, required audits, consolidated health and safety file, etc.	Item	0		0,00
98	Registration with compensation fund or approved / licenced compensation insurer.	Item	0		0,00
99	Fulltime competent employee of the contractor as safety construction supervisor and assistant safety construction supervisors for duration of contract.	Item	0		0,00
100	Health and safety training and induction requirements of all persons entering the site.	Item	0		0,00

	HIV AND AIDS POLICY				
101	Observation of all legislation, policies and by-laws regulating the "AIDS" endemic and "HIV" prevention, treatment and observation.	Item	0		0,00
	COMMUNITY DEVELOPMENT PROGRAMME				
	IDT' has taken a strategic decision to promote community development in line with it's SCM Policy. Based on the above tenderer must promote Supplier Development through involving Small Business Enterprises residing within the Municipal ward. Special reference is made to the contract Data section in terms of sub-contracting				
	The Employer shall determine the amount to be paid to the Enterprise Development Co-Ordinator for the Contract Participation Goal (CPG) on the contract and this amount shall be stated under the section Enterprise Development				
	The contractor shall be paid as follows: These are recommended rates, Client may change depending on the location of the project, complexity etc.				
102	Needs analysis and enterprise development plan per targeted enterprise	Item	0		0,00
103	Mentor and interim reporting per targeted enterprise, report will be required per quarter.	Item	0		0,00
104	Project completion report per targeted enterprise	Item	0		0,00
	SUMMARY OF CATEGORIES				
	Category : Fixed R..... Category : Value R..... Category : Time R.....				
					0,00
	SECTION NO. 2				
	BILL NO. 1				
	DEMOLITIONS				
	PREAMBLES				
	For preambles see " Specifications of materials and methods to be used PW371"				
	SUPPLEMENTARY PREAMBLES				

STRUCTURAL WORK TO BE DEMOLISHED: Where structures which support existing roof structures are to be demolished the contractor must provide temporary support until new supporting structures are in place. OLD MATERIALS TO BECOME THE PROPERTY OF THE CONTRACTOR: Old materials from alterations, except where described to be re-used or handed over, become the property of the contractor who must allow credit for same in the Final Summary. OLD MATERIALS TO BE CARTED AWAY: Old materials from the alteration, except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site. OLD MATERIALS NOT TO BE RE-USED: None of the old materials are to be used for new work except where specifically described being set aside for re-use. HANDING OVER OF MATERIALS: Where certain materials or articles from demolitions or articles are described as to be handed over by the Contractor to the Regional Representative or Representative/Agent, such materials or articles shall be properly stored by the contractor, until handing over thereof. The contractor must obtain an official receipt listing the contractor fails to submit the submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Department for the full replacement value thereof, which amount will be deducted from any monies due to the contractor. DEALING WITH HAZARDOUS MATERIALS All hazardous materials, e.g. Asbestos, etc. must be removed and disposed off site by a specialist firm as per government regulations and environmental laws. ALTERATIONS AND DEMOLISHING All works demolished or removed, surfaces shall be prepare to new.

Allow for the following requirements to the satisfaction of the Principal Agent

Existing structures In taking down and removing existing work, the utmost care shall be observed to prevent any structural or other damage to the adjoining buildings and the Contractor shall provide all shoring, needling, strutting, etc. to ensure the stability of all structures during the alteration work. Any damage, deforming and/or defaced to the structure and/or building as well as the rectification of same will be for the Contractor's account.

Existing Services Special care shall be exercised during the progress of the work to ensure that electrical installation, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Representative Agent if any disconnection or alterations become necessary. Any damage to such services shall be to the contractors account

Dust and noise The Contractor is to take all necessary precautions, to minimise noise levels and frequently watering of the works to minimise any nuisance from dust and to ensure the least interference with the general routine of the occupants and operation of the premises including all necessary labour, materials, etc. for so doing and

Disposal of debris The Contractor shall be responsible for the regular cleaning away all rubble, debris, rubbish, unusable materials, etc. as the work proceeds and for leaving the works in a clean and satisfactory state upon completion suitable for use and occupation, including all necessary labour, materials or plant, etc. for so doing

	Old materials Old materials from the alterations, except where described shall remain the property of the client. Old materials to be carted away Old materials from the alterations, except where described to be re-used or handed over, as well as all rubbish, etc. must regularly be carted away from site and not be allowed to accumulate on or around the site. Handing over of materials Where certain materials or articles from demolitions or alterations are described as to be handed over by the Contractor to the Representative/ Agent, such materials or articles shall be properly stored by the Contractor until handing over thereof. The Contractor must obtain an official receipt listing materials or articles and dates of handing over. If the Contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Client for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor. Temporary support to openings through existing walls Making openings, altering openings in existing walls and removing lintels above existing openings shall be done with the utmost care to prevent any structural damage. All necessary supports, propping, shoring, needling strutting, turning pieces, etc. to wall openings is deemed to be included in the Contractor's rates. Electrical And Mechanical Where items include for taking down electrical and mechanical fittings the disconnection and making safe electrically is deemed to be included. Contractor to note items with barcodes (asset numbers) cannot be removed without prior arrangement with authorities NOTE:- Contractor to note that items with barcodes, cannot be disposed or removed from site prior to arranging with Client Site visit Tenderers are to visit and view the site and existing structures to be demolished to thoroughly acquaint themselves with the nature of demolitions, the nature and extent of the work and the conditions under which the works are to be done **DEMOLITIONS ETC** Note: Unless otherwise stated, all materials from the lterations and demolitions will belong to the builder. The builder should allow for the removal of all debris from site and keep the site clean at all times **Demolishing and removing**				
1	Desludge 10.5 x 4.6 x 2.5m High overall comprising of brick wall, concrete foundation, sanitary fittings, 5 x 2 x 2m Deep pit with brick lining, all materials to be cart off site to a dumping site approved by the Environmental Engineer. NOTE: Pit full of sludge/human waste, etc. Pit to be backfilled and compacted to 93% Mod AASHTO density to the satisfaction of the Civil Engineer.(4G Ablution Block)	No	4		0,00
					0,00
	SECTION NO. 3 **BILL NO. 1** **EARTHWORKS (PROVISIONAL)**				

	The following are typical examples of descriptions of "nature of ground"				
	Nature of ground				
	The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, all of which will be deemed as "earth", but possibly interspersed with "hard rock"				
	A soils investigation has been carried out on the site by the engineer and the report is annexed to these bills of quantities. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"				
	Subterranean water				
	Subterranean water is expected The water table is expected to vary between approximately 2m and 6m below natural ground level. The removal of subterranean water is given separately				
	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				
	Filling and layer work materials				
	References such as "G1", "G2", etc and "C1", "C2", etc in descriptions of filling and layer work materials refer to corresponding references in the document "Guidelines for Road Construction Materials. TRH 14 : 1985" compiled by the Committee of State Road Authorities and the properties set out therein for each kind shall be applicable to the respective materials described hereinafter				
	Testing				
	Prices for filling are to include for all necessary density and other tests				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	78		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to ?% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00

	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	22		0,00
4	Basements or Pit	m^3	12		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to ?% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	21		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	61		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	21		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	24		0,00
14	Under floors, steps, pavings, etc	m^3	9		0,00
15	Backfilling to trenches, holes, etc	m^3	18		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	12		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with ? passes of a ? ton vibratory roller	m^2	78		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				

18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	24		0,00
19	To bottoms and sides of trenches etc	m^2	72		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 3

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests for approval. The testing shall be undertaken by an approved independent firm or institution nominated by the contractor (test cubes are measured separately)

Breeze concrete

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); 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

Lightweight concrete

Lightweight concrete shall have a density of 600kg/m3 for the top 50mm and 400kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Formwork

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

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

Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described				
	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"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	2		0,00
2	Surface beds on waterproofing	m^3	3		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	4		0,00
4	Surface beds on waterproofing	m^3	6		0,00
5	Pit toilet base	m^3	1		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	6		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	31		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	7		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	4		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	0,52		0,00

	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	32		0,00
					0,00

SECTION NO. 3

BILL NO. 3

PRECAST CONCRETE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes

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

General

Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming

PRECAST CONCRETE SLABS ETC

Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.

1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00

SECTION NO. 3

BILL NO. 4

MASONRY

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Bagged and sealed walls

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 bitumen emulsion waterproofing coating

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour

Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

BLOCKWORK

Concrete masonry units

Blocks are to be either solid or hollow modular dense concrete masonry units having a compressive strength of 7MPa

Wall ties for blockwork

Wall ties shall be polypropylene ties complying with BS 76377. Ties for hollow walls shall be of sufficient length to allow not less than 75mm of each end to be built into the blockwork. Ties are to be spaced at intervals of not more than 1m in the horizontal direction and not more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other

Blockwork

Blockwork shall comply with SANS 10145 "Concrete Masonry Construction"

Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole

Standard complementary blocks

Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary

DECORATIVE BLOCKS

Blocks shall be of approved manufacture, sound, well burnt or cured and uniform and true in size, shape and colour

BRICKWORK

FOUNDATIONS (PROVISIONAL)

	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
	SUPERSTRUCTURE				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	11		0,00
2	One brick walls	m^2	74		0,00
3	One brick walls in beamfilling	m^2	8		0,00
	BRICKWORK SUNDRIES				
	2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	38		0,00
5	110mm Wide reinforcement built in horizontally	m	310		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	8		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	1		0,00
	FACE BRICKWORK				
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	74		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	8		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	4		0,00
12	220mm Wide sills set sloping and slightly projecting	m	1		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	21		0,00
					0,00

	SECTION NO. 3				
	BILL NO. 5				
	WATERPROOFING				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m^2	6		0,00
	One layer 375 (500, 1000?) micron orange polyethylene waterproof sheeting (SANS 952-1985 type A) sealed at laps with PVC self-adhesive tape				
2	Under surface bedS	m^2	18		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On walls	m^2	21		0,00
4	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	3		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 6				
	ROOF COVERINGS, CLADDINGS, ETC				
	Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade				
	PROFILED METAL SHEETING AND ACCESSORIES				
	Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium				
	0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins				
1	Roof covering with pitches not exceeding 25 degrees	m^2	48		0,00

2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	ROOF AND WALL INSULATION				
	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation sheeting fixed to underside of rafters (at approximately ?mm centres) with 150mm stapled laps including galvanised (PVC coated ?) steel straining wires at not exceeding 400mm centres and double-sided tape at edges where required	m^2	41		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 7				
	CARPENTRY AND JOINERY				
	Fixing				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete				
	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				
	Decorative thermosetting plastic laminate covering				
	Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish				
	PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC				
	SUPPLEMENTARY PREAMBLES				
	References given in descriptions refer to the respective types of trusses detailed on the architect's/engineer's drawings numbered ? annexed to these bills of quantities (accompanying these bills of quantities?) for tender purposes				
	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	Sawn softwood grade				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless (socketed?) barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	26		0,00

	DOORS ETC				
	Wrought hardwood flushback doors with sapele veneer hung to steel frames				
3	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	2		0,00
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	40mm Door 910 x 2100mm high	No	1		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	3		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 8				
	IRONMONGERY				
	Proprietary items				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration				
	LOCKS				
	Keys				
	Unless otherwise described locks shall have two keys each				
	"EN-SUITE" LOCKS				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	6		0,00
2	50 x 25 LD polished barrel bolts	No	4		0,00
	The following locks are to be suitable for master key operation				
3	50mm padlock	No	1		0,00
4	Bathroom lockset	No	3		0,00

5	Three-lever lockset	No	3		0,00
	HANDLES				
	Manufactured by "SOLID"				
	In accordance with "Solid" catalogue				
6	Anodised aluminium pull handle	No	5		0,00
					0,00

SECTION NO. 3

BILL NO. 9

METALWORK

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria Glazing shall comply with SAGGA regulations. Glass shall be type ? laminated performance glass as shown on the window schedules/drawings appended to these bills of quantities (as described in the headings to window descriptions?). Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed For purpose made windows and doors, refer to drawings annexed to (issued separately with?) these bills of quantities

The following certificates shall be provided prior to commencement of site work:1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product 2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

	3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process 4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years				
	GALVANISED STEEL GATES, SCREENS, ETC				
	Steel gates and frames				
1	Single gate and frame for opening 910 x 2 100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	1		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	1		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	7		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 10				
	PLASTERING				
	The following preambles are to be included only when specifically required by the principal agent				
	GRANOLITHIC				
	Untinted granolithic on concrete				
1	35mm Thick on floors and landings	m^2	39		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	84		0,00
					0,00

SECTION NO. 3

BILL NO. 11

PLUMBING AND DRAINAGE (PROVISIONAL?)

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

Stormwater channels

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

French drains

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, "?" geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks

Descriptions of proprietary type 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 and disposal of surplus material on site

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

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0) Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8) Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8) Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

Copper pipes

Pipes shall be hard drawn and half-hard pipes of the class described. 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 "?" type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and 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

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc, casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

Disinfection of water pipework

Water pipework is to be disinfected at completion

"?" petrolatum anti-corrosion tape

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with ?% overlaps Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions

Prices for wrapping of pipes shall include for all work as described to couplings in the length

	Laying, backfilling, bedding, etc of pipes				
	Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled				
	Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001				
	General				
	Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately) Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends				
	Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of ?% Mod AASHTO density and disposal of surplus material on site				
	Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)				
	Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)				
	As-built drawings				
	Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	"Marley Streamline" uPVC				
1	110mm Half-round roof gutters	m	14		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	2		0,00

8	"Charlog" VIP 200 or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	2		0,00
9	320 x 350mm Type 490mm curved bowl urinal fitted with waterless urinal cold water fittings, and mounted with brackets on wall	No	4		0,00
	WASTE UNIONS ETC				
10	32mm chromium plated basin waste union	No	2		0,00
	TRAPS ETC				
11	50mm Rubber "P" or "S" trap	No	2		0,00
	TAPS, VALVES, ETC				
12	15mm Brass hose bib-tap	No	2		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
13	50mm Pipes	m	10		0,00
14	110mm Vent pipes fixed to brickwork	m	6		0,00
	Extra over PVC-U soil and vent pipes for fittings				
15	50mm Bend	No	8		0,00
16	50mm Junction	No	2		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
17	15mm Pipes	m	10		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
18	15mm Fittings	No	12		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 12				
	GLAZING				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				

1	Panes not exceeding 0,1m^2	m^2	2		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	2		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 13				
	PAINTWORK				
	SUPPLEMENTARY PREAMBLES				
	PREPARATORY WORK TO EXISTING WORK				
	PAINT SPECIFICATIONS				
	All painting shall be done in accordance with "?" specifications unless otherwise described				
	COLOURS				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	84		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	8		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	3		0,00
4	Windows	m^2	1		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	4		0,00

	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	15		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00
8	Ironmongery				0,00
9	Metalwork				0,00
10	Plastering				0,00
11	Plumbing and drainage				0,00
12	Glazing				0,00
13	Paintwork				0,00
					0,00
	SECTION NO. 4				
	BILL NO. 1				
	EARTHWORKS (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Classification of excavated material				
	"Hard rock" shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives "Soft rock" shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness "Earth" shall mean all ground other than that classified as "hard rock" or "soft rock" and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m3 in volume				

Applicable standards

All earthworks to be carried out in accordance with SANS 2001 - Construction works Part BE1: Earthworks (general) as well as SANS 10400-F: Site operations and SANS 10400-G: Excavations

Filling material (General)

It will be, at all times, required from the contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the principal agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Filling in sub-layers, under floors, etc

All filling in layers under surface beds, in sub-layers, to form earth mattresses, backfilling, etc. shall be done with materials specified and according to methods prescribed by the SANS 1200ME Sub-base Specification in layers of 150mm thickness

The aforesaid specification was drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on the filling details and requirements prescribed for this project

The said specification, although not issued with, shall be regarded to form part of these Bills of Quantities. The contractor shall obtain a copy of the said specification from the South African National Standards authority and be kept on site at all times

CBR and indicator tests

The contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the principal agent prior commencement of any placement thereof and/or filling done therewith

Density tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

It will be required from the contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling under surface beds, aprons, channels, etc: 1 Test per 125m^2 pl area per each 150mm thick layer

- Filling behind retaining walls: 1 Tests per each 10m length of retaining wall

Results of density tests executed are to be submitted to and approval obtained from the principal agent prior commencement of any subsequent fill layers and/or other work

Carting away excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall be deemed to include the loading, hauling and off-loading of excessive or unsuitable excavated material to a suitable and approved dumping site, which has to be located by the contractor, off the premises

The location of the intended dumping site will be subjected to the prior written approval of the principal agent

The contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used dumping/spoiling by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent

Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained

Soil poisoning and insecticide

All soil poisoning and insecticide to be applied under a five year guarantee by an approved firm of Specialists. Soil insecticides shall comply with SANS Specification 1165. Work shall be carried out in accordance with “The application of soil insecticides for the protection of buildings” - SANS Code of Practice 0124 Casting of concrete floors to start within 24 hours after the application of soil poisoning

Pest control applicators must provide :1. Proof of pesticides and insecticides (data sheets)2. Toxicants must be registered with the Department of Agriculture2. Proof that they are qualified to perform the work3. Five year guarantee certificate

Measurement and payment

Measurement and payment clauses as described in the above-mentioned specification, Standardized Specification for Civil Engineering Construction, shall not apply to the work as set out in this Bill

Subterranean water

No information regarding susterranean water is available. The tenderer must acquit himself of the presence and depth of subterranean water and allow therefore in his prices

	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	111		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to 95% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00
	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	28		0,00
4	Basements or Pit	m^3	39		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 95% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	49		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	85		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	49		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	33		0,00
14	Under floors, steps, pavings, etc	m^3	8		0,00

15	Backfilling to trenches, holes, etc	m^3	26		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	27		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with 3 passes of a 5 ton vibratory roller	m^2	111		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	21		0,00
19	To bottoms and sides of trenches etc	m^2	105		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 4

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels of maximum 16m2

Concrete test cubes

Descriptions and tendered rates for concrete strength test cubes, as required under clause 7, "Tests" of SANS 1200 G, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent and engineer

All concrete strength test cubes, each size 150 x 150 x 150mm, shall be prepared in a set of three

It will be required from the contractor to prepare concrete strength test cube sets for each building at the following minimum frequencies: - One set of three cubes for every 20m^3, or part thereof, of concrete cas per day, or: - One set of three cubes for each batch of concrete cast per event

All concrete strength test cubes shall be labelled and the identity thereof (ie. date, concrete strength type, position where batch was cast relative to the building and building identity) shall be properly recorded for future reference

Reinforced concrete

All reinforced concrete is to be compacted with a mechanical vibrator

Formwork

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

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

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer or principal agent for design reasons. Formwork necessitated by irregularities 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 which is made for in "Earthworks"

Formwork necessitated by irregularity or collapse of excavated faces is not 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"

Formwork to soffits of solid slabs, etc shall be deemed to be slabs not exceeding 200mm thick unless otherwise described

Degree of accuracy of formwork: Grade 2 as SANS 1280G

Permissible deviations: Flatness of plain surface - 5mm Abrupt changes in a continuous surface - 5mm

Supervision

A competent and experienced foreman shall supervise personally the whole of the concrete construction and pay special attention to:

The quality, testing and mixing of materials; The placing and compaction of concrete; The construction and removal of formwork; and The sizes and position of the reinforcement

The contractor shall obtain the permission of the engineer or principal agent before comencing concreting of foundations, surface beds and reinforced structure

	No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the engineer or principal agent to comment on any particular aspect of the work shall be deemed to relieve the contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the drawings, specifications and conditions of contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the engineer or principal agent to inspect all or any part of the works or that such inspection is necessarily complete in every respect				
	Reinforcement				
	Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps The mass of binding wire is not included in the mass of the reinforcement and the cost thereof must be included in the rates for reinforcement				
	CONCRETE IN FOUNDATIONS (PROVISIONAL)				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	5		0,00
2	Surface beds on waterproofing	m^3	6		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	6		0,00
4	Surface beds on waterproofing	m^3	5		0,00
5	Pit toilet base	m^3	4		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	8		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	43		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	22		0,00

	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	4		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	0,82		0,00
	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	59		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 3				
	PRECAST CONCRETE				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes				
	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				
	General				
	Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming				
	PRECAST CONCRETE SLABS ETC				
	Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.				
1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 4				
	MASONRY				

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Mortar

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used Mortar plasticizers may only be used with the approval of the principal agent

Mortar test cubes

Descriptions and tendered rates for mortar strength test cubes, as required by the principal agent, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent

It will be required from the contractor to prepare mortar strength test cubes for each building at a frequency as decided upon by the principal agent

All mortar strength test cubes shall be labelled and the identity thereof (ie. date, mortar strength type, position where batch was taken from relative to the building and building identity) shall be properly recorded for future reference

Brickwork

Brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid. Mortar joints shall be not less than 8mm or more than 12mm thick Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining brickwork

Bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Brickwork reinforcement

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2.8mm diameter main wires with 2.5mm cross wires at 300mm centres welded at intersections Reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

	Centres and turning pieces Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days **Face bricks** Bricks shall be ordered timeously to obtain uniformity in size and colour Facing bricks shall exhibit a liability to efflorescence not in excess of "slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14% Particular care shall be taken to preserve arrisses and faces of face and paving bricks during transit and handling Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick used is obtained All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws **Pointing** Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc **Samples** Samples of all masonry building units, except for walls described as "load bearing" shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site **BRICKWORK** **FOUNDATIONS (PROVISIONAL)** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar **SUPERSTRUCTURE** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	30		0,00
2	One brick walls	m^2	104		0,00
3	One brick walls in beamfilling	m^2	11		0,00
	BRICKWORK SUNDRIES 2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	101		0,00
5	110mm Wide reinforcement built in horizontally	m	458		0,00

	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	19		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	2		0,00
	FACE BRICKWORK				
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	104		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	11		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	9		0,00
12	220mm Wide sills set sloping and slightly projecting	m	2		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	49		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 5				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Damp-proof course to walls				
	All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap should be equal the full thickness of the wall				
	Waterproofing				

	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
1	In walls	m^2	9		0,00
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
2	Under surface bedS	m^2	15		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On floors	m^2	22		0,00
4	On walls	m^2	48		0,00
5	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	8		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 6				
	ROOF COVERINGS, CLADDINGS, ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	General				
	Roof covering must be done by a specialist. A written 5-year guarantee certificate must be issued on completion thereof				
	Prices to include for all cutting and waste and relevant fixing material, unless otherwise described				
	Sizes				
	All items are measured net unless otherwise described				

	Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade				
	PROFILED METAL SHEETING AND ACCESSORIES				
	Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium				
	0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins				
1	Roof covering with pitches not exceeding 25 degrees	m^2	44		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	ROOF AND WALL INSULATION				
	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	37		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 7				
	CARPENTRY AND JOINERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	ROOF TRUSSES				
	Pre-fabricated metal connected timber roof trusses				
	All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction				
	Trusses should be handled and erected in accordance with SANS 10243				
	Timber				
	Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SANS Specification No 563 or as defined in SANS Specification No 1460				

Bolts

Bolts shall be in accordance with BS 4190 or SANS 135

Shear plates, tooth connectors and split rings

Shear plates, tooth connectors and split rings shall be in accordance with BSS 1759 : 1960 and installed in accordance with the CSIR Publication HOUT 468, "The Design, Manufacturing and Erection of Timber Trusses"

Washers

Square or round washers of the following dimensions shall be used with all bolts:

1 Bolts up to 8mm diameter: Washers shall be minimum 25mm wide of minimum 2,50mm thickness

2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness

3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness

Metal connector plates

Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel

The steel shall have a minimum yield strength of 228MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be not less than 275g/m2 commercial class hot dipped galvanising as per SANS 934 before stamping

All connector plates shall have been tested by the CSIR and be of a size capable of transmitting the forces between members of a truss without exceeding the design values published in the CSIR report

Truss construction

Trusses shall be constructed in jigs specially designed to unsure the correct profile, overhangs and cambers

Where metal connector plates are used all joints are to be close fitted butt joints made by precision pressing of the metal connector plates into each side of the joint

Truss design

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

Truss spacing

The truss centres shall be less than or equal to that as described in this bill for each respective truss

Truss pitch

The truss pitch shall be as described in this bill for each respective truss type

Truss loading

Trusses shall be designed for a live load of 0,50kN/m2 and dead load as specified below

Shop drawings, design and erection guarantee certificates

It will be expected from the contractor to timeously prepare, submit and obtain the necessary approvals from the principal agent in respect of the required shop drawings, design and erection guarantee certificates as specified

Dimensions

All dimensions given in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences

Erection

All trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber roof Trusses" as published by the Institute for Timber Construction and the CSIR, or the SABS Code of Practice "The Design, Manufacture and Erection of Timber Roof Trusses", or as designed and detailed by the designer

Design system

The design system as documented in this bill is based on the "TRi design 3000" system and all references given in the descriptions are related to specific type of trusses based on this design system

However, the contractors is to note that any design system of similar quality may be used subject to the prior written approval of the principal agent

Both the design and guarantee for the prefabricated timber roof construction complete, (excluding battens and/or purlins) to be designed, constructed and delivered to site by an approved firm of specialists, under a written guarantee, which shall be lodged with the principal agent for approval before the work commence

Rates

Tendered rates to include for the complete roof construction, including the design of the roof construction, all timber of required grade and type shown on the design, all cutting and waste, cutting to the exact lengths and end angles to manufacture the respective truss type, supply of all connector plates, prefabrication of trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works (cost of girder trusses to include cost of required metal truss hangers), etc

Prices for trusses must also include for: 1. Unloading and storing under cover and protecting from the weather, or handing over to others for unloading and storing as required

2. Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing and holding down and connections supplied by the truss fabricator for use by: 2.1 themselves (when responsible for erection) 2.2 others (where applicable)

3. Such site supervision as deemed necessary by the fabricator of the trusses to ensure that all the erection details have been complied with to his satisfaction

Fixing of purlins

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

GENERAL CARPENTRY AND JOINERY

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

Particle board

Particle board shall comply with the following specifications: a) SANS 1300 Particle board: exterior and flooring type b) SANS 1301 Particle board: interior type

Decorative laminate finish

Decorative laminate finishes shall be glued under pressure

All edge strips shall be butt jointed at junctions with adjacent similar finish

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

	Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained				
	ROOFS ETC				
	Plate nailed timber roof truss construction				
	Unless otherwise described, the following specifications will apply:				
	1 All trusses to be with a 26° pitch at approximately 750mm centres				
	2 The dead load consists of 420 x 332mm "Marley Monarch Antique" tiles on 38 x 38mm purlins at approximately 320mm centres with either 4 - 9.5mm fibre-cement or plasterboard nailed-up ceilings on 38 x 38mm brandering at 450mm centres or 40mm thick suspended ceilings				
	Sawn softwood				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	38		0,00
	DOORS ETC				
	Wrought meranti doors hung to steel frames				
3	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	1		0,00
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	40mm Door 910 x 2100mm high	No	6		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	7		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				

	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Finishes to ironmongery				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	12		0,00
2	50 x 25 LD polished barrel bolts	No	6		0,00
	LOCKS				
	Keys				
	Unless otherwise described locks shall have two keys each				
	"EN-SUITE" LOCKS				
	"Union"				
	The following locks are to be suitable for master key operation				
3	50mm padlock	No	1		0,00
4	Three-lever lockset	No	7		0,00
5	Bathroom lockset	No	6		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 9				
	METALWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Primer				

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer All scratches, chips or blemishes to be made good on site after erection All rates tendered must make provision for this as no claim will afterwards be entertained.

Descriptions

No allowance has been made in the mass of steel for rolling margins, rivets, additional materials in welding, decorative or protective treatment nor constructional aids

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete

Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Welded joints and intersections

Prices of continuous rails shall include for welded joints in the length and prices of instersections shall include all cutting, mitring, scribing, shaping, etc

Bends, knees, ramps and the like to continuous rails shall be forged and rounded to approved radii

Prices for balustrades, burglar guards and the like shall include for framed and welded joints at instersections

Screws and bolts

Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless described otherwise, be used for srewing items items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium

Items fixed to adjoining metalwork with rivets, self-tapping screws, machine screws, etc shall include all necessary drillings

Where bolting is specified, projecting shank ends of bolts shall be cut off flush and left smooth

Door frames

Unless otherwise described, the following shall be applicable on all door frames: - Frames shall be double rebated suitable for 40mm thick doors

- One jamb of all frames for single doors shall be factory prepared for striking plate of mortice lock

- All frames shall be factory fitted with three washered butt hinges for each door

- All frames shall be treated with one coat factory applied metal primer complying with SANS Specification 909

	Striking plates for door frames				
	Striking plates to be of chromium-plated type, unless otherwise described				
	Sealing of all abutments				
	All windows, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicon sealant along all joints and prices to allow therefore				
	GALVANISED STEEL GATES, SCREENS, ETC				
	Steel gates and frames				
1	Single gate and frame for opening 910 x 2100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	1		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	7		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	9		0,00
4	Window type W1, 889 x 457mm high	No	2		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 10				
	PLASTERING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Preparatory work				

	Surfaces shall be clean and free from oil and thoroughly wetted directly before any plastering or other in-situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key **Finish** All coats of paving and plastering shall be executed in one operation without any blemishes **Granolithic** Granolithic shall be cured for at least seven days after laying Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid Granolithic shall be divided into panels not exceeding 6m2 with V-joints and deep trowel cuts Granolithic to stairs shall include non-slip reedings to treads **Skirtings** Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square juntion with floor finish **Plaster** All plaster, other than skim plaster, shall not be less than 10mm and not more than 20mm thick **General** Rates for plastering described as being on walls shall include concrete columns, beams and lintels flush with the face of the wall **Textured finishes** All textured finishes are to be applied to the satisfaction of the principal agent and executed by an approved firm of specialists, all strictly in accordance with the materials supplied and methods employed by the manufacturer **Preparatory work for textured finishes** Textured finishes to be applied to surfaces as described. Rates tendered are to include for all necessary priming, preparatory work, etc All surfaces are to be inspected and approved by the principal agent prior any work is commenced **<u>GRANOLITHIC</u>** **Untinted granolithic on concrete**				
1	35mm Thick on floors and landings	m^2	36		0,00
	<u>INTERNAL PLASTER</u>				

	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	151		0,00
					0,00

SECTION NO. 4

BILL NO. 11

PLUMBING AND DRAINAGE (PROVISIONAL)

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Regulations

All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work on this contract

Prices

Prices must include for arranging joints at convenient points, embedding in concrete of for rough cutting around brickwork as the work proceeds

No distinction has been made between pipes chased in walls, fixed in ceilings, roofs, floors, columns, slabs, etc or for different finishes to these elements and has been described as "pipes".

Prices shall therefore include for all holderbats, brackets, clips, bands, etc and building in or chasing of same, holes through brickwork, concrete, etc and for making good facings, plaster, granolithic and other in-situ finishes as necessary

Prices to fixing of sanitary fittings etc shall include for setting up and fixing in position as described, joints to soil, waste and supply pipes as the case may be, making good finishes around and for protecting fittings from injury during subsequent building operations

Excavations

Prices for all excavations must include for necessary staging and for the risk of collapse of excavation side and also keeping excavations free from water

Laying, backfilling, bedding, etc. of pipes

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

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

Compacting

Filling for all types of pipes described as "under solid floors, etc." shall be done with approved backfilling and compacted to 93% Mod. AASHTO density, unless otherwise described

uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed

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 wall half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bend 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" or similar and approved type. Capillary solder fittings shall comply with ISO 2016

Galvanised steel pipes and fittings

Galvanised steel pipes are to be "Tosa" or similar and approved medium class to SANS 62 and fittings are to be manufactured by "Tupy" or similar and approved

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level

Disinfection of water pipework

All pipework is to be disinfected in accordance with SANS 1200L

Reducing fittings

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

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

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

Stainless steel used for the manufacturing of urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be type 304 (18/8)

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

Flush pans

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

Sealing of abutments

All sanitary fittings abutting walls, tiled surfaces, vanity slabs, work tops, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

Waste unions

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

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster

Testing

Descriptions for the testing of plumbing and drainage installations shall be deemed to cater for all testing apparatus, labour, etc. and shall be done strictly as directed by and in accordance to the Principal Agent's instructions, including for re-testing after taking out and making good all defective work to his entire satisfaction

<u>As-built drawings</u>

Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)

<u>RAINWATER DISPOSAL</u>

"Marley Streamline" uPVC

1	110mm Half-round roof gutters	m	19		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	5		0,00
8	"ATLAS" VIP 200 Code 222 AP C/W or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	6		0,00
	WASTE UNIONS ETC				
	"Cobra Watertech"				
9	32mm chromium plated basin waste union	No	5		0,00
	TRAPS ETC				
	"Marley"				
10	50mm Rubber "P" or "S" trap	No	5		0,00
	TAPS, VALVES, ETC				
	Brass				
11	15mm Brass hose bib-tap	No	5		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
12	50mm Pipes	m	20		0,00
13	110mm Vent pipes fixed to brickwork	m	18		0,00
	Extra over PVC-U soil and vent pipes for fittings				
14	50mm Bend	No	16		0,00
15	50mm Junction	No	5		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
16	15mm Pipes	m	20		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				

17	15mm Fittings	No	24		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 12				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m^2	m^2	2		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	5		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 13				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				

	Descriptions of painting shall be deemed to include complete preparation of new as well as existing surfaces, including patching and filling, sanding and primer on nail and screw heads Descriptions of painting on pipes, gutters, etc shall be deemed to include painting on holder bats, hangers, clips, clamps, etc Descriptions of painting on windows, frames, etc shall be deemed to include primer in rebates of sashes to be glazed				
	PAINTWORK, ETC TO NEW WORK				
	ON FLOATED PLASTER				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	151		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	11		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	6		0,00
4	Windows	m^2	2		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	4		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	20		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00

8	Ironmongery			0,00
9	Metalwork			0,00
10	Plastering			0,00
11	Plumbing and drainage			0,00
12	Glazing			0,00
13	Paintwork			0,00
				0,00

SECTION NO. 5

BILL NO. 1

EARTHWORKS (PROVISIONAL)

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Classification of excavated material

“Hard rock” shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives “Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness “Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m3 in volume

Applicable standards

All earthworks to be carried out in accordance with SANS 2001 - Construction works Part BE1: Earthworks (general) as well as SANS 10400-F: Site operations and SANS 10400-G: Excavations

Filling material (General)

It will be, at all times, required from the contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the principal agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Filling in sub-layers, under floors, etc

All filling in layers under surface beds, in sub-layers, to form earth mattresses, backfilling, etc. shall be done with materials specified and according to methods prescribed by the SANS 1200ME Sub-base Specification in layers of 150mm thickness

The aforesaid specification was drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on the filling details and requirements prescribed for this project

The said specification, although not issued with, shall be regarded to form part of these Bills of Quantities. The contractor shall obtain a copy of the said specification from the South African National Standards authority and be kept on site at all times

CBR and indicator tests

The contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the principal agent prior commencement of any placement thereof and/or filling done therewith

Density tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

It will be required from the contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling under surface beds, aprons, channels, etc: 1 Test per 125m^2 pl area per each 150mm thick layer

- Filling behind retaining walls: 1 Tests per each 10m length of retaining wall

Results of density tests executed are to be submitted to and approval obtained from the principal agent prior commencement of any subsequent fill layers and/or other work

Carting away excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall be deemed to include the loading, hauling and off-loading of excessive or unsuitable excavated material to a suitable and approved dumping site, which has to be located by the contractor, off the premises

The location of the intended dumping site will be subjected to the prior written approval of the principal agent

	The contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used dumping/spoiling by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained **Soil poisoning and insecticide** All soil poisoning and insecticide to be applied under a five year guarantee by an approved firm of Specialists. Soil insecticides shall comply with SANS Specification 1165. Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS Code of Practice 0124 Casting of concrete floors to start within 24 hours after the application of soil poisoning Pest control applicators must provide :1. Proof of pesticides and insecticides (data sheets)2. Toxicants must be registered with the Department of Agriculture2. Proof that they are qualified to perform the work3. Five year guarantee certificate **Measurement and payment** Measurement and payment clauses as described in the above-mentioned specification, Standardized Specification for Civil Engineering Construction, shall not apply to the work as set out in this Bill **Subterranean water** No information regarding susterranean water is available. The tenderer must acquit himself of the presence and depth of subterranean water and allow therefore in his prices				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	83		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to 95% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00
	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	32		0,00

4	Basements or Pit	m^3	30		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 95% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	34		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	92		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	34		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	25		0,00
14	Under floors, steps, pavings, etc	m^3	9		0,00
15	Backfilling to trenches, holes, etc	m^3	29		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	19		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with 3 passes of a 5 ton vibratory roller	m^2	83		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	24		0,00
19	To bottoms and sides of trenches etc	m^2	114		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				

20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 5

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels of maximum 16m2

Concrete test cubes

Descriptions and tendered rates for concrete strength test cubes, as required under clause 7, "Tests" of SANS 1200 G, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent and engineer

All concrete strength test cubes, each size 150 x 150 x 150mm, shall be prepared in a set of three

It will be required from the contractor to prepare concrete strength test cube sets for each building at the following minimum frequencies: - One set of three cubes for every 20m^3, or part thereof, of concrete cas per day, or: - One set of three cubes for each batch of concrete cast per event

All concrete strength test cubes shall be labelled and the identity thereof (ie. date, concrete strength type, position where batch was cast relative to the building and building identity) shall be properly recorded for future reference

Reinforced concrete

All reinforced concrete is to be compacted with a mechanical vibrator

Formwork

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

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

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer or principal agent for design reasons. Formwork necessitated by irregularities 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 which is made for in "Earthworks"

Formwork necessitated by irregularity or collapse of excavated faces is not 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"

Formwork to soffits of solid slabs, etc shall be deemed to be slabs not exceeding 200mm thick unless otherwise described

Degree of accuracy of formwork: Grade 2 as SANS 1280G

Permissible deviations: Flatness of plain surface - 5mm Abrupt changes in a continuous surface - 5mm

Supervision

A competent and experienced foreman shall supervise personally the whole of the concrete construction and pay special attention to:

The quality, testing and mixing of materials; The placing and compaction of concrete; The construction and removal of formwork; and The sizes and position of the reinforcement

The contractor shall obtain the permission of the engineer or principal agent before comencing concreting of foundations, surface beds and reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the engineer or principal agent to comment on any particular aspect of the work shall be deemed to relieve the contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the drawings, specifications and conditions of contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the engineer or principal agent to inspect all or any part of the works or that such inspection is necessarily complete in every respect

Reinforcement

Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps The mass of binding wire is not included in the mass of the reinforcement and the cost thereof must be included in the rates for reinforcement

CONCRETE IN FOUNDATIONS (PROVISIONAL)

UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

	25MPa concrete				
1	Strip footings	m^3	4		0,00
2	Surface beds on waterproofing	m^3	4		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	7		0,00
4	Surface beds on waterproofing	m^3	6		0,00
5	Pit toilet base	m^3	3		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	3		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	6		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	41		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	17		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	4		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	0,63		0,00
	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	52		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 3				
	PRECAST CONCRETE				
	PREAMBLES				

	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes				
	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				
	General				
	Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming				
	PRECAST CONCRETE SLABS ETC				
	Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.				
1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 4				
	MASONRY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes in descriptions				
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
	Mortar				
	The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used Mortar plasticizers may only be used with the approval of the principal agent				
	Mortar test cubes				

Descriptions and tendered rates for mortar strength test cubes, as required by the principal agent, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent

It will be required from the contractor to prepare mortar strength test cubes for each building at a frequency as decided upon by the principal agent

All mortar strength test cubes shall be labelled and the identity thereof (ie. date, mortar strength type, position where batch was taken from relative to the building and building identity) shall be properly recorded for future reference

Brickwork

Brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid. Mortar joints shall be not less than 8mm or more than 12mm thick Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining brickwork

Bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Brickwork reinforcement

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2.8mm diameter main wires with 2.5mm cross wires at 300mm centres welded at intersections Reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

Centres and turning pieces

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour Facing bricks shall exhibit a liability to efflorescence not in excess of "slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of face and paving bricks during transit and handling

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick used is obtained

All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws

Pointing

	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc				
	Samples				
	Samples of all masonry building units, except for walls described as "load bearing" shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site				
	BRICKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
	SUPERSTRUCTURE				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	27		0,00
2	One brick walls	m^2	111		0,00
3	One brick walls in beamfilling	m^2	12		0,00
	BRICKWORK SUNDRIES				
	2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	90		0,00
5	110mm Wide reinforcement built in horizontally	m	498		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	17		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	3		0,00
	FACE BRICKWORK				
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork for face brickwork (Provisional)	m^2	111		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	12		0,00

	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	9		0,00
12	220mm Wide sills set sloping and slightly projecting	m	3		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	34		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 5				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Damp-proof course to walls				
	All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap should be equal the full thickness of the wall				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
1	In walls	m^2	10		0,00
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
2	Under surface bedS	m^2	18		0,00
	WATERPROOFING TO BASEMENTS				

	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On floors	m^2	17		0,00
4	On walls	m^2	30		0,00
5	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	5		0,00
					0,00

SECTION NO. 5

BILL NO. 6

ROOF COVERINGS, ETC

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

General

Roof covering must be done by a specialist. A written 5-year guarantee certificate must be issued on completion thereof

Prices to include for all cutting and waste and relevant fixing material, unless otherwise described

Sizes

All items are measured net unless otherwise described

Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade

PROFILED METAL SHEETING AND ACCESSORIES

Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium

0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins

1	Roof covering with pitches not exceeding 25 degrees	m^2	48		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	Sundries				

	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/m² and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	42		0,00
					0,00

SECTION NO. 5

BILL NO. 7

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

ROOF TRUSSES

Pre-fabricated metal connected timber roof trusses

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

Timber

Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SANS Specification No 563 or as defined in SANS Specification No 1460

Bolts

Bolts shall be in accordance with BS 4190 or SANS 135

Shear plates, tooth connectors and split rings

Shear plates, tooth connectors and split rings shall be in accordance with BSS 1759 : 1960 and installed in accordance with the CSIR Publication HOUT 468, "The Design, Manufacturing and Erection of Timber Trusses"

Washers

Square or round washers of the following dimensions shall be used with all bolts:

1) Bolts up to 8mm diameter: Washers shall be minimum 25mm wide of minimum 2,50mm thickness

2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness

3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness

Metal connector plates

Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel

The steel shall have a minimum yield strength of 228MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be not less than 275g/m2 commercial class hot dipped galvanising as per SANS 934 before stamping

All connector plates shall have been tested by the CSIR and be of a size capable of transmitting the forces between members of a truss without exceeding the design values published in the CSIR report

Truss construction

Trusses shall be constructed in jigs specially designed to unsure the correct profile, overhangs and cambers

Where metal connector plates are used all joints are to be close fitted butt joints made by precision pressing of the metal connector plates into each side of the joint

Truss design

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

Truss spacing

The truss centres shall be less than or equal to that as described in this bill for each respective truss

Truss pitch

The truss pitch shall be as described in this bill for each respective truss type

Truss loading

Trusses shall be designed for a live load of 0,50kN/m2 and dead load as specified below

Shop drawings, design and erection guarantee certificates

It will be expected from the contractor to timeously prepare, submit and obtain the necessary approvals from the principal agent in respect of the required shop drawings, design and erection guarantee certificates as specified

Dimensions

All dimensions given in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences

Erection

All trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber roof Trusses" as published by the Institute for Timber Construction and the CSIR, or the SABS Code of Practice "The Design, Manufacture and Erection of Timber Roof Trusses", or as designed and detailed by the designer

Design system

The design system as documented in this bill is based on the "TRi design 3000" system and all references given in the descriptions are related to specific type of trusses based on this design system

However, the contractors is to note that any design system of similar quality may be used subject to the prior written approval of the principal agent

Both the design and guarantee for the prefabricated timber roof construction complete, (excluding battens and/or purlins) to be designed, constructed and delivered to site by an approved firm of specialists, under a written guarantee, which shall be lodged with the principal agent for approval before the work commence

Rates

Tendered rates to include for the complete roof construction, including the design of the roof construction, all timber of required grade and type shown on the design, all cutting and waste, cutting to the exact lengths and end angles to manufacture the respective truss type, supply of all connector plates, prefabrication of trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works (cost of girder trusses to include cost of required metal truss hangers), etc

Prices for trusses must also include for: 1. Unloading and storing under cover and protecting from the weather, or handing over to others for unloading and storing as required

2. Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing and holding down and connections supplied by the truss fabricator for use by: 2.1 themselves (when responsible for erection) 2.2 others (where applicable)

3. Such site supervision as deemed necessary by the fabricator of the trusses to ensure that all the erection details have been complied with to his satisfaction

Fixing of purlins

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

GENERAL CARPENTRY AND JOINERY

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

Particle board

Particle board shall comply with the following specifications: a) SANS 1300 Particle board: exterior and flooring type b) SANS 1301 Particle board: interior type

Decorative laminate finish

Decorative laminate finishes shall be glued under pressure

All edge strips shall be butt jointed at junctions with adjacent similar finish

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

ROOFS ETC

Plate nailed timber roof truss construction

Unless otherwise described, the following specifications will apply:

1. All trusses to be with a 26° pitch at approximately 750mm centres

	2 The dead load consists of 420 x 332mm "Marley Monarch Antique" tiles on 38 x 38mm purlins at approximately 320mm centres with either 4 - 9.5mm fibre-cement or plasterboard nailed-up ceilings on 38 x 38mm brandering at 450mm centres or 40mm thick suspended ceilings				
	Sawn softwood				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	41		0,00
	DOORS ETC				
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
3	40mm Framed and ledged batten door 910 x 2100mm high	No	4		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
4	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	3		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Finishes to ironmongery				
	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 SD Sanded				
	HINGES, BOLTS, ETC				

1	100mm Galvanised and welded loose pin hinges	No	6		0,00
2	50 x 25 LD polished barrel bolts	No	3		0,00
	HINGES, BOLTS, ETC				
3	50mm padlock	No	1		0,00
4	Bathroom lockset	No	4		0,00
5	Three-lever lockset	No	3		0,00
					0,00

SECTION NO. 5

BILL NO. 9

METALWORK

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Primer

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer All scratches, chips or blemishes to be made good on site after erection All rates tendered must make provision for this as no claim will afterwards be entertained.

Descriptions

No allowance has been made in the mass of steel for rolling margins, rivets, additional materials in welding, decorative or protective treatment nor constructional aids

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete

Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Welded joints and intersections

Prices of continuous rails shall include for welded joints in the length and prices of instersections shall include all cutting, mitring, scribing, shaping, etc

Bends, knees, ramps and the like to continuous rails shall be forged and rounded to approved radii

	Prices for balustrades, burglar guards and the like shall include for framed and welded joints at instersections				
	Screws and bolts				
	Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless described otherwise, be used for srewing items items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium				
	Items fixed to adjoining metalwork with rivets, self-tapping screws, machine screws, etc shall include all necessary drillings				
	Where bolting is specified, projecting shank ends of bolts shall be cut off flush and left smooth				
	Door frames				
	Unless otherwise described, the following shall be applicable on all door frames: - Frames shall be double rebated suitable for 40mm thick doors				
	- One jamb of all frames for single doors shall be factory prepared for striking plate of mortice lock				
	- All frames shall be factory fitted with three washered butt hinges for each door				
	- All frames shall be treated with one coat factory applied metal primer complying with SANS Specification 909				
	Striking plates for door frames				
	Striking plates to be of chromium-plated type, unless otherwise described				
	Sealing of all abutments				
	All windows, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicon sealant along all joints and prices to allow therefore				
	STEEL GATES, SCREENS, ETC				
	GALVANISED STEEL GATES, SCREENS, ETC				
	Steel gates and frames				
1	Single gate and frame for opening 910 x 2 100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	3		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				

2	Frame for door 910 x 2100mm high	No	3		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	9		0,00
					0,00

SECTION NO. 5

BILL NO. 10

PLASTERING

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Preparatory work

Surfaces shall be clean and free from oil and thoroughly wetted directly before any plastering or other in-situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key

Finish

All coats of paving and plastering shall be executed in one operation without any blemishes

Granolithic

Granolithic shall be cured for at least seven days after laying Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid Granolithic shall be divided into panels not exceeding 6m2 with V-joints and deep trowel cuts

Granolithic to stairs shall include non-slip reedings to treads

Skirtings

Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square juntion with floor finish

Plaster

All plaster, other than skim plaster, shall not be less than 10mm and not more than 20mm thick

General

	Rates for plastering described as being on walls shall include concrete columns, beams and lintels flush with the face of the wall				
	Textured finishes				
	All textured finishes are to be applied to the satisfaction of the principal agent and executed by an approved firm of specialists, all strictly in accordance with the materials supplied and methods employed by the manufacturer				
	Preparatory work for textured finishes				
	Textured finishes to be applied to surfaces as described. Rates tendered are to include for all necessary priming, preparatory work, etc				
	All surfaces are to be inspected and approved by the principal agent prior any work is commenced				
	GRANOLITHIC				
	Untinted granolithic steel trowelled on concrete				
1	35mm Thick on floors and landings	m^2	39		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	153		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Regulations				
	All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work on this contract				
	Prices				
	Prices must include for arranging joints at convenient points, embedding in concrete of for rough cutting around brickwork as the work proceeds				

No distinction has been made between pipes chased in walls, fixed in ceilings, roofs, floors, columns, slabs, etc or for different finishes to these elements and has been described as "pipes".

Prices shall therefore include for all holderbats, brackets, clips, bands, etc and building in or chasing of same, holes through brickwork, concrete, etc and for making good facings, plaster, granolithic and other in-situ finishes as necessary

Prices to fixing of sanitary fittings etc shall include for setting up and fixing in position as described, joints to soil, waste and supply pipes as the case may be, making good finishes around and for protecting fittings from injury during subsequent building operations

Excavations

Prices for all excavations must include for necessary staging and for the risk of collapse of excavation side and also keeping excavations free from water

Laying, backfilling, bedding, etc. of pipes

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

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

Compacting

Filling for all types of pipes described as "under solid floors, etc." shall be done with approved backfilling and compacted to 93% Mod. AASHTO density, unless otherwise described

uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed

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 wall half hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bend 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" or similar and approved type. Capillary solder fittings shall comply with ISO 2016

Galvanised steel pipes and fittings

Galvanised steel pipes are to be "Tosa" or similar and approved medium class to SANS 62 and fittings are to be manufactured by "Tupy" or similar and approved

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level

Disinfection of water pipework

All pipework is to be disinfected in accordance with SANS 1200L

Reducing fittings

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

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

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

Stainless steel used for the manufacturing of urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be type 304 (18/8)

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

Flush pans

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

Sealing of abutments

All sanitary fittings abutting walls, tiled surfaces, vanity slabs, work tops, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

Waste unions

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

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Exposed concrete surfaces

	Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster				
	Testing				
	Descriptions for the testing of plumbing and drainage installations shall be deemed to cater for all testing apparatus, labour, etc. and shall be done strictly as directed by and in accordance to the Principal Agent's instructions, including for re-testing after taking out and making good all defective work to his entire satisfaction				
	As-built drawings				
	Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	"Marley Streamline" uPVC				
1	110mm Half-round roof gutters	m	23		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	4		0,00
8	"ATLAS" VIP 200 Code 222 AP C/W or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	4		0,00
9	320 x 350mm Type 490mm curved bowl urinal fitted with waterless urinal cold water fittings, and mounted with brackets on wall	No	2		0,00
	WASTE UNIONS ETC				
	"Cobra Watertech"				
10	32mm chromium plated basin waste union	No	4		0,00
	TRAPS ETC				
	"Marley"				
11	50mm Rubber "P" or "S" trap	No	4		0,00

	TAPS, VALVES, ETC				
	Brass				
12	15mm Brass hose bib-tap	No	4		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
13	50mm Pipes	m	15		0,00
14	110mm Vent pipes fixed to brickwork	m	12		0,00
	Extra over PVC-U soil and vent pipes for fittings				
15	50mm Bend	No	12		0,00
16	50mm Junction	No	4		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
17	15mm Pipes	m	15		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
18	15mm Fittings	No	18		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 12				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m^2	m^2	2		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				

	6mm Silvered float glass ("GG" Quality) copper backed mirrors with rounded polished edges holed for and fixed on 6mm hardboard backing with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	4		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 13				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Descriptions of painting shall be deemed to include complete preparation of new as well as existing surfaces, including patching and filling, sanding and primer on nail and screw heads Descriptions of painting on pipes, gutters, etc shall be deemed to include painting on holder bats, hangers, clips, clamps, etc Descriptions of painting on windows, frames, etc shall be deemed to include primer in rebates of sashes to be glazed				
	PAINTWORK, ETC TO NEW WORK				
	ON FLOATED PLASTER				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	153		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	12		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	5		0,00
4	Windows	m^2	3		0,00

5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	11		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	31		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00
8	Ironmongery				0,00
9	Metalwork				0,00
10	Plastering				0,00
11	Plumbing and drainage				0,00
12	Glazing				0,00
13	Paintwork				0,00
					0,00
	SECTION NO. 6				
	BILL NO. 1				
	GENERAL SITE WORKS, ETC (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 3				
	The Contractor is referred to the previous Section 2 for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this Bill, unless specifically otherwise described				
	General				

The Contractor shall carry out the work with as little mess and noise possible and with a minimum of disturbance to the occupants. The Contractor shall provide proper protection and provide and erect any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent, and remove when directed

Site clearance

All rubble, rubbish, vegetable soil, shrubs, bush, trees, etc. shall be removed from the whole area and carted away off the construction site to a suitable dumping site, which has to be located by the Contractor, all to the full satisfaction of the Principal Agent

Filling (General)

It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the Principal Agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G6 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescibed percentage Mod AASHTO density

CBR and indicator tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

The Contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the Principal Agent prior commencement of any placement thereof and/or filling done therewith

Density tests

It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling to form building platforms, etc: 1 Test per 200m^2 plan area p each 150mm thick layer

Results of density tests executed are to be submitted to and approval obtained from the Principal Agent prior commencement of any subsequent fill layers and/or other work

Keeping excavations free from water:

No separate provision has been made in this Bill for measurement and payment for bailing, pumping or otherwise keeping excavations free from water during the construction process of the work measured in this Bill

Therefore, tenderers are to note that their tendered rates are to cater for the above-mentioned as no claims arising out of their failure to do so will afterwards be entertained

Carting away of excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall, unless specifically otherwise described, be deemed to include the loading and hauling of excessive or unsuitable excavated material to a suitable dumping site, which has to be located by the Contractor, off the construction site

The location of the intended dumping site will be subjected to the prior written approval of the Principal Agent

The Contractor shall also be liable to, upon completion, to rehabilitate all areas of the site which was disturbed during the construction phase due to construction activities, temporarily dumping/spoiling of excavated material, etc. It will be required from the Contractor to grade such areas to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the Principal Agent

Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained

Relevant SANS 1200 Specifications

The following relevant SANS 1200 Specifications shall be regarded applicable:

- Earth mattresses, building platforms, etc: SANS 1200 AA General (Small Works) SANS 1200 C Site clearance SANS 1200 DE Earthworks (Small works) SANS 1200 ME Sub-base SANS 1200 MFBase

All work related to the above-mentioned elements shall be done with materials specified and in according to methods prescribed by the relevant SANS 1200 referred to

SANS 1200 Specification (General)

The SANS 1200 Specifications as referred to above were drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on work scheduled hereunder for this project

All the specifications referred to above, although not issued with these Bills of Quantities, shall be deemed to form part of this document and shall be considered as applying to the performance of work to be completed in terms of this Section

The Contractor shall obtain a copies of the said specifications from the South African Bureau of Standards and be kept on site at all times

	Measurement and payment				
	Measurement and payment clauses as described in the above-mentioned SANS 1200 Specifications shall not apply to the work as set out in this Bill				
	EARTHWORKS				
	GENERAL SITE CLEARANCE ETC				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc	m^2	438		0,00
2	Stripping average 150mm thick layer of top soil and stockpiling on site	m^2	438		0,00
	BULK EXCAVATION, FILLING, ETC				
	Open face excavation over sloping site				
3	Open face excavation to form platforms and embankments and stockpiling on site	m^3	438		0,00
	Extra over bulk excavation in earth for excavation in				
4	Soft rock	m^3	44		0,00
5	Hard rock	m^3	22		0,00
	Extra over all excavations for carting away				
6	Extra over all excavations for carting away surplus material from excavations and/or stockpile on site to a dumping site to be located by the contractor	m^3	438		0,00
	Compaction of surfaces				
7	Compaction of ground surfaces under pavings etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m^2	438		0,00
	Keeping excavations free of water				
8	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING				
	Earth filling obtained from the excavations including haulage approximately 2Km from perimeter of excavations (not compacted)				
9	In prescribed stock piles on site	m^3	438		0,00
	Earth filling (G7 material) obtained and supplied by the contractor from commercial sources or borrow pits including haulage of 10km from perimeter of site , and compacted to 93% Modified AASHTO density				

10	Sub-base to from platforms and embankments	m^3	219		0,00
11	Base course of G5 natural gravel material, compacted to 95% Mod AASHTO density	m^3	219		0,00
	Additional tests required by the principal agent				
12	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	2		0,00
13	CBR test in accordance with method A8 of TMH1	No	2		0,00
14	UCS test in accordance with method A14 of TMH1	No	2		0,00
	STORMWATER DRAINAGE				
	(HAYLETT FORMULA WORK GROUP No. 146)				
	Mass concrete with a coarse aggregate of 19mm and a minimum compressive strength of 20MPa at 28 days				
15	V-shaped channel size 600mm wide x 300mm thick with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls in panels not exceeding 2m long with 12mm polystyrene movement joints with exposed edges raked out for a depth of 25mm and filled with bituminous compound including all necessary excavation and formwork	m	110		0,00
16	Extra over for fair stopped end	No	12		0,00
17	Extra over for T-intersection	No	8		0,00
	SOIL DRAINAGE				
	uPVC Class 6 pipes as drain pipes with couplings				
18	110mm Pipes	m	40		0,00
	WATER RETICULATION				
	Supply, Lay and bed uPVC pipe complete: (The rate shall exclude disinfection of pipes after completion of hydraulic pipe test)				
19	20mm Dia uPVC pipe class 6	m	40		0,00
	Fittings and specials - uPVC bends(Extra-over rate to items 3.1.1 to 3.1.6)				
20	20mm bend	No	45		0,00
21	20mm Tees	No	20		0,00
22	20 x 15mm Reducer	No	12		0,00
	TESTING				
23	Supply all the necessary apparatus, water etc. for and test the soil drainage and water supply systems to the satisfaction of the Representative/Agent and the Local Authority, rectify all defective work free of charge and leave in perfect order	Item	1		0,00
	THE FOLLOWING IN PLINTH CONSTRUCTION				

	WATER TANK PLINTH, ETC.				
	Excavation in earth not exceeding 2m deep				
24	Trenches	m^3	8		0,00
	Extra over all excavations for carting away				
25	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the Contractor	m^3	8		0,00
	Risk of collapse of excavations				
26	Sides of trench and hole excavations not exceeding 1,5m deep	m^2	36		0,00
	G7 filling obtained from excavations compacted to 95% Mod AASHTO density				
27	Under floors, steps, pavings, etc	m^3	11		0,00
	SOIL POISONING				
	Soil insectiside				
28	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	24		0,00
29	To bottoms and sides of trenches	m^2	63		0,00
	25MPa/19mm Unreinforced concrete cast against excavated surfaces				
30	Strip footings	m^3	3		0,00
	REINFORCED CONCRETE				
	25MPa/19mm concrete				
31	Surface beds on waterproofing	m^3	5		0,00
	TEST BLOCKS				
32	Making and testing 150 x 150 x 150mm concrete strenght test cube (Provisional)	No	5		0,00
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
33	Aprons, slabs, etc to falls	m^2	24		0,00
	Fabric reinforcement				
34	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m^2	24		0,00
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
35	Under surface beds	m^2	24		0,00

	(CPAP formula work group no. 116)				
	Brickwork of NFP bricks in class II mortar				
36	One brick walls	m^2	30		0,00
	Brickwork reinforcement				
37	150mm Wide reinforcement built in horizontally	m	85		0,00
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
38	Extra over brickwork for face brickwork	m^2	24		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
39	Coping on top of one brick wall	m	40		0,00
	Disinfecting				
40	Disinfecting water pipe and tank system	Item	1		0,00
	HDPE polyethelene Class 12 piping with 'Plasson' or other approved fittings				
41	32mm pipe and excavations not exceeding 1m deep	m	30		0,00
	Water storage tanks shall carry a minimum 8 year manufacturer guarantee, which certificate shall be handed over to the Client upon practical completion				
42	PVC Rainwater harvesting 5000 litre water tank, complete with vermin proof lid, inlets, outlets, etc. and anchored down with and including 4mm diameter galvanised mild steel wire loop double and fixed to top of tank with 15mm diameter rubber hose as sleeve, and anchored to top of concrete plinth with and including 4No. Y10 high tensile steel reinforcement rods cast into concrete plinth	No	3		0,00
	CONSTRUCTION OF WALKWAYS				
	SITE CLEARANCE				
	Site clearance				
43	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	165		0,00
	EXCAVATION, FILLING, ETC				
	Compaction of surfaces				
44	Rip up, scarify and compact of ground surfaces under floors etc., including scarifying for a depth of 150mm, breaking down over size material, adding suitable material where necessary and compacting to 93% MOD AASHTO density	m^2	165		0,00
	Protection against termites, ants, etc				

45	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	165		0,00
	FILLING, ETC.				
	Earth filling supplied by the contractor for complete site under building surfaces, parking areas, roadways, etc				
46	Sub-base import filling of G5 material	m^3	83		0,00
47	Base import filling of C4 material	m^3	83		0,00
48	Selected import filling of 7% soilcrete material	m^3	10		0,00
	DAMP PROOFING OF WALLS AND FLOORS				
	One layer of 250 micron "USB Green" or similar approved dampproof membrane sealed at laps with PVC self -adhesive tape				
49	Under surface beds.	m^2	165		0,00
	PAVING				
	60mm Thick interlocking paving blocks, in accordance with SANS 1058 laid on and including 20mm thick river sand compacted bedding layer with joints filled in with sand, compacted with a vibration compactor, laid in a herringbone pattern				
50	Paving including 50mm thick sand	m^2	165		0,00
51	Fair raking cutting	m	220		0,00
	PRECAST CONCRETE KERBS, ETC				
	Supply lay and joint concrete kerbing, Fig 6 Kerbs to SANS 927- 25 MPa strength precast concrete including 20/19mm MPa in-situ concrete haunching				
52	Straights and curves over 10 m radius	m	220		0,00
	Supply lay and joint concrete kerbing, Fig 7 semi mounted Kerbs to SANS 927- 25 MPa strength precast concrete including 15MPa/19mm insitu concrete haunching				
53	Straights and curves over 10 m radius	m	20		0,00
	RETAINING WALLS ETC (ALL TRADES)				
	PREAMBLES				
	For Preambles refer to the Standard Preambles to All Trades - WB20 - and the Supplementary Preambles SUP1 to SUP5 and any amplification/s stated hereunder				
	_____				
	(CPAP WORK GROUP NO. 104) unless otherwise stated				
	EXCAVATIONS ETC				
54	Excavate in earth not exceeding 2m deep for trenches	m^3	16		0,00

55	Carting away surplus material from excavations and/or stock piles on site to a dumping site located by the contractor	m^3	16		0,00
56	Risk of collapse to sides of trench excavations not exceeding 1.5m deep	m^2	54		0,00
57	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	25MPa/19mm Unreinforced concrete cast against excavated surfaces				
58	Strip footings	m^3	8		0,00
	INTERLOCKING PLANTER BLOCKS				
	"Loffelstein TB 300 or equal approved"precast concrete interlocking planter blocks finished smooth on exposed surfaces				
59	Retaining structures with stepped face and curves set on 700x400mm high concrete base, set as required to suit slope as per detail. 300x 460x170mm high type "L300" Loffelstein interlocking retaining blocks laid in FLOWNET "KAYMAT" U14 GEOFABRIC or similar approved with horizontal bed joints to 65 degree slope, including 100mm Diameter NETLON (Geo) pipe, 40-75mm loose stone and an average of 600mm thick earth filling compacted to 90% MOD. AASHTO behind the blocks and fill the blocks with garden soil lightly tampered as the work proceeds as per engineers drawing.	m^2	81		0,00
	(CPAP WORK GROUP NO. 136) unless otherwise stated				
	GALVANISED MILD STEEL BALUSTRADES				
	"Steel studio" or equal approved horizontal rail system installed complete as per specialist.				
60	Three horizontal rail galvanised balustrade system 1000mm high above the retaining wall where the retaining wall reaches its highest point. Handrail to be 48,3 x 2mm DIA. galvanised mid steel hollow section pin mounted on galvanised mild steel balustrade, Extension rod to be 10mm DIA. mild steel rods, 48,3mm DIA. galvanised mild steel hollow sections Baluster with pre-drilled holes for horizontal rods to run through baluster. 40mm DIA. Hollow section horizontal rails and galvanised mild steel or aluminium cover plate 70mm DIA. Purpose made cover plate to cover core-drilled provision in wall at the base of the baluster as per the architect's details.	m	45		0,00
	(CPAP WORK GROUP NO. 146) unless otherwise stated				
	Drainage uPVC pipes				
61	50mm Diameter uPVC weep pipes 250mm long built through one brickwall	No	6		0,00
					0,00
	SECTION NO. 7				
	BILL NO. 1				
	PROVISIONAL SUMS				

	Provisional sums will only be used with the prior approval of the Development Bank of Southern Africa				
	NOTES:				
	1. The Contractor's attention is drawn specifically to the Principal Building Agreement Clause 20.0 (Nominated Sub-Contractors), Clause 21.0 (Selected Sub-Contractors) and Clause 22 (Work by Others) and to the related Clauses in Section 1, Bill No. 1 - Preliminaries				
	2. The Contractor's attention is drawn also to the definition of attendance on Nominated or Selected Sub-Contractors and of fuel, power and water for commissioning of mechanical and other specialised installations given in the JBCC Preliminaries				
	3. Where special attendance includes the provision of hoisting facilities for a Sub-Contractor then the Contractor shall:-				
	* Ensure that the capacities of his hoisting equipment are sufficient to deal with the masses and the quantities of the items to be hoisted,				
	* Schedule the times of availability of the hoisting equipment for each Sub-Contractor,				
	Provide all necessary personnel to operate the hoisting equipment,				
	all to enable the Sub-Contractor to execute the hoisting or lowering of his material, etc. using the facilities provided by the Contractor				
	4. Under no circumstances may any Provisional Amount, etc. be extended at an amount lower than the amount given in this Bill				
	All the provisional sums cover supply of material and equipment and installation where applicable by firms of specialists.				
	Provisional sums are net and do not include builder's discount, but the Tenderer may allow under "Profit" items any profit he considers necessary.				
	The Tenderer is referred to Clause 87.1 and 87.2 in the "Preliminaries" section for the definition and adjustment of "General Attendance".				
	COMMUNITY LIAISON OFFICER				
1	Provide the amount of R40 000,00 (Forty Thousand Rands@ R10,000.00/month) for the appointment of Community Liaison Officer	Item	1		0,00
2	Allow for profit and attendance	%IT	10%		0,00
					0,00
	SECTION NO. 8				
	BILL NO. 1				
	OCCUPATIONAL HEALTH AND SAFETY				

	CONSTRUCTION SITE MANDATORY SIGNAGES				
1	Project sign Board	No	1		0,00
2	Construction site mandatory safety information board	No	1		0,00
3	Crucial responsible persons board	No	2		0,00
4	First aid kit location and first aider information	No	1		0,00
5	Emergency assembly point signs	No	1		0,00
6	Running man and direction arrows signs	No	10		0,00
7	Designated Smoking Area signs	No	2		0,00
8	No smoking & vaping	No	5		0,00
9	Urinating Caution	No	4		0,00
10	Ladies Toilet signs	No	1		0,00
11	Gents toilet signs	No	1		0,00
12	Eating Area signs	No	1		0,00
13	Storeroom signs	No	1		0,00
14	flammable liquids signs	No	1		0,00
15	Fire extinguisher and direction arrow	No	5		0,00
16	Emergency telephone list	No	3		0,00
17	Site Office signs	No	1		0,00
18	Guard room signs	No	1		0,00
19	Visitors signs	No	1		0,00
20	Laydown area signs	No	1		0,00
21	Waste disposal Area signs	No	1		0,00
22	Hazardous waste signs	No	1		0,00
23	Asbestos waste removal signs	No	1		0,00
24	Asbestos removal in progress signs	No	1		0,00
25	Excavation in progress signs	No	4		0,00
26	Demolition work in progress signs	No	2		0,00
27	Falling object risk signs	No	2		0,00
28	Scaffolding tag (green)	No	4		0,00
29	Scaffold Tag (red)	No	4		0,00
30	Safe Drinking water	No	2		0,00

31	Unsafe water	No	2		0,00
32	Place rubbish in bins	No	2		0,00
33	OHS charts	No	4		0,00
34	Fire extinguisher types	No	4		0,00
35	Air horn	No	2		0,00
36	Site rules	No	2		0,00
37	PPE caution	No	2		0,00
38	Emergency evacuation procedures	No	2		0,00
39	Emergency evacuation plan	No	2		0,00
40	welding area	No	1		0,00
41	Welding caution	No	1		0,00
42	20 litre safe drinking water and containers	No	1		0,00
43	soap hand washing station	No	2		0,00
44	Dewatering pits and ponding areas	No	2		0,00
45	Rehabilitation of site	No	2		0,00
46	she bins in female ablutions	No	2		0,00
47	safety & Educational charts	No	3		0,00
48	condoms	Item	1		0,00
49	servicing and maintaining male and female ablutions	Item	1		0,00
	CONSTRUCTION SITE FACILITIES, STORAGE AND EQUIPMENT				
50	Guard house	No	1		0,00
51	Rental of site office (container)	Item	1		0,00
52	Rental of Stores with shelving (container)	Item	1		0,00
53	Portable toilets x2	Item	1		0,00
54	Portable shower x2	Item	1		0,00
55	Eating area including seats	No	1		0,00
56	Male and Female changing facility	No	1		0,00
57	Notice board	No	1		0,00
58	Drinking water supply	No	1		0,00
59	Flammable liquid storage	No	1		0,00
60	Waste storage and waste bins	No	5		0,00

61	Shade cloth on GMS game fence on 80mm timber poles	Item	1		0,00
62	Laydown area barricading net	Item	1		0,00
63	First aid kit	No	1		0,00
64	Portable siren	No	1		0,00
65	Fire extinguisher	No	1		0,00
66	Breathalyser	No	1		0,00
67	Excavation barricading material	Item	1		0,00
	VISITOR'S PPE				
68	Hard Hat	No	10		0,00
69	Safety Vest	No	10		0,00
	SITE MANAGEMENT PPE				
70	Hard Hat	No	10		0,00
71	Safety Vest	No	10		0,00
72	Safety Shoes	No	10		0,00
	EMPLOYEE'S PPE				
73	Hard Hat	No	10		0,00
74	Safety Spectacle	No	10		0,00
75	Dust Mask	No	4		0,00
76	Ear Plug	No	1		0,00
77	Safety Shoes	No	10		0,00
78	Safety Vest	No	10		0,00
79	Overall – Reflective	No	10		0,00
80	Gloves – Chemical	No	2		0,00
81	Gloves – Hot Work	No	5		0,00
82	Gloves – Light Duty	No	6		0,00
83	Safety Harness	Item	1		0,00
84	Lifeline Kit	Item	1		0,00
85	Spill Kit	Item	1		0,00
86	Hand soap	Item	1		0,00
87	Soap dispenser	No	1		0,00
88	Toilet paper	Item	1		0,00

89	Condoms	Item	1		0,00
	ASBESTOS REMOVAL PPE				
90	Hard hat	Item	0		0,00
91	Full face mask	Item	0		0,00
92	Mask cartridge	Item	0		0,00
93	Waste bags	Item	0		0,00
94	Disposable Gloves	Item	0		0,00
95	Shoe cover	Item	0		0,00
96	Coverall	Item	0		0,00
	WELDER'S PPE				
97	Welding hood	No	2		0,00
98	Welding helmet	No	2		0,00
99	Safety Spectacle	No	2		0,00
100	Mask	No	0		0,00
101	Welding gloves	No	2		0,00
102	Welding boots	No	0		0,00
103	Welding spats	No	0		0,00
104	Welding long sleeve apron	No	0		0,00
105	Welding overall	No	0		0,00
	TRAININGS				
106	Allow for HIV/AIDS awareness and Implementation programmes Item	Item	1		0,00
107	Legal Liability	Item	1		0,00
108	OHS and Regulations	Item	1		0,00
109	Working at heights	Item	1		0,00
110	Material Handling	Item	1		0,00
111	Stacking and Storage	Item	1		0,00
112	Housekeeping	Item	1		0,00
113	Hand Tools	Item	1		0,00
114	Power Tools	Item	1		0,00

115	Allow for all compulsory health and safety awareness programme (e.g. Inductions, daily task instruction, toolbox Talks, Safety Promotions, Risk Assessment, First Aid, Fire Fighting, Work at heights, H&S related training, Legal Liability/SHE Representative)	Item	1		0,00
116	Noise Induced Hearing Loss	Item	1		0,00
117	Permit to Work (Hot work etc.)	Item	1		0,00
118	Emergency Evacuation, Preparedness & Response	Item	1		0,00
					0,00
	SECTION NO. 9				
	BILL NO. 1				
	EXPANDED PUBLIC WORKS PROGRAMME				
	PREAMBLES				
	Tenderers are advised to study the additional specification SL: Employment and training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Progress: National Labour Service as bound elsewhere in the bills of Quantities and then price bill accordingly TRAINING OF LABOURER WORKERS				
	(TARGET: 4 LABOURER WORKERS) Skills development and Technical training				
1	Skills development and technical training for labourer workers for an average of 10 days (ref. SL 11.01.02)	SUM	1		0,00
	TRAVELLING AND ACCOMMODATION DURING OFF SITE TRAINING:				
	Life skills training for 26 days (ref.SL 11.02.01)				
2	Travelling (based on 50km/labourer worker)	Item	0		0,00
3	Profit and attendance on items 1 & 2	Item	0		0,00
	EMPLOYMENT OF LABOURER WORKERS				
4	Employment of labour workers (4 labourers) (90days)	SUM	0		
	The unit of measurement shall be the number of labourer workers at the statutory labour rates of R275/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of labourer workers and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 10 months appointment for labourer workers PROVISION OF EPWP DESIGNED OVERALLS TO LABOURER AND INTERNSHIP WORKERS				
5	Supply EPWP designed overalls to labourers and intership workers (ref. SL 11.05.01) for 16 workers	Item	0		0,00
6	Profit and attendance on items 4 and 5 (ref. SL 11.05.02)	Item	0		0,00
	PROVISION OF WORKING EQUIPMENTS FOR LABOURERS INCLUDING INTERNSHIP STUDENTS				

7	Supply of working equipments to labourer workers. Specification to be supplied by the EPWP-NLS Serviced Provider for the respective trades (ref. SL 11.06.02)	Item	0		0,00
8	Profit and attendance on item 6 (ref. SL 11.05.02)	Item	0		0,00
					0,00
1	PRELIMINARIES				0,00
2	DEMOLITIONS				0,00
3	TOILET TYPE 6B				0,00
4	TOILET TYPE 6G				0,00
5	TOILET TYPE 3M2F1D				0,00
6	GENERAL SITE WORKS				0,00
7	PROVISIONAL SUMS				0,00
8	OCCUPATIONAL HEALTH AND SAFETY				0,00
9	EXPANDED PUBLIC WORKS PROGRAMME				0,00
	Sub- Total	ST	0		0,00
	CONTINGENCY ALLOWANCE TO THE CONTRACT				
	Allow 10% for contingencies of sub-total (A) to be used as directed by the Principal Agent and deducted in whole or in part if not required	TAX	10%	0,00	0,00
	Sub- Total	ST	0		0,00
	ADD VAT @15%. RATE#	TAX	15%	0,00	0,00
	TOTAL CARRIED TO FORM OF OFFER				0,00

ITEM NO		QUANTITY	RATE	AMOUNT
	Bills of Quantities for ERADICATION OF PIT LATRINES IN KWAZULU-NATAL PROVINCE FOR THE INDEPENDENT DEVELOPMENT TRUST NAMAKAZI PRIMARY SCHOOL			
	SECTION NO. 1			
	BILL NO.1			
	PRELIMINARIES AND GENERAL			
	BUILDING AGREEMENT AND PRELIMINARIES			
	The JBCC principal BUilding Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described			
	The JBCC Principal Building Agreement Contract Data form an integral part of this agreement			
	The ASAQS Preliminaries (November 2007 edition) published by the Association of South African Quantity Surveyors for use with the said JBCC Principal Building Agreement shall be deemed to be incorporated in these bills of quantities			
	The JBCC General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the JBCC Principal Building Agreement (Edition 6.2) shall be deemed to be incorporated in project specific preliminaries, amended as hereinafter described			
	The Preliminaries for use with the JBCC Series 2000 Principal Building Agreement (July 2007 edition) prepared by the Joint Building Contracts Committee, shall be deemed to be incorporated in these bills of quantities			
	The contractor is deemed to have referred to the above mentioned documents for the full intent and meaning of each clause			
	The relevant clauses in the above mentioned documents are hereinafter referred to by clause number and heading only			
	Where standard clauses or alternatives are not entirely applicable to this agreement such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the above mentioned documents			
	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 and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained			

	Supplementary preambles and/or specifications are incorporated in this Project specific preliminaries to satisfy the requirements of this project. Such supplementary preambles shall take precedence over the provisions of the General Preambles The contractor's prices for all items throughout these bills of quantities must take account of and include for all of the obligations, requirements and specifications given in the said Model Preambles and in any supplementary preambles **PRICING OF PRELIMINARIES** Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable") If Alternative A as set out in clause C 4.0 hereinafter is to be used for the adjustment of the preliminaries each item price is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time. Should the contractor select Option A in terms of Contract Data - Contractor to Employer (CE) for the purpose of adjustment of these preliminaries, the amount entered into the amount column in these preliminaries is to be divided into one or more of the three categories provided namely Fixed (F), Value Related (V) and Time Related (T) Should Option A, as set out in clause B10.3.1 hereinafter be used for the adjustment of preliminaries then each item priced is to be allocated to one or more of the three categories Fixed, Value Related or Time Related and the respective amounts entered in the spaces provided under each item Items not priced in these Preliminaries shall be deemed to be included elsewhere in these Bills of Quantities				
	SECTION A - PRINCIPAL BUILDING AGREEMENT				
	Interpretation				
1	Clause 1.0 - Definitions and interpretationF:..... V:..... T:.....	Item	1		0,00
2	Clause 2.0 - Law, regulations and notices F:..... V:.....T:.....	Item	0		0,00
3	Clause 3.0 - Offer and acceptance F:..... V:..... T:.....	Item	0		0,00
4	Clause 4.0 - Cession and assignment F:..... V:..... T:.....	Item	0		0,00
5	Clause 5.0 - Documents F:..... V:..... T:.....	Item	0		0,00
6	Clause 6.0 - Employer's agents F:..... V:..... T:.....	Item	0		0,00

	The principal agent shall:-monitor and control progress and scheduling-monitor all contract conditions, and-coordinate the efforts of the employer's agents, the contractor and subcontractorsThe powers conferred on the principal agent in terms of this clause and/or the exercising of these powers shall not be construed as removing or diminishing any of the obligations of the Contractor in terms of the Principal Building Agreement, whether financial, contractual or otherwise, nor shall the exercising of these powers create any privity of contract as between the Employer or his agents on the one part and the Contractor or subcontractors or suppliers on the other part The principal agent reserves the right to attend and participate in all contractor/subcontractor's meetings, to invite other employer's agents to attend such meetings at his discretion and to converse and chair any such meetings if the contractor is derelict in his duty in arranging such meetings to the degree of frequency and comprehensiveness dictated in the opinion of the project manager by the circumstances and exigencies of the construction process				
7	Clause 7.0 - Design responsibility F:..... V:..... T:.....	Item	0		0,00
	Insurances and Securities				
8	Clause 8.0 - Works riskF:..... V:..... T:.....	Item	0		0,00
9	Clause 9.0 - Indemnities F:..... V:..... T:.....	Item	0		0,00
10	Clause 10.0 - Insurances F:..... V:.....T:.....	Item	0		0,00
11	Clause 11.0 - Securities F:..... V:..... T:.....	Item	0		0,00
	Execution				
12	Clause 12.0 - Obligations of the parties F:..... V:..... T:.....	Item	0		0,00
13	Clause 13.0 - Setting out 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. F: ..... V:.....T:.....	Item	0		0,00
14	Clause 14.0 - Nominated subcontractors F:..... V:..... T:.....	Item	0		0,00
15	Clause 15.0 - Selected subcontractors Written proof is required from subcontract tenderers at tendering that they can meet the JBCC Selected Subcontract Agreement or other tender agreements and provide security in terms of the agreement. If the above is not provided the tender may not be accepted All amounts allowed under Provisional Amounts are intended to be awarded to Selected Subcontractors F:..... V:..... T:.....	Item	0		0,00

16	Clause 16.0 - Direct contractors F:..... V:..... T:.....	Item	0		0,00
17	Clause 17.0 - Contract instructions F:..... V:..... T:.....	Item	0		0,00
	Completion				
18	Clause 18.0 - Interim completion = n/s subcontract agreement F:..... V:..... T:.....	Item	0		0,00
19	Clause 19.0 - Practical completion F:..... V:..... T:.....	Item	0		0,00
20	Clause 20.0 - Completion in sections F:..... V:..... T:.....	Item	0		0,00
21	Clause 21.0 - Defects liability period and final completion F:..... V:..... T:.....	Item	0		0,00
22	Clause 22.0 - Latent defects liability period F:..... V:..... T:.....	Item	0		0,00
23	Clause 23.0 - Revision of date for practical completion F:..... V:..... T:.....	Item	0		0,00
24	Clause 24.0 - Penalty for late or non-completion F:..... V:..... T:.....	Item	0		0,00
25	Clause 19.0 - Temporary works and plantUser note?Insert details against this clause for any of the following where specifically required Subclause 19.1.1 - Enclosure of the works Subclause 19.1.2 - Office accommodation Clause 19.2 - Notice boardsF:..... V:..... T:.....	Item	0		0,00
26	Clause 23.0 - Contractor's domestic subcontractorsF:..... V:..... T:.....	Item	0		0,00
27	Clause 11.0 - Special insurances F:..... V:..... T:.....	Item	0		0,00
28	Clause 16.0 - Site and accessUser noteInsert details against this clause for any of the following where specifically required Clause 16.7 - Known services Clause 16.8 - Protection of trees F:..... V:..... T:.....	Item	0		0,00
29	Clause 6.0 - Contractor's site representative F:..... V:..... T:.....	Item	0		0,00
30	Clause 7.0 - Compliance with laws and regulations F:..... V:..... T:.....	Item	0		0,00
	Payment				
31	Clause 25.0 - Payment F:..... V:..... T:.....	Item	0		0,00
	Objective (A2)				

32	Clause 26.0 - Adjustment to the contract value and final account F:..... V:..... T:.....	Item	0		0,00
33	Clause 27.0 - Recovery of expense and or loss F:..... V:..... T:.....	Item	0		0,00
	Suspension and Termination				
34	Clause 28.0 - Suspension by the contractor F:..... V:..... T:.....	Item	0		0,00
35	Clause 29.0 - Termination F:..... V:..... T:.....	Item	0		0,00
	Dispute Resolution				
36	Clause 30.0 - Dispute resolution F:..... V:..... T:.....	Item	0		0,00
	Agreement				
37	No Clause	Item	0		0,00
	The agreement comprises the entire contract between the parties. No representations, terms, conditions or warranties not contained in this agreement shall be binding on the parties. No agreement or addendum varying, adding to, deleting or terminating this agreement including this clause shall be effective unless reduced to writing and signed by the duly authorised representatives of the parties. User note All information for this clause requires consultation with the contractor. The principal agent should not pre-select any of the alternatives available to the contractor				
38	Contractual agreement	Item	0		0,00
	The required information of the contracting parties and the amount of the accepted contract sum shall be inserted in the contractual agreement for signature of the agreement by the contracting parties				
	SECTION B - GENERAL PRELIMINARIES				
	Definitions and interpretation				
39	1.1 - Definitions F:..... V:..... T:.....	Item	0		0,00
40	1.2 - Interpretation F:..... V:..... T:.....	Item	0		0,00
	Documents				
41	2.1 - Checking of documents F:..... V:..... T:.....	Item	0		0,00
42	2.2 - Provisional bills of quantities N/A F:..... V:..... T:.....	Item	0		0,00
43	2.3 - Availability of construction information F:..... V:..... T:.....	Item	0		0,00

44	2.4 - Ordering of materials and goods F:..... V:..... T:.....	Item	0		0,00
	Previous work and adjoining properties				
45	3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item	0		0,00
46	3.2 - Previous work - defects F:..... V:..... T:.....	Item	0		0,00
47	3.3 - Inspection of adjoining properties F:..... V:..... T:.....	Item	0		0,00
	The site				
48	4.1 - Handover of site in stages F:..... V:..... T:.....	Item	0		0,00
49	4.2 - Enclosure of the works F:..... V:..... T:.....	Item	0		0,00
	The contractor shall provide, erect, alter as necessary, maintain, remove and make good on completion of the works suitable hoardings, complete with gantries, fans, safety screens, barriers, guard railing, access gates, covered gangways, steel sections at crane lifts, splayed corners, returned ends, etc as indicated on the drawings and as necessary for the enclosure of the works and the protection of the public, all to the satisfaction of the Representative/Agent and the Local Authority				
50	4.3 - Geotechnical and other investigations F:..... V:..... T:.....	Item	0		0,00
51	4.4 - Encroachments F:..... V:..... T:.....	Item	0		0,00
52	4.5 - Existing premises occupied F:..... V:..... T:.....	Item	0		0,00
53	4.6 - Services - Known F:..... V:..... T:.....	Item	0		0,00
	Management of contract				
54	5.1 Management of the works F:..... V:..... T:.....	Item	0		0,00
55	5.2 Progress meetings F:..... V:..... T:.....	Item	0		0,00
56	5.3 Technical meetings F:..... V:..... T:.....	Item	0		0,00
	Samples, shop drawings etc				
57	6.1 - Samples of materials F:..... V:..... T:.....	Item	0		0,00
58	6.2 - Workmanship samples F:..... V:..... T:.....	Item	0		0,00

59	6.3 - Shop drawings F:..... V:..... T:.....	Item	0		0,00
60	6.4 - Compliance with manufacturer's instructionsF:..... V:..... T:.....	Item	0		0,00
	Deposits and fees				
61	7.1 - Deposits and fees F:..... V:..... T:.....	Item	0		0,00
	Temporary services				
62	8.1 - Water F:..... V:..... T:.....	Item	0		0,00
63	8.2 - Electricity F:..... V:..... T:.....	Item	0		0,00
64	8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item	0		0,00
65	8.4 - Communication facilities F:..... V:..... T:.....	Item	0		0,00
	Prime cost amounts				
66	9.1 - Responsibility for prime cost amounts F:..... V:..... T:.....	Item	0		0,00
	Attendance on subcontractors				
67	10.1 - General attendance User note?General attendance is defined in the n/s subcontract agreementInsert details against this clause or where provisional sums are stated for any special attendance where specifically required for each n/s subcontractor separatelyF:..... V:..... T:.....	Item	0		0,00
68	10.2 - Special attendance User note?General attendance is defined in the n/s subcontract agreementInsert details against this clause or where provisional sums are stated for any special attendance where specifically required for each n/s subcontractor separatelyF:..... V:..... T:.....	Item	0		0,00
	General				
69	11.1 - Protection of the works F:..... V:..... T:.....	Item	0		0,00
70	11.2 - Protection/isolation of existing works and works occupied in sections F:..... V:..... T:.....	Item	0		0,00
71	11.3 - Security of the works F:..... V:..... T:.....	Item	0		0,00
72	11.4 - Notice before covering work F:..... V:..... T:.....	Item	0		0,00

73	11.5 - Disturbance F:..... V:..... T:.....	Item	0		0,00
74	11.6 - Environmental disturbance F:..... V:..... T:	Item	0		0,00
75	11.7 - Works cleaning and clearing F:..... V:..... T:.....	Item	0		0,00
76	11.8 - Vermin F:..... V:..... T:.....	Item	0		0,00
77	11.9 - Overhand work F:..... V:..... T:.....	Item	0		0,00
78	Clause 9.10 Enclosure of works F: ..... V: ..... T:	Item	0		0,00
79	Clause 9.11 Sheds F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain, and remove on completion of the works temporary sheds for the proper storage of materials				
80	11.10 Tenant installtions by direct contractors F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove on completion of the work an office for the exclusive use of the Representative/Agent, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board, and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times				
81	11.11 Advertising F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove if no longer required all plant and scaffolding necessary for the execution of the worksScaffolding will not be permitted to be erected from buildings on adjacent premises				
82	Clause 9.14 - Notice Board F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick all round outer edges and projecting 12mm from face of boarding and rounded on front edge The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines deep blue. All wording shall be inscribed in deep blue painted sans serif lettering Sub-contractor's individual boards will be allowed on the site subject to the written approval of the Representative/Agent				
83	Clause 9.10 Enclosure of works F: ..... V: ..... T:	Item	0		0,00
84	Sheds F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain, and remove on completion of the works temporary sheds for the proper storage of materials				

85	Office for the representative / agent F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove on completion of the work an office for the exclusive use of the Representative/Agent, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board, and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times				
86	Plant and Scaffolding F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove if no longer required all plant and scaffolding necessary for the execution of the works Scaffolding will not be permitted to be erected from buildings on adjacent premises				
87	Notice Board F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick all round outer edges and projecting 12mm from face of boarding and rounded on front edge The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines deep blue. All wording shall be inscribed in deep blue painted sans serif lettering Sub-contractor's individual boards will be allowed on the site subject to the written approval of the Representative/Agent				
	Schedule of variables				
	Information necessary for elections 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 no specific requirements are expected or that the clause is not relevant to this specific contract				
	- Provisional bills of quantities [clause 2.2] The quantities are provisional? No				
	- Availability of construction documentation [clause 2.3] Construction documentation is complete? Yes				
	- Previous work - dimensional accuracy [clause 3.1]				
	- Previous work - defects [clause 3.2]				
	- Inspection of adjoining properties [clause 3.3]				
	- Water [clause 8.1] Option A (by contractor) yes Option B (by employer - free of charge) no Option C (by employer - metered) no				
	- Electricity [clause 8.2] Option A (by contractor) yes Option B (by employer - free of charge) no Option C (by employer - metered) no				

	- Ablution and welfare facilities [clause 8.3] Option A (by contractor) yes Option B (by employer) no - Communication facilities [clause 8.4] Telephone yes Facsimile yes E-mail yes - Protection of the works [clause 11.1] - Protection/isolation of existing works and works occupied in sections [clause 11.2] Protection/isolation is required Yes - Disturbance [clause 11.5] - Environmental disturbance [clause 11.6] **SECTION C - SPECIFIC PRELIMINARIES** User note Selected examples of typical clauses are provided to indicate ways of describing such clauses. Users must delete, adapt or add to these examples to suit their particular circumstances				
88	Site instructions 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 F:..... V:..... T:.....	Item	0		0,00
89	Warranties for material and workmanship Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the firm supplying the materials and/or doing the work and shall deliver same to the principal agent on the certified completion of the contract. The warranty shall state that workmanship, materials and installation are warranteed for a specified 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 firm 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 construction of the building in which case the responsibility for replacement shall rest entirely with the contractor F:.....V:.....T:.....	Item	0		0,00
90	Co-operation of contractor for cost management 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 F:.....V:.....T:.....	Item	0		0,00

91	Propping of floors below 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 F:..... V:..... T:.....	Item	0		0,00
92	Testing of windows for watertightness 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 F:..... V:..... T:.....	Item	0		0,00
93	Testing of flat roof waterproofing for watertightness 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 36 hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofingF:..... V:..... T:.....	Item	0		0,00
	LABOUR DESK				
94	The contractor shall establish a labour desk on site with a dedicated office with and including a desk 2 chairs and electricity. From the labour desk (CLO), the contractor will appoint a dedicated community laison officer at a monthly gross remuneration as indicated, subject to all statury deductions. The community laison officer will be employed by and will report to the contractor, who will in turn forwad such reports to the Principal Agent. F:..... V:..... T:.....	Item	0		0,00
	HEALTH AND SAFETY ACT (Act 85 of 1993)				
95	Compliance with th Occupational Health and safety Act (Act 85 of 1993) and all relevant and applicable regulations, especially the Construction Health & Safety Act (Act 85 of 1993) (as amended) for the duration of the contract.	Item	0		0,00
96	Provision of OH & S plan prior to commencement of works as well as a full consolidated copy of such plan at the completion of construction work inclusive of a record of all drawings, designs, copies of statutory appointments, material used and other similarinformation concerning completed contract	Item	0		0,00
97	Implemetantion of Approved OHS plan for duration of contract, including daily/ weekly inspectios, monthly meeting, required audits, consolidated health and safety file, etc.	Item	0		0,00
98	Registration with compensation fund or approved / licenced compensation insurer.	Item	0		0,00
99	Fulltime competent employee of the contractor as safety construction supervisor and assistant safety construction supervisors for duration of contract.	Item	0		0,00
100	Health and safety training and induction requirements of all persons entering the site.	Item	0		0,00

	HIV AND AIDS POLICY				
101	Observation of all legislation, policies and by-laws regulating the "AIDS" endemic and "HIV" prevention, treatment and observation.	Item	0		0,00
	COMMUNITY DEVELOPMENT PROGRAMME				
	IDT' has taken a strategic decision to promote community development in line with it's SCM Policy. Based on the above tenderer must promote Supplier Development through involving Small Business Enterprises residing within the Municipal ward. Special reference is made to the contract Data section in terms of sub-contracting				
	The Employer shall determine the amount to be paid to the Enterprise Development Co-Ordinator for the Contract Participation Goal (CPG) on the contract and this amount shall be stated under the section Enterprise Development				
	The contractor shall be paid as follows: These are recommended rates, Client may change depending on the location of the project, complexity etc.				
102	Needs analysis and enterprise development plan per targeted enterprise	Item	0		0,00
103	Mentor and interim reporting per targeted enterprise, report will be required per quarter.	Item	0		0,00
104	Project completion report per targeted enterprise	Item	0		0,00
	SUMMARY OF CATEGORIES				
	Category : Fixed R..... Category : Value R..... Category : Time R.....				
					0,00
	SECTION NO. 2				
	BILL NO. 1				
	DEMOLITIONS				
	PREAMBLES				
	For preambles see " Specifications of materials and methods to be used PW371"				
	SUPPLEMENTARY PREAMBLES				

STRUCTURAL WORK TO BE DEMOLISHED: Where structures which support existing roof structures are to be demolished the contractor must provide temporary support until new supporting structures are in place. OLD MATERIALS TO BECOME THE PROPERTY OF THE CONTRACTOR: Old materials from alterations, except where described to be re-used or handed over, become the property of the contractor who must allow credit for same in the Final Summary. OLD MATERIALS TO BE CARTED AWAY: Old materials from the alteration, except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site. OLD MATERIALS NOT TO BE RE-USED: None of the old materials are to be used for new work except where specifically described being set aside for re-use. HANDING OVER OF MATERIALS: Where certain materials or articles from demolitions or articles are described as to be handed over by the Contractor to the Regional Representative or Representative/Agent, such materials or articles shall be properly stored by the contractor, until handing over thereof. The contractor must obtain an official receipt listing the contractor fails to submit the submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Department for the full replacement value thereof, which amount will be deducted from any monies due to the contractor. DEALING WITH HAZARDOUS MATERIALS All hazardous materials, e.g. Asbestos, etc. must be removed and disposed off site by a specialist firm as per government regulations and environmental laws. ALTERATIONS AND DEMOLISHING All works demolished or removed, surfaces shall be prepare to new.

Allow for the following requirements to the satisfaction of the Principal Agent

Existing structures In taking down and removing existing work, the utmost care shall be observed to prevent any structural or other damage to the adjoining buildings and the Contractor shall provide all shoring, needling, strutting, etc. to ensure the stability of all structures during the alteration work. Any damage, deforming and/or defaced to the structure and/or building as well as the rectification of same will be for the Contractor's account.

Existing Services Special care shall be exercised during the progress of the work to ensure that electrical installation, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Representative Agent if any disconnection or alterations become necessary. Any damage to such services shall be to the contractors account

Dust and noise The Contractor is to take all necessary precautions, to minimise noise levels and frequently watering of the works to minimise any nuisance from dust and to ensure the least interference with the general routine of the occupants and operation of the premises including all necessary labour, materials, etc. for so doing and

Disposal of debris The Contractor shall be responsible for the regular cleaning away all rubble, debris, rubbish, unusable materials, etc. as the work proceeds and for leaving the works in a clean and satisfactory state upon completion suitable for use and occupation, including all necessary labour, materials or plant, etc. for so doing

	Old materials Old materials from the alterations, except where described shall remain the property of the client. Old materials to be carted away Old materials from the alterations, except where described to be re-used or handed over, as well as all rubbish, etc. must regularly be carted away from site and not be allowed to accumulate on or around the site. Handing over of materials Where certain materials or articles from demolitions or alterations are described as to be handed over by the Contractor to the Representative/ Agent, such materials or articles shall be properly stored by the Contractor until handing over thereof. The Contractor must obtain an official receipt listing materials or articles and dates of handing over. If the Contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Client for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor. Temporary support to openings through existing walls Making openings, altering openings in existing walls and removing lintels above existing openings shall be done with the utmost care to prevent any structural damage. All necessary supports, propping, shoring, needling strutting, turning pieces, etc. to wall openings is deemed to be included in the Contractor's rates. Electrical And Mechanical Where items include for taking down electrical and mechanical fittings the disconnection and making safe electrically is deemed to be included. Contractor to note items with barcodes (asset numbers) cannot be removed without prior arrangement with authorities NOTE:- Contractor to note that items with barcodes, cannot be disposed or removed from site prior to arranging with Client Site visit Tenderers are to visit and view the site and existing structures to be demolished to thoroughly acquaint themselves with the nature of demolitions, the nature and extent of the work and the conditions under which the works are to be done **DEMOLITIONS ETC** Note: Unless otherwise stated, all materials from the lterations and demolitions will belong to the builder. The builder should allow for the removal of all debris from site and keep the site clean at all times **Demolishing and removing**				
1	Desludge 10.5 x 4.6 x 2.5m High overall comprising of brick wall, concrete foundation, sanitary fittings, 5 x 2 x 2m Deep pit with brick lining, all materials to be cart off site to a dumping site approved by the Environmental Engineer. NOTE: Pit full of sludge/human waste, etc. Pit to be backfilled and compacted to 93% Mod AASHTO density to the satisfaction of the Civil Engineer.(4G Ablution Block)	No	3		0,00
					0,00
	SECTION NO. 3 **BILL NO. 1** **EARTHWORKS (PROVISIONAL)**				

	The following are typical examples of descriptions of "nature of ground"				
	Nature of ground				
	The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, all of which will be deemed as "earth", but possibly interspersed with "hard rock"				
	A soils investigation has been carried out on the site by the engineer and the report is annexed to these bills of quantities. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"				
	Subterranean water				
	Subterranean water is expected The water table is expected to vary between approximately 2m and 6m below natural ground level. The removal of subterranean water is given separately				
	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				
	Filling and layer work materials				
	References such as "G1", "G2", etc and "C1", "C2", etc in descriptions of filling and layer work materials refer to corresponding references in the document "Guidelines for Road Construction Materials. TRH 14 : 1985" compiled by the Committee of State Road Authorities and the properties set out therein for each kind shall be applicable to the respective materials described hereinafter				
	Testing				
	Prices for filling are to include for all necessary density and other tests				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	100		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to ?% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00

	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	26		0,00
4	Basements or Pit	m^3	24		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to ?% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	32		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	76		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	32		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	30		0,00
14	Under floors, steps, pavings, etc	m^3	11		0,00
15	Backfilling to trenches, holes, etc	m^3	23		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	18		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with ? passes of a ? ton vibratory roller	m^2	100		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				

18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	29		0,00
19	To bottoms and sides of trenches etc	m^2	92		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 3

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests for approval. The testing shall be undertaken by an approved independent firm or institution nominated by the contractor (test cubes are measured separately)

Breeze concrete

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); 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

Lightweight concrete

Lightweight concrete shall have a density of 600kg/m3 for the top 50mm and 400kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Formwork

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

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

Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described				
	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"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	4		0,00
2	Surface beds on waterproofing	m^3	4		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	5		0,00
4	Surface beds on waterproofing	m^3	7		0,00
5	Pit toilet base	m^3	3		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	8		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	42		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	13		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	4		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	1,00		0,00

	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	50		0,00
					0,00

SECTION NO. 3

BILL NO. 3

PRECAST CONCRETE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes

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

General

Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming

PRECAST CONCRETE SLABS ETC

Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.

1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00

SECTION NO. 3

BILL NO. 4

MASONRY

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Bagged and sealed walls

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 bitumen emulsion waterproofing coating

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour

Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

BLOCKWORK

Concrete masonry units

Blocks are to be either solid or hollow modular dense concrete masonry units having a compressive strength of 7MPa

Wall ties for blockwork

Wall ties shall be polypropylene ties complying with BS 76377. Ties for hollow walls shall be of sufficient length to allow not less than 75mm of each end to be built into the blockwork. Ties are to be spaced at intervals of not more than 1m in the horizontal direction and not more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other

Blockwork

Blockwork shall comply with SANS 10145 "Concrete Masonry Construction"

Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole

Standard complementary blocks

Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary

DECORATIVE BLOCKS

Blocks shall be of approved manufacture, sound, well burnt or cured and uniform and true in size, shape and colour

BRICKWORK

FOUNDATIONS (PROVISIONAL)

	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
	SUPERSTRUCTURE				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	21		0,00
2	One brick walls	m^2	92		0,00
3	One brick walls in beamfilling	m^2	10		0,00
	BRICKWORK SUNDRIES				
	2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	70		0,00
5	110mm Wide reinforcement built in horizontally	m	401		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	14		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	2		0,00
	FACE BRICKWORK				
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	92		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	10		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	7		0,00
12	220mm Wide sills set sloping and slightly projecting	m	2		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	32		0,00
					0,00

	SECTION NO. 3				
	BILL NO. 5				
	WATERPROOFING				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene damp proof course (SANS 952-1985 type B)				
1	In walls	m^2	8		0,00
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
2	Under surface bedS	m^2	23		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On walls	m^2	32		0,00
4	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	5		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 6				
	ROOF COVERINGS, CLADDINGS, ETC				
	Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade				
	PROFILED METAL SHEETING AND ACCESSORIES				
	Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium				
	0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins				

1	Roof covering with pitches not exceeding 25 degrees	m^2	55		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	ROOF AND WALL INSULATION				
	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	48		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 7				
	CARPENTRY AND JOINERY				
	Fixing				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete				
	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				
	Decorative thermosetting plastic laminate covering				
	Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish				
	PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC				
	SUPPLEMENTARY PREAMBLES				
	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	Sawn softwood grade				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless (socketed?) barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	33		0,00
	DOORS ETC				
	Wrought hardwood flushback doors with sapele veneer hung to steel frames				

3	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	1		0,00
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	40mm Door 910 x 2100mm high	No	4		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	5		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 8				
	IRONMONGERY				
	Proprietary items				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration				
	LOCKS				
	Keys				
	Unless otherwise described locks shall have two keys each				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	6		0,00
2	50 x 25 LD polished barrel bolts	No	3		0,00
	"EN-SUITE" LOCKS				
	The following locks are to be suitable for master key operation				
3	50mm padlock	No	1		0,00
4	Bathroom lockset	No	4		0,00
5	Three-lever lockset	No	5		0,00
	HANDLES				

	Manufactured by "SOLID"				
6	Anodised aluminium pull handle	No	5		0,00
					0,00

SECTION NO. 3

BILL NO. 9

METALWORK

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria Glazing shall comply with SAGGA regulations. Glass shall be type ? laminated performance glass as shown on the window schedules/drawings appended to these bills of quantities (as described in the headings to window descriptions?). Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed For purpose made windows and doors, refer to drawings annexed to (issued separately with?) these bills of quantities

The following certificates shall be provided prior to commencement of site work:1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product 2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process 4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years

GALVANISED STEEL GATES, SCREENS, ETC

	Steel gates and frames				
1	Single gate and frame for opening 910 x 2 100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	1		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	5		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	10		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 10				
	PLASTERING				
	The following preambles are to be included only when specifically required by the principal agent				
	GRANOLITHIC				
	Untinted granolithic on concrete				
1	35mm Thick on floors and landings	m^2	44		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	121		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL?)				
	Wire gratings				
	Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings				
	Stormwater channels				

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

French drains

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, "?" geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks

Descriptions of proprietary type 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 and disposal of surplus material on site

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

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0) Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8) Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8) Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

Copper pipes

Pipes shall be hard drawn and half-hard pipes of the class described. 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 "?" type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and 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

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc, casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

Disinfection of water pipework

Water pipework is to be disinfected at completion

Laying, backfilling, bedding, etc of pipes

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately) Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

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

	Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)				
	Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)				
	As-built drawings				
	Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	"Marley Streamline" uPVC				
1	110mm Half-round roof gutters	m	18		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	3		0,00
8	"Charlog" VIP 200 or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	4		0,00
9	320 x 350mm Type 490mm curved bowl urinal fitted with waterless urinal cold water fittings, and mounted with brackets on wall	No	6		0,00
	WASTE UNIONS ETC				
10	32mm chromium plated basin waste union	No	3		0,00
	TRAPS ETC				
11	50mm Rubber "P" or "S" trap	No	3		0,00
	TAPS, VALVES, ETC				
12	15mm Brass hose bib-tap	No	3		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				

13	50mm Pipes	m	20		0,00
14	110mm Vent pipes fixed to brickwork	m	12		0,00
	Extra over PVC-U soil and vent pipes for fittings				
15	50mm Bend	No	16		0,00
16	50mm Junction	No	3		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
17	15mm Pipes	m	20		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
18	15mm Fittings	No	24		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 12				
	GLAZING				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m^2	m^2	2		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	4		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 13				
	PAINTWORK				
	SUPPLEMENTARY PREAMBLES				

	PREPARATORY WORK TO EXISTING WORK				
	PAINT SPECIFICATIONS				
	All painting shall be done in accordance with "?" specifications unless otherwise described				
	COLOURS				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	121		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	10		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	4		0,00
4	Windows	m^2	2		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	4		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	21		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00

8	Ironmongery			0,00
9	Metalwork			0,00
10	Plastering			0,00
11	Plumbing and drainage			0,00
12	Glazing			0,00
13	Paintwork			0,00
				0,00

SECTION NO. 4

BILL NO. 1

EARTHWORKS (PROVISIONAL)

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Classification of excavated material

“Hard rock” shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives “Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness “Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m3 in volume

Applicable standards

All earthworks to be carried out in accordance with SANS 2001 - Construction works Part BE1: Earthworks (general) as well as SANS 10400-F: Site operations and SANS 10400-G: Excavations

Filling material (General)

It will be, at all times, required from the contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the principal agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Filling in sub-layers, under floors, etc

All filling in layers under surface beds, in sub-layers, to form earth mattresses, backfilling, etc. shall be done with materials specified and according to methods prescribed by the SANS 1200ME Sub-base Specification in layers of 150mm thickness

The aforesaid specification was drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on the filling details and requirements prescribed for this project

The said specification, although not issued with, shall be regarded to form part of these Bills of Quantities. The contractor shall obtain a copy of the said specification from the South African National Standards authority and be kept on site at all times

CBR and indicator tests

The contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the principal agent prior commencement of any placement thereof and/or filling done therewith

Density tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

It will be required from the contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling under surface beds, aprons, channels, etc: 1 Test per 125m^2 pl area per each 150mm thick layer

- Filling behind retaining walls: 1 Tests per each 10m length of retaining wall

Results of density tests executed are to be submitted to and approval obtained from the principal agent prior commencement of any subsequent fill layers and/or other work

Carting away excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall be deemed to include the loading, hauling and off-loading of excessive or unsuitable excavated material to a suitable and approved dumping site, which has to be located by the contractor, off the premises

	The location of the intended dumping site will be subjected to the prior written approval of the principal agent				
	The contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used dumping/spoiling by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent				
	Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained				
	Soil poisoning and insecticide				
	All soil poisoning and insecticide to be applied under a five year guarantee by an approved firm of Specialists. Soil insecticides shall comply with SANS Specification 1165. Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS Code of Practice 0124 Casting of concrete floors to start within 24 hours after the application of soil poisoning				
	Pest control applicators must provide :1. Proof of pesticides and insecticides (data sheets)2. Toxicants must be registered with the Department of Agriculture2. Proof that they are qualified to perform the work3. Five year guarantee certificate				
	Measurement and payment				
	Measurement and payment clauses as described in the above-mentioned specification, Standardized Specification for Civil Engineering Construction, shall not apply to the work as set out in this Bill				
	Subterranean water				
	No information regarding susterranean water is available. The tenderer must acquit himself of the presence and depth of subterranean water and allow therefore in his prices				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	111		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to 95% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00
	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				

	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	28		0,00
4	Basements or Pit	m^3	39		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 95% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	49		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	85		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	49		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	33		0,00
14	Under floors, steps, pavings, etc	m^3	8		0,00
15	Backfilling to trenches, holes, etc	m^3	26		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	27		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with 3 passes of a 5 ton vibratory roller	m^2	111		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	21		0,00
19	To bottoms and sides of trenches etc	m^2	105		0,00

	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 4

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels of maximum 16m2

Concrete test cubes

Descriptions and tendered rates for concrete strength test cubes, as required under clause 7, "Tests" of SANS 1200 G, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent and engineer

All concrete strength test cubes, each size 150 x 150 x 150mm, shall be prepared in a set of three

It will be required from the contractor to prepare concrete strength test cube sets for each building at the following minimum frequencies: - One set of three cubes for every 20m^3, or part thereof, of concrete cas per day, or: - One set of three cubes for each batch of concrete cast per event

All concrete strength test cubes shall be labelled and the identity thereof (ie. date, concrete strength type, position where batch was cast relative to the building and building identity) shall be properly recorded for future reference

Reinforced concrete

All reinforced concrete is to be compacted with a mechanical vibrator

Formwork

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

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

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer or principal agent for design reasons. Formwork necessitated by irregularities 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 which is made for in "Earthworks"

Formwork necessitated by irregularity or collapse of excavated faces is not 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"

Formwork to soffits of solid slabs, etc shall be deemed to be slabs not exceeding 200mm thick unless otherwise described

Degree of accuracy of formwork: Grade 2 as SANS 1280G

Permissible deviations: Flatness of plain surface - 5mm Abrupt changes in a continuous surface - 5mm

Supervision

A competent and experienced foreman shall supervise personally the whole of the concrete construction and pay special attention to:

The quality, testing and mixing of materials; The placing and compaction of concrete; The construction and removal of formwork; and The sizes and position of the reinforcement

The contractor shall obtain the permission of the engineer or principal agent before comencing concreting of foundations, surface beds and reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the engineer or principal agent to comment on any particular aspect of the work shall be deemed to relieve the contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the drawings, specifications and conditions of contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the engineer or principal agent to inspect all or any part of the works or that such inspection is necessarily complete in every respect

Reinforcement

	Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps The mass of binding wire is not included in the mass of the reinforcement and the cost thereof must be included in the rates for reinforcement				
	CONCRETE IN FOUNDATIONS (PROVISIONAL)				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	5		0,00
2	Surface beds on waterproofing	m^3	6		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	6		0,00
4	Surface beds on waterproofing	m^3	5		0,00
5	Pit toilet base	m^3	4		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	8		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	43		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	22		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	4		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	0,82		0,00
	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	59		0,00
					0,00

	SECTION NO. 4				
	BILL NO. 3				
	PRECAST CONCRETE				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes				
	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				
	General				
	Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming				
	PRECAST CONCRETE SLABS ETC				
	Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.				
1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 4				
	MASONRY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes in descriptions				
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
	Mortar				

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used Mortar plasticizers may only be used with the approval of the principal agent

Mortar test cubes

Descriptions and tendered rates for mortar strength test cubes, as required by the principal agent, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent

It will be required from the contractor to prepare mortar strength test cubes for each building at a frequency as decided upon by the principal agent

All mortar strength test cubes shall be labelled and the identity thereof (ie. date, mortar strength type, position where batch was taken from relative to the building and building identity) shall be properly recorded for future reference

Brickwork

Brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid. Mortar joints shall be not less than 8mm or more than 12mm thick Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining brickwork

Bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Brickwork reinforcement

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2.8mm diameter main wires with 2.5mm cross wires at 300mm centres welded at intersections Reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

Centres and turning pieces

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour Facing bricks shall exhibit a liability to efflorescence not in excess of "slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of face and paving bricks during transit and handling

	Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick used is obtained All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws **Pointing** Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc **Samples** Samples of all masonry building units, except for walls described as "load bearing" shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site **BRICKWORK** **FOUNDATIONS (PROVISIONAL)** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar **SUPERSTRUCTURE** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	30		0,00
2	One brick walls	m^2	104		0,00
3	One brick walls in beamfilling	m^2	11		0,00
	BRICKWORK SUNDRIES 2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	101		0,00
5	110mm Wide reinforcement built in horizontally	m	458		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	19		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	2		0,00
	FACE BRICKWORK				

	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	104		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	11		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	9		0,00
12	220mm Wide sills set sloping and slightly projecting	m	2		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	49		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 5				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Damp-proof course to walls				
	All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap should be equal the full thickness of the wall				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
1	In walls	m^2	9		0,00

	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
2	Under surface bedS	m^2	15		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On floors	m^2	22		0,00
4	On walls	m^2	48		0,00
5	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	8		0,00
					0,00

SECTION NO. 4

BILL NO. 6

ROOF COVERINGS, CLADDINGS, ETC

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

General

Roof covering must be done by a specialist. A written 5-year guarantee certificate must be issued on completion thereof

Prices to include for all cutting and waste and relevant fixing material, unless otherwise described

Sizes

All items are measured net unless otherwise described

Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade

PROFILED METAL SHEETING AND ACCESSORIES

Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium

0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins

1	Roof covering with pitches not exceeding 25 degrees	m^2	44		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	ROOF AND WALL INSULATION				
	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	37		0,00
					0,00

SECTION NO. 4

BILL NO. 7

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

ROOF TRUSSES

Pre-fabricated metal connected timber roof trusses

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

Timber

Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SANS Specification No 563 or as defined in SANS Specification No 1460

Bolts

Bolts shall be in accordance with BS 4190 or SANS 135

Shear plates, tooth connectors and split rings

Shear plates, tooth connectors and split rings shall be in accordance with BSS 1759 : 1960 and installed in accordance with the CSIR Publication HOUT 468, "The Design, Manufacturing and Erection of Timber Trusses"

Washers

Square or round washers of the following dimensions shall be used with all bolts:

1 Bolts up to 8mm diameter: Washers shall be minimum 25mm wide of minimum 2,50mm thickness

2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness

3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness

Metal connector plates

Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel

The steel shall have a minimum yield strength of 228MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be not less than 275g/m2 commercial class hot dipped galvanising as per SANS 934 before stamping

All connector plates shall have been tested by the CSIR and be of a size capable of transmitting the forces between members of a truss without exceeding the design values published in the CSIR report

Truss construction

Trusses shall be constructed in jigs specially designed to unsure the correct profile, overhangs and cambers

Where metal connector plates are used all joints are to be close fitted butt joints made by precision pressing of the metal connector plates into each side of the joint

Truss design

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

Truss spacing

The truss centres shall be less than or equal to that as described in this bill for each respective truss

Truss pitch

The truss pitch shall be as described in this bill for each respective truss type

Truss loading

Trusses shall be designed for a live load of 0,50kN/m2 and dead load as specified below

Shop drawings, design and erection guarantee certificates

It will be expected from the contractor to timeously prepare, submit and obtain the necessary approvals from the principal agent in respect of the required shop drawings, design and erection guarantee certificates as specified

Dimensions

All dimensions given in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences

Erection

All trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber roof Trusses" as published by the Institute for Timber Construction and the CSIR, or the SABS Code of Practice "The Design, Manufacture and Erection of Timber Roof Trusses", or as designed and detailed by the designer

Design system

The design system as documented in this bill is based on the "TRi design 3000" system and all references given in the descriptions are related to specific type of trusses based on this design system

However, the contractors is to note that any design system of similar quality may be used subject to the prior written approval of the principal agent

Both the design and guarantee for the prefabricated timber roof construction complete, (excluding battens and/or purlins) to be designed, constructed and delivered to site by an approved firm of specialists, under a written guarantee, which shall be lodged with the principal agent for approval before the work commence

Rates

Tendered rates to include for the complete roof construction, including the design of the roof construction, all timber of required grade and type shown on the design, all cutting and waste, cutting to the exact lengths and end angles to manufacture the respective truss type, supply of all connector plates, prefabrication of trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works (cost of girder trusses to include cost of required metal truss hangers), etc

Prices for trusses must also include for: 1. Unloading and storing under cover and protecting from the weather, or handing over to others for unloading and storing as required

2. Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing and holding down and connections supplied by the truss fabricator for use by: 2.1 themselves (when responsible for erection) 2.2 others (where applicable)

3. Such site supervision as deemed necessary by the fabricator of the trusses to ensure that all the erection details have been complied with to his satisfaction

Fixing of purlins

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

GENERAL CARPENTRY AND JOINERY

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

Particle board

Particle board shall comply with the following specifications: a) SANS 1300 Particle board: exterior and flooring type b) SANS 1301 Particle board: interior type

Decorative laminate finish

Decorative laminate finishes shall be glued under pressure

All edge strips shall be butt jointed at junctions with adjacent similar finish

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

ROOFS ETC

Plate nailed timber roof truss construction

Unless otherwise described, the following specifications will apply:

1. All trusses to be with a 26° pitch at approximately 750mm centres

	2 The dead load consists of 420 x 332mm "Marley Monarch Antique" tiles on 38 x 38mm purlins at approximately 320mm centres with either 4 - 9.5mm fibre-cement or plasterboard nailed-up ceilings on 38 x 38mm brandering at 450mm centres or 40mm thick suspended ceilings				
	Sawn softwood				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	38		0,00
	DOORS ETC				
	Wrought meranti doors hung to steel frames				
3	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	1		0,00
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	40mm Door 910 x 2100mm high	No	6		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	7		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Finishes to ironmongery				

	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	12		0,00
2	50 x 25 LD polished barrel bolts	No	6		0,00
	LOCKS				
	Keys				
	Unless otherwise described locks shall have two keys each				
	"EN-SUITE" LOCKS				
	"Union"				
	The following locks are to be suitable for master key operation				
3	50mm padlock	No	1		0,00
4	Three-lever lockset	No	7		0,00
5	Bathroom lockset	No	6		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 9				
	METALWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Primer				
	All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer All scratches, chips or blemishes to be made good on site after erection All rates tendered must make provision for this as no claim will afterwards be entertained.				
	Descriptions				

No allowance has been made in the mass of steel for rolling margins, rivets, additional materials in welding, decorative or protective treatment nor constructional aids

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete

Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Welded joints and intersections

Prices of continuous rails shall include for welded joints in the length and prices of instersections shall include all cutting, mitring, scribing, shaping, etc

Bends, knees, ramps and the like to continuous rails shall be forged and rounded to approved radii

Prices for balustrades, burglar guards and the like shall include for framed and welded joints at instersections

Screws and bolts

Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless described otherwise, be used for srewing items items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium

Items fixed to adjoining metalwork with rivets, self-tapping screws, machine screws, etc shall include all necessary drillings

Where bolting is specified, projecting shank ends of bolts shall be cut off flush and left smooth

Door frames

Unless otherwise described, the following shall be applicable on all door frames: - Frames shall be double rebated suitable for 40mm thick doors

- One jamb of all frames for single doors shall be factory prepared for striking plate of mortice lock

- All frames shall be factory fitted with three washered butt hinges for each door

- All frames shall be treated with one coat factory applied metal primer complying with SANS Specification 909

Striking plates for door frames

Striking plates to be of chromium-plated type, unless otherwise described

Sealing of all abutments

	All windows, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicon sealant along all joints and prices to allow therefore				
	GALVANISED STEEL GATES, SCREENS, ETC				
	Steel gates and frames				
1	Single gate and frame for opening 910 x 2100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	1		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	7		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	9		0,00
4	Window type W1, 889 x 457mm high	No	2		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 10				
	PLASTERING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Preparatory work				
	Surfaces shall be clean and free from oil and thoroughly wetted directly before any plastering or other in-situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key				
	Finish				
	All coats of paving and plastering shall be executed in one operation without any blemishes				
	Granolithic				

	Granolithic shall be cured for at least seven days after laying Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid Granolithic shall be divided into panels not exceeding 6m2 with V-joints and deep trowel cuts Granolithic to stairs shall include non-slip reedings to treads **Skirtings** Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square juntion with floor finish **Plaster** All plaster, other than skim plaster, shall not be less than 10mm and not more than 20mm thick **General** Rates for plastering described as being on walls shall include concrete columns, beams and lintels flush with the face of the wall **Textured finishes** All textured finishes are to be applied to the satisfaction of the principal agent and executed by an approved firm of specialists, all strictly in accordance with the materials supplied and methods employed by the manufacturer **Preparatory work for textured finishes** Textured finishes to be applied to surfaces as described. Rates tendered are to include for all necessary priming, preparatory work, etc All surfaces are to be inspected and approved by the principal agent prior any work is commenced				
	GRANOLITHIC				
	Untinted granolithic on concrete				
1	35mm Thick on floors and landings	m^2	36		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	151		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL)				

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Regulations

All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work on this contract

Prices

Prices must include for arranging joints at convenient points, embedding in concrete of for rough cutting around brickwork as the work proceeds

No distinction has been made between pipes chased in walls, fixed in ceilings, roofs, floors, columns, slabs, etc or for different finishes to these elements and has been described as "pipes".

Prices shall therefore include for all holderbats, brackets, clips, bands, etc and building in or chasing of same, holes through brickwork, concrete, etc and for making good facings, plaster, granolithic and other in-situ finishes as necessary

Prices to fixing of sanitary fittings etc shall include for setting up and fixing in position as described, joints to soil, waste and supply pipes as the case may be, making good finishes around and for protecting fittings from injury during subsequent building operations

Excavations

Prices for all excavations must include for necessary staging and for the risk of collapse of excavation side and also keeping excavations free from water

Laying, backfilling, bedding, etc. of pipes

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

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

Compacting

Filling for all types of pipes described as "under solid floors, etc." shall be done with approved backfilling and compacted to 93% Mod. AASHTO density, unless otherwise described

uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed

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 wall half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bend 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" or similar and approved type. Capillary solder fittings shall comply with ISO 2016

Galvanised steel pipes and fittings

Galvanised steel pipes are to be "Tosa" or similar and approved medium class to SANS 62 and fittings are to be manufactured by "Tupy" or similar and approved

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level

Disinfection of water pipework

All pipework is to be disinfected in accordance with SANS 1200L

Reducing fittings

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

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

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

Stainless steel used for the manufacturing of urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be type 304 (18/8)

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

Flush pans

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

	Sealing of abutments All sanitary fittings abutting walls, tiled surfaces, vanity slabs, work tops, etc. to be sealed watertight with an approved silicon sealant along all joints Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained **Waste unions** Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings **Timber backing boards** Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish **Exposed concrete surfaces** Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster **Testing** Descriptions for the testing of plumbing and drainage installations shall be deemed to cater for all testing apparatus, labour, etc. and shall be done strictly as directed by and in accordance to the Principal Agent's instructions, including for re-testing after taking out and making good all defective work to his entire satisfaction As-built drawings Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere) **RAINWATER DISPOSAL** **"Marley Streamline" uPVC**				
1	110mm Half-round roof gutters	m	19		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS Manufactured by "CHARLOG" or similar approved				

7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	5		0,00
8	"ATLAS" VIP 200 Code 222 AP C/W or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	6		0,00
	WASTE UNIONS ETC				
	"Cobra Watertech"				
9	32mm chromium plated basin waste union	No	5		0,00
	TRAPS ETC				
	"Marley"				
10	50mm Rubber "P" or "S" trap	No	5		0,00
	TAPS, VALVES, ETC				
	Brass				
11	15mm Brass hose bib-tap	No	5		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
12	50mm Pipes	m	20		0,00
13	110mm Vent pipes fixed to brickwork	m	18		0,00
	Extra over PVC-U soil and vent pipes for fittings				
14	50mm Bend	No	16		0,00
15	50mm Junction	No	5		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
16	15mm Pipes	m	20		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
17	15mm Fittings	No	24		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 12				
	GLAZING				
	PREAMBLES				

	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m^2	m^2	2		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	5		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 13				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Descriptions of painting shall be deemed to include complete preparation of new as well as existing surfaces, including patching and filling, sanding and primer on nail and screw heads Descriptions of painting on pipes, gutters, etc shall be deemed to include painting on holder bats, hangers, clips, clamps, etc Descriptions of painting on windows, frames, etc shall be deemed to include primer in rebates of sashes to be glazed				
	PAINTWORK, ETC TO NEW WORK				
	ON FLOATED PLASTER				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	151		0,00

	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	11		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	6		0,00
4	Windows	m^2	2		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	4		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	20		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00
8	Ironmongery				0,00
9	Metalwork				0,00
10	Plastering				0,00
11	Plumbing and drainage				0,00
12	Glazing				0,00
13	Paintwork				0,00
					0,00
	SECTION NO. 5				
	BILL NO. 1				

EARTHWORKS (PROVISIONAL)

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Classification of excavated material

“Hard rock” shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives “Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness “Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m3 in volume

Applicable standards

All earthworks to be carried out in accordance with SANS 2001 - Construction works Part BE1: Earthworks (general) as well as SANS 10400-F: Site operations and SANS 10400-G: Excavations

Filling material (General)

It will be, at all times, required from the contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the principal agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Filling in sub-layers, under floors, etc

All filling in layers under surface beds, in sub-layers, to form earth mattresses, backfilling, etc. shall be done with materials specified and according to methods prescribed by the SANS 1200ME Sub-base Specification in layers of 150mm thickness

The aforesaid specification was drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on the filling details and requirements prescribed for this project

The said specification, although not issued with, shall be regarded to form part of these Bills of Quantities. The contractor shall obtain a copy of the said specification from the South African National Standards authority and be kept on site at all times

CBR and indicator tests

The contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the principal agent prior commencement of any placement thereof and/or filling done therewith

Density tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

It will be required from the contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling under surface beds, aprons, channels, etc: 1 Test per 125m^2 pl area per each 150mm thick layer

- Filling behind retaining walls: 1 Tests per each 10m length of retaining wall

Results of density tests executed are to be submitted to and approval obtained from the principal agent prior commencement of any subsequent fill layers and/or other work

Carting away excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall be deemed to include the loading, hauling and off-loading of excessive or unsuitable excavated material to a suitable and approved dumping site, which has to be located by the contractor, off the premises

The location of the intended dumping site will be subjected to the prior written approval of the principal agent

The contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used dumping/spoiling by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent

Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained

Soil poisoning and insecticide

	All soil poisoning and insecticide to be applied under a five year guarantee by an approved firm of Specialists. Soil insecticides shall comply with SANS Specification 1165. Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS Code of Practice 0124 Casting of concrete floors to start within 24 hours after the application of soil poisoning Pest control applicators must provide :1. Proof of pesticides and insecticides (data sheets)2. Toxicants must be registered with the Department of Agriculture2. Proof that they are qualified to perform the work3. Five year guarantee certificate **Measurement and payment** Measurement and payment clauses as described in the above-mentioned specification, Standardized Specification for Civil Engineering Construction, shall not apply to the work as set out in this Bill **Subterranean water** No information regarding susterranean water is available. The tenderer must acquit himself of the presence and depth of subterranean water and allow therefore in his prices				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	83		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to 95% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00
	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	32		0,00
4	Basements or Pit	m^3	30		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 95% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	34		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00

8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	92		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	34		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	25		0,00
14	Under floors, steps, pavings, etc	m^3	9		0,00
15	Backfilling to trenches, holes, etc	m^3	29		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	19		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with 3 passes of a 5 ton vibratory roller	m^2	83		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	24		0,00
19	To bottoms and sides of trenches etc	m^2	114		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 2				
	CONCRETE, FORMWORK AND REINFORCEMENT				

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels of maximum 16m2

Concrete test cubes

Descriptions and tendered rates for concrete strength test cubes, as required under clause 7, "Tests" of SANS 1200 G, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent and engineer

All concrete strength test cubes, each size 150 x 150 x 150mm, shall be prepared in a set of three

It will be required from the contractor to prepare concrete strength test cube sets for each building at the following minimum frequencies: - One set of three cubes for every $20m^3$, or part thereof, of concrete cas per day, or: - One set of three cubes for each batch of concrete cast per event

All concrete strength test cubes shall be labelled and the identity thereof (ie. date, concrete strength type, position where batch was cast relative to the building and building identity) shall be properly recorded for future reference

Reinforced concrete

All reinforced concrete is to be compacted with a mechanical vibrator

Formwork

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

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

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer or principal agent for design reasons. Formwork necessitated by irregularities 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 which is made for in "Earthworks"

	Formwork necessitated by irregularity or collapse of excavated faces is not 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" Formwork to soffits of solid slabs, etc shall be deemed to be slabs not exceeding 200mm thick unless otherwise described Degree of accuracy of formwork: Grade 2 as SANS 1280G Permissible deviations: Flatness of plain surface - 5mm Abrupt changes in a continuous surface - 5mm **Supervision** A competent and experienced foreman shall supervise personally the whole of the concrete construction and pay special attention to: The quality, testing and mixing of materials; The placing and compaction of concrete; The construction and removal of formwork; and The sizes and position of the reinforcement The contractor shall obtain the permission of the engineer or principal agent before comencing concreting of foundations, surface beds and reinforced structure No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the engineer or principal agent to comment on any particular aspect of the work shall be deemed to relieve the contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the drawings, specifications and conditions of contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the engineer or principal agent to inspect all or any part of the works or that such inspection is necessarily complete in every respect **Reinforcement** Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps The mass of binding wire is not included in the mass of the reinforcement and the cost thereof must be included in the rates for reinforcement				
	CONCRETE IN FOUNDATIONS (PROVISIONAL)				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	4		0,00
2	Surface beds on waterproofing	m^3	4		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	7		0,00

4	Surface beds on waterproofing	m^3	6		0,00
5	Pit toilet base	m^3	3		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	9		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	41		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	17		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	4		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	0,63		0,00
	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	52		0,00
					0,00

SECTION NO. 5

BILL NO. 3

PRECAST CONCRETE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes

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

	General				
	Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming				
	PRECAST CONCRETE SLABS ETC				
	Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.				
1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 4				
	MASONRY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes in descriptions				
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
	Mortar				
	The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used Mortar plasticizers may only be used with the approval of the principal agent				
	Mortar test cubes				
	Descriptions and tendered rates for mortar strength test cubes, as required by the principal agent, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent				
	It will be required from the contractor to prepare mortar strength test cubes for each building at a frequency as decided upon by the principal agent				

All mortar strength test cubes shall be labelled and the identity thereof (ie. date, mortar strength type, position where batch was taken from relative to the building and building identity) shall be properly recorded for future reference

Brickwork

Brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid. Mortar joints shall be not less than 8mm or more than 12mm thick Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining brickwork

Bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Brickwork reinforcement

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2.8mm diameter main wires with 2.5mm cross wires at 300mm centres welded at intersections Reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

Centres and turning pieces

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour Facing bricks shall exhibit a liability to efflorescence not in excess of "slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of face and paving bricks during transit and handling

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick used is obtained

All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws

Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

Samples

Samples of all masonry building units, except for walls described as "load bearing" shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site

	BRICKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
	SUPERSTRUCTURE				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	27		0,00
2	One brick walls	m^2	111		0,00
3	One brick walls in beamfilling	m^2	12		0,00
	BRICKWORK SUNDRIES				
	2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	90		0,00
5	110mm Wide reinforcement built in horizontally	m	498		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	17		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	3		0,00
	FACE BRICKWORK				
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	111		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	12		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	9		0,00
12	220mm Wide sills set sloping and slightly projecting	m	3		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				

13	M200 Block cavity Walls below ground level	m^2	34		0,00
					0,00

SECTION NO. 5

BILL NO. 5

WATERPROOFING

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Damp-proof course to walls

All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap should be equal the full thickness of the wall

Waterproofing

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

DAMPPROOFING OF WALLS AND FLOORS

One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course

1	In walls	m^2	10		0,00

One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"

2	Under surface bedS	m^2	18		0,00

WATERPROOFING TO BASEMENTS

Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps

3	On floors	m^2	17		0,00
4	On walls	m^2	30		0,00
5	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	5		0,00
					0,00

	SECTION NO. 5				
	BILL NO. 6				
	ROOF COVERINGS, ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	General				
	Roof covering must be done by a specialist. A written 5-year guarantee certificate must be issued on completion thereof				
	Prices to include for all cutting and waste and relevant fixing material, unless otherwise described				
	Sizes				
	All items are measured net unless otherwise described				
	Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade				
	PROFILED METAL SHEETING AND ACCESSORIES				
	Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium				
	0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins				
1	Roof covering with pitches not exceeding 25 degrees	m^2	48		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	Sundries				
	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	42		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 7				

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

ROOF TRUSSES

Pre-fabricated metal connected timber roof trusses

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

Timber

Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SANS Specification No 563 or as defined in SANS Specification No 1460

Bolts

Bolts shall be in accordance with BS 4190 or SANS 135

Shear plates, tooth connectors and split rings

Shear plates, tooth connectors and split rings shall be in accordance with BSS 1759 : 1960 and installed in accordance with the CSIR Publication HOUT 468, "The Design, Manufacturing and Erection of Timber Trusses"

Washers

Square or round washers of the following dimensions shall be used with all bolts:

1 Bolts up to 8mm diameter: Washers shall be minimum 25mm wide of minimum 2,50mm thickness

2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness

3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness

Metal connector plates

Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel

The steel shall have a minimum yield strength of 228MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be not less than 275g/m2 commercial class hot dipped galvanising as per SANS 934 before stamping

All connector plates shall have been tested by the CSIR and be of a size capable of transmitting the forces between members of a truss without exceeding the design values published in the CSIR report

Truss construction

Trusses shall be constructed in jigs specially designed to unsure the correct profile, overhangs and cambers

Where metal connector plates are used all joints are to be close fitted butt joints made by precision pressing of the metal connector plates into each side of the joint

Truss design

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

Truss spacing

The truss centres shall be less than or equal to that as described in this bill for each respective truss

Truss pitch

The truss pitch shall be as described in this bill for each respective truss type

Truss loading

Trusses shall be designed for a live load of 0,50kN/m2 and dead load as specified below

Shop drawings, design and erection guarantee certificates

It will be expected from the contractor to timeously prepare, submit and obtain the necessary approvals from the principal agent in respect of the required shop drawings, design and erection guarantee certificates as specified

Dimensions

All dimensions given in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences

Erection

All trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber roof Trusses" as published by the Institute for Timber Construction and the CSIR, or the SABS Code of Practice "The Design, Manufacture and Erection of Timber Roof Trusses", or as designed and detailed by the designer

Design system

The design system as documented in this bill is based on the "TRi design 3000" system and all references given in the descriptions are related to specific type of trusses based on this design system

However, the contractors is to note that any design system of similar quality may be used subject to the prior written approval of the principal agent

Both the design and guarantee for the prefabricated timber roof construction complete, (excluding battens and/or purlins) to be designed, constructed and delivered to site by an approved firm of specialists, under a written guarantee, which shall be lodged with the principal agent for approval before the work commence

Rates

Tendered rates to include for the complete roof construction, including the design of the roof construction, all timber of required grade and type shown on the design, all cutting and waste, cutting to the exact lengths and end angles to manufacture the respective truss type, supply of all connector plates, prefabrication of trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works (cost of girder trusses to include cost of required metal truss hangers), etc

Prices for trusses must also include for: 1. Unloading and storing under cover and protecting from the weather, or handing over to others for unloading and storing as required

2. Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing and holding down and connections supplied by the truss fabricator for use by: 2.1 themselves (when responsible for erection) 2.2 others (where applicable)

3. Such site supervision as deemed necessary by the fabricator of the trusses to ensure that all the erection details have been complied with to his satisfaction

Fixing of purlins

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

GENERAL CARPENTRY AND JOINERY

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

	Particle board Particle board shall comply with the following specifications: a) SANS 1300 Particle board: exterior and flooring type b) SANS 1301 Particle board: interior type **Decorative laminate finish** Decorative laminate finishes shall be glued under pressure All edge strips shall be butt jointed at junctions with adjacent similar finish **Hardwoods** All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia **Sealing of all abutments** All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained **ROOFS ETC** **Plate nailed timber roof truss construction** Unless otherwise described, the following specifications will apply: 1 All trusses to be with a 26° pitch at approximately 750mm centres 2 The dead load consists of 420 x 332mm "Marley Monarch Antique" tiles on 38 x 38mm purlins at approximately 320mm centres with either 4 - 9.5mm fibre-cement or plasterboard nailed-up ceilings on 38 x 38mm brandering at 450mm centres or 40mm thick suspended ceilings **Sawn softwood**				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	41		0,00
	DOORS ETC				
	Wrought meranti doors hung to steel frames				
3	40mm Framed and ledged batten door 910 x 2100mm high	No	3		0,00

	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	6		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	7		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Finishes to ironmongery				
	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 SD Sanded				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	6		0,00
2	50 x 25 LD polished barrel bolts	No	3		0,00
	HINGES, BOLTS, ETC				
3	50mm padlock	No	3		0,00
4	Bathroom lockset	No	3		0,00
5	Three-lever lockset	No	3		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 9				
	METALWORK				

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Primer

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer All scratches, chips or blemishes to be made good on site after erection All rates tendered must make provision for this as no claim will afterwards be entertained.

Descriptions

No allowance has been made in the mass of steel for rolling margins, rivets, additional materials in welding, decorative or protective treatment nor constructional aids

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete

Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Welded joints and intersections

Prices of continuous rails shall include for welded joints in the length and prices of instersections shall include all cutting, mitring, scribing, shaping, etc

Bends, knees, ramps and the like to continuous rails shall be forged and rounded to approved radii

Prices for balustrades, burglar guards and the like shall include for framed and welded joints at instersections

Screws and bolts

Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless described otherwise, be used for srewing items items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium

Items fixed to adjoining metalwork with rivets, self-tapping screws, machine screws, etc shall include all necessary drillings

Where bolting is specified, projecting shank ends of bolts shall be cut off flush and left smooth

Door frames

	Unless otherwise described, the following shall be applicable on all door frames: - Frames shall be double rebated suitable for 40mm thick doors - One jamb of all frames for single doors shall be factory prepared for striking plate of mortice lock - All frames shall be factory fitted with three washered butt hinges for each door - All frames shall be treated with one coat factory applied metal primer complying with SANS Specification 909 **Striking plates for door frames** Striking plates to be of chromium-plated type, unless otherwise described **Sealing of all abutments** All windows, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicon sealant along all joints and prices to allow therefore				
	STEEL GATES, SCREENS, ETC				
	GALVANISED STEEL GATES, SCREENS, ETC				
	Steel gates and frames				
1	Single gate and frame for opening 910 x 2 100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	3		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	3		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	10		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 10				
	PLASTERING				
	PREAMBLES				

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Preparatory work

Surfaces shall be clean and free from oil and thoroughly wetted directly before any plastering or other in-situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key

Finish

All coats of paving and plastering shall be executed in one operation without any blemishes

Granolithic

Granolithic shall be cured for at least seven days after laying Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid Granolithic shall be divided into panels not exceeding 6m2 with V-joints and deep trowel cuts

Granolithic to stairs shall include non-slip reedings to treads

Skirtings

Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square juntion with floor finish

Plaster

All plaster, other than skim plaster, shall not be less than 10mm and not more than 20mm thick

General

Rates for plastering described as being on walls shall include concrete columns, beams and lintels flush with the face of the wall

Textured finishes

All textured finishes are to be applied to the satisfaction of the principal agent and executed by an approved firm of specialists, all strictly in accordance with the materials supplied and methods employed by the manufacturer

Preparatory work for textured finishes

Textured finishes to be applied to surfaces as described. Rates tendered are to include for all necessary priming, preparatory work, etc

	All surfaces are to be inspected and approved by the principal agent prior any work is commenced				
	GRANOLITHIC				
	Untinted granolithic steel trowelled on concrete				
1	35mm Thick on floors and landings	m^2	39		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	153		0,00
					0,00

SECTION NO. 5

BILL NO. 11

PLUMBING AND DRAINAGE (PROVISIONAL)

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Regulations

All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work on this contract

Prices

Prices must include for arranging joints at convenient points, embedding in concrete of for rough cutting around brickwork as the work proceeds

No distinction has been made between pipes chased in walls, fixed in ceilings, roofs, floors, columns, slabs, etc or for different finishes to these elements and has been described as "pipes".

Prices shall therefore include for all holderbats, brackets, clips, bands, etc and building in or chasing of same, holes through brickwork, concrete, etc and for making good facings, plaster, granolithic and other in-situ finishes as necessary

Prices to fixing of sanitary fittings etc shall include for setting up and fixing in position as described, joints to soil, waste and supply pipes as the case may be, making good finishes around and for protecting fittings from injury during subsequent building operations

Excavations

Prices for all excavations must include for necessary staging and for the risk of collapse of excavation side and also keeping excavations free from water

Laying, backfilling, bedding, etc. of pipes

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

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

Compacting

Filling for all types of pipes described as "under solid floors, etc." shall be done with approved backfilling and compacted to 93% Mod. AASHTO density, unless otherwise described

uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed

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 wall half hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bend 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" or similar and approved type. Capillary solder fittings shall comply with ISO 2016

Galvanised steel pipes and fittings

Galvanised steel pipes are to be "Tosa" or similar and approved medium class to SANS 62 and fittings are to be manufactured by "Tupy" or similar and approved

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level

Disinfection of water pipework

All pipework is to be disinfected in accordance with SANS 1200L

Reducing fittings

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

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

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

Stainless steel used for the manufacturing of urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be type 304 (18/8)

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

Flush pans

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

Sealing of abutments

All sanitary fittings abutting walls, tiled surfaces, vanity slabs, work tops, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

Waste unions

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

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster

Testing

Descriptions for the testing of plumbing and drainage installations shall be deemed to cater for all testing apparatus, labour, etc. and shall be done strictly as directed by and in accordance to the Principal Agent's instructions, including for re-testing after taking out and making good all defective work to his entire satisfaction

	As-built drawings				
	Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	"Marley Streamline" uPVC				
1	110mm Half-round roof gutters	m	23		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	5		0,00
8	"ATLAS" VIP 200 Code 222 AP C/W or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	5		0,00
9	320 x 350mm Type 490mm curved bowl urinal fitted with waterless urinal cold water fittings, and mounted with brackets on wall	No	2		0,00
	WASTE UNIONS ETC				
	"Cobra Watertech"				
10	32mm chromium plated basin waste union	No	5		0,00
	TRAPS ETC				
	"Marley"				
11	50mm Rubber "P" or "S" trap	No	5		0,00
	TAPS, VALVES, ETC				
	Brass				
12	15mm Brass hose bib-tap	No	5		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
13	50mm Pipes	m	15		0,00
14	110mm Vent pipes fixed to brickwork	m	12		0,00

	Extra over PVC-U soil and vent pipes for fittings				
15	50mm Bend	No	12		0,00
16	50mm Junction	No	5		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
17	15mm Pipes	m	15		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
18	15mm Fittings	No	18		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 12				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m^2	m^2	3		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass ("GG" Quality) copper backed mirrors with rounded polished edges holed for and fixed on 6mm hardboard backing with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	3		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 13				
	PAINTWORK				

	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Descriptions of painting shall be deemed to include complete preparation of new as well as existing surfaces, including patching and filling, sanding and primer on nail and screw heads Descriptions of painting on pipes, gutters, etc shall be deemed to include painting on holder bats, hangers, clips, clamps, etc Descriptions of painting on windows, frames, etc shall be deemed to include primer in rebates of sashes to be glazed				
	PAINTWORK, ETC TO NEW WORK				
	ON FLOATED PLASTER				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	153		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	12		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	5		0,00
4	Windows	m^2	3		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	11		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	25		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00

3	Precast concrete			0,00
4	Masonry			0,00
5	Waterproofing			0,00
6	Roof coverings, claddings, etc			0,00
7	Carpentry and joinery			0,00
8	Ironmongery			0,00
9	Metalwork			0,00
10	Plastering			0,00
11	Plumbing and drainage			0,00
12	Glazing			0,00
13	Paintwork			0,00
				0,00

SECTION NO. 6

BILL NO. 1

EARTHWORKS (PROVISIONAL)

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Classification of excavated material

“Hard rock” shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives “Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness “Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m3 in volume

Applicable standards

All earthworks to be carried out in accordance with SANS 2001 - Construction works Part BE1: Earthworks (general) as well as SANS 10400-F: Site operations and SANS 10400-G: Excavations

Filling material (General)

It will be, at all times, required from the contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the principal agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Filling in sub-layers, under floors, etc

All filling in layers under surface beds, in sub-layers, to form earth mattresses, backfilling, etc. shall be done with materials specified and according to methods prescribed by the SANS 1200ME Sub-base Specification in layers of 150mm thickness

The aforesaid specification was drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on the filling details and requirements prescribed for this project

The said specification, although not issued with, shall be regarded to form part of these Bills of Quantities. The contractor shall obtain a copy of the said specification from the South African National Standards authority and be kept on site at all times

CBR and indicator tests

The contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the principal agent prior commencement of any placement thereof and/or filling done therewith

Density tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

It will be required from the contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling under surface beds, aprons, channels, etc: 1 Test per 125m^2 pl area per each 150mm thick layer

- Filling behind retaining walls: 1 Tests per each 10m length of retaining wall

Results of density tests executed are to be submitted to and approval obtained from the principal agent prior commencement of any subsequent fill layers and/or other work

	Carting away excessive and/or unsuitable excavated material Descriptions for "carting away excessive or unsuitable excavated material from site" shall be deemed to include the loading, hauling and off-loading of excessive or unsuitable excavated material to a suitable and approved dumping site, which has to be located by the contractor, off the premises The location of the intended dumping site will be subjected to the prior written approval of the principal agent The contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used dumping/spoiling by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained				
	Soil poisoning and insecticide All soil poisoning and insecticide to be applied under a five year guarantee by an approved firm of Specialists. Soil insecticides shall comply with SANS Specification 1165. Work shall be carried out in accordance with “The application of soil insecticides for the protection of buildings” - SANS Code of Practice 0124 Casting of concrete floors to start within 24 hours after the application of soil poisoning Pest control applicators must provide :1. Proof of pesticides and insecticides (data sheets)2. Toxicants must be registered with the Department of Agriculture2. Proof that they are qualified to perform the work3. Five year guarantee certificate				
	Measurement and payment Measurement and payment clauses as described in the above-mentioned specification, Standardized Specification for Civil Engineering Construction, shall not apply to the work as set out in this Bill				
	Subterranean water No information regarding susterranean water is available. The tenderer must acquit himself of the presence and depth of subterranean water and allow therefore in his prices				
	<u>SITE CLEARANCE</u> <u>Site clearance</u>				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	57		0,00
	REMOVAL OF TREES ETC <u>Taking out and removing, grubbing up roots, filling in holes and compacting to 95% Mod AASHTO density</u>				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00

	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	21		0,00
4	Basements or Pit	m^3	32		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 95% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	49		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	64		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	49		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	17		0,00
14	Under floors, steps, pavings, etc	m^3	6		0,00
15	Backfilling to trenches, holes, etc	m^3	19		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	27		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with 3 passes of a 1 ton vibratory roller	m^2	57		0,00
	WEED KILLERS, INSECTICIDES, ETC				

	Soil insecticide in accordance with SANS 5859				
18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	14		0,00
19	To bottoms and sides of trenches etc	m^2	76		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 6

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels of maximum 16m2

Concrete test cubes

Descriptions and tendered rates for concrete strength test cubes, as required under clause 7, "Tests" of SANS 1200 G, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent and engineer

All concrete strength test cubes, each size 150 x 150 x 150mm, shall be prepared in a set of three

It will be required from the contractor to prepare concrete strength test cube sets for each building at the following minimum frequencies: - One set of three cubes for every $20m^3$, or part thereof, of concrete cas per day, or: - One set of three cubes for each batch of concrete cast per event

All concrete strength test cubes shall be labelled and the identity thereof (ie. date, concrete strength type, position where batch was cast relative to the building and building identity) shall be properly recorded for future reference

Reinforced concrete

All reinforced concrete is to be compacted with a mechanical vibrator

Formwork

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

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

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer or principal agent for design reasons. Formwork necessitated by irregularities 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 which is made for in "Earthworks"

Formwork necessitated by irregularity or collapse of excavated faces is not 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"

Formwork to soffits of solid slabs, etc shall be deemed to be slabs not exceeding 200mm thick unless otherwise described

Degree of accuracy of formwork: Grade 2 as SANS 1280G

Permissible deviations: Flatness of plain surface - 5mm Abrupt changes in a continuous surface - 5mm

Supervision

A competent and experienced foreman shall supervise personally the whole of the concrete construction and pay special attention to:

The quality, testing and mixing of materials; The placing and compaction of concrete; The construction and removal of formwork; and The sizes and position of the reinforcement

The contractor shall obtain the permission of the engineer or principal agent before comencing concreting of foundations, surface beds and reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the engineer or principal agent to comment on any particular aspect of the work shall be deemed to relieve the contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the drawings, specifications and conditions of contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the engineer or principal agent to inspect all or any part of the works or that such inspection is necessarily complete in every respect

Reinforcement

	Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps The mass of binding wire is not included in the mass of the reinforcement and the cost thereof must be included in the rates for reinforcement				
	CONCRETE IN FOUNDATIONS (PROVISIONAL)				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	5		0,00
2	Surface beds on waterproofing	m^3	6		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	4		0,00
4	Surface beds on waterproofing	m^3	4		0,00
5	Pit toilet base	m^3	4		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	2		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	32		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	18		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	5		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	0,48		0,00
	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	35		0,00
					0,00

	SECTION NO. 6				
	BILL NO. 3				
	PRECAST CONCRETE				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes				
	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				
	General				
	Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming				
	PRECAST CONCRETE SLABS ETC				
	Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.				
1	1 155 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00
	SECTION NO. 6				
	BILL NO. 4				
	MASONRY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes in descriptions				
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
	Mortar				

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used Mortar plasticizers may only be used with the approval of the principal agent

Mortar test cubes

Descriptions and tendered rates for mortar strength test cubes, as required by the principal agent, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent

It will be required from the contractor to prepare mortar strength test cubes for each building at a frequency as decided upon by the principal agent

All mortar strength test cubes shall be labelled and the identity thereof (ie. date, mortar strength type, position where batch was taken from relative to the building and building identity) shall be properly recorded for future reference

Brickwork

Brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid. Mortar joints shall be not less than 8mm or more than 12mm thick Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining brickwork

Bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Brickwork reinforcement

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2.8mm diameter main wires with 2.5mm cross wires at 300mm centres welded at intersections Reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

Centres and turning pieces

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour Facing bricks shall exhibit a liability to efflorescence not in excess of "slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of face and paving bricks during transit and handling

	Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick used is obtained All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws **Pointing** Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc **Samples** Samples of all masonry building units, except for walls described as "load bearing" shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site **BRICKWORK** **FOUNDATIONS (PROVISIONAL)** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar **SUPERSTRUCTURE** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	24		0,00
2	One brick walls	m^2	78		0,00
3	One brick walls in beamfilling	m^2	8		0,00
	BRICKWORK SUNDRIES 2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	80		0,00
5	110mm Wide reinforcement built in horizontally	m	331		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	15		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	3		0,00
	FACE BRICKWORK				

	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	78		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	8		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	8		0,00
12	220mm Wide sills set sloping and slightly projecting	m	3		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	49		0,00
					0,00
	SECTION NO. 6				
	BILL NO. 5				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Damp-proof course to walls				
	All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap should be equal the full thickness of the wall				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
1	In walls	m^2	7		0,00

	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
2	Under surface bedS	m^2	8		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On floors	m^2	18		0,00
4	On walls	m^2	31		0,00
5	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	5		0,00
					0,00

SECTION NO. 6

BILL NO. 6

ROOF COVERINGS, CLADDINGS, ETC

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

General

Roof covering must be done by a specialist. A written 5-year guarantee certificate must be issued on completion thereof

Prices to include for all cutting and waste and relevant fixing material, unless otherwise described

Sizes

All items are measured net unless otherwise described

Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade

PROFILED METAL SHEETING AND ACCESSORIES

Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium

0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins

1	Roof covering with pitches not exceeding 25 degrees	m^2	23		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	ROOF AND WALL INSULATION				
	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	23		0,00
					0,00

SECTION NO. 6

BILL NO. 7

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

ROOF TRUSSES

Pre-fabricated metal connected timber roof trusses

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

Timber

Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SANS Specification No 563 or as defined in SANS Specification No 1460

Bolts

Bolts shall be in accordance with BS 4190 or SANS 135

Shear plates, tooth connectors and split rings

Shear plates, tooth connectors and split rings shall be in accordance with BSS 1759 : 1960 and installed in accordance with the CSIR Publication HOUT 468, "The Design, Manufacturing and Erection of Timber Trusses"

Washers

Square or round washers of the following dimensions shall be used with all bolts:

1 Bolts up to 8mm diameter: Washers shall be minimum 25mm wide of minimum 2,50mm thickness

2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness

3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness

Metal connector plates

Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel

The steel shall have a minimum yield strength of 228MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be not less than 275g/m2 commercial class hot dipped galvanising as per SANS 934 before stamping

All connector plates shall have been tested by the CSIR and be of a size capable of transmitting the forces between members of a truss without exceeding the design values published in the CSIR report

Truss construction

Trusses shall be constructed in jigs specially designed to unsure the correct profile, overhangs and cambers

Where metal connector plates are used all joints are to be close fitted butt joints made by precision pressing of the metal connector plates into each side of the joint

Truss design

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

Truss spacing

The truss centres shall be less than or equal to that as described in this bill for each respective truss

Truss pitch

The truss pitch shall be as described in this bill for each respective truss type

Truss loading

Trusses shall be designed for a live load of 0,50kN/m2 and dead load as specified below

Shop drawings, design and erection guarantee certificates

It will be expected from the contractor to timeously prepare, submit and obtain the necessary approvals from the principal agent in respect of the required shop drawings, design and erection guarantee certificates as specified

Dimensions

All dimensions given in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences

Erection

All trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber roof Trusses" as published by the Institute for Timber Construction and the CSIR, or the SABS Code of Practice "The Design, Manufacture and Erection of Timber Roof Trusses", or as designed and detailed by the designer

Design system

The design system as documented in this bill is based on the "TRi design 3000" system and all references given in the descriptions are related to specific type of trusses based on this design system

However, the contractors is to note that any design system of similar quality may be used subject to the prior written approval of the principal agent

Both the design and guarantee for the prefabricated timber roof construction complete, (excluding battens and/or purlins) to be designed, constructed and delivered to site by an approved firm of specialists, under a written guarantee, which shall be lodged with the principal agent for approval before the work commence

Rates

Tendered rates to include for the complete roof construction, including the design of the roof construction, all timber of required grade and type shown on the design, all cutting and waste, cutting to the exact lengths and end angles to manufacture the respective truss type, supply of all connector plates, prefabrication of trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works (cost of girder trusses to include cost of required metal truss hangers), etc

Prices for trusses must also include for: 1. Unloading and storing under cover and protecting from the weather, or handing over to others for unloading and storing as required

2. Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing and holding down and connections supplied by the truss fabricator for use by: 2.1 themselves (when responsible for erection) 2.2 others (where applicable)

3. Such site supervision as deemed necessary by the fabricator of the trusses to ensure that all the erection details have been complied with to his satisfaction

Fixing of purlins

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

GENERAL CARPENTRY AND JOINERY

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

Particle board

Particle board shall comply with the following specifications: a) SANS 1300 Particle board: exterior and flooring type b) SANS 1301 Particle board: interior type

Decorative laminate finish

Decorative laminate finishes shall be glued under pressure

All edge strips shall be butt jointed at junctions with adjacent similar finish

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

ROOFS ETC

Plate nailed timber roof truss construction

Unless otherwise described, the following specifications will apply:

1. All trusses to be with a 26° pitch at approximately 750mm centres

	2 The dead load consists of 420 x 332mm "Marley Monarch Antique" tiles on 38 x 38mm purlins at approximately 320mm centres with either 4 - 9.5mm fibre-cement or plasterboard nailed-up ceilings on 38 x 38mm brandering at 450mm centres or 40mm thick suspended ceilings				
	Sawn softwood				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	27		0,00
	DOORS ETC				
	Wrought meranti doors hung to steel frames				
3	40mm Framed and ledged batten door 910 x 2100mm high	No	2		0,00
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	4		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	4		0,00
					0,00
	SECTION NO. 6				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Finishes to ironmongery				

	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	6		0,00
2	50 x 25 LD polished barrel bolts	No	3		0,00
	"EN-SUITE" LOCKS				
	The following locks are to be suitable for master key operation				
3	50mm padlock	No	1		0,00
4	Bathroom lockset	No	4		0,00
5	Three-lever lockset	No	5		0,00
					0,00

SECTION NO. 6

BILL NO. 9

METALWORK

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Primer

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer All scratches, chips or blemishes to be made good on site after erection All rates tendered must make provision for this as no claim will afterwards be entertained.

Descriptions

No allowance has been made in the mass of steel for rolling margins, rivets, additional materials in welding, decorative or protective treatment nor constructional aids

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete

Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Welded joints and intersections

Prices of continuous rails shall include for welded joints in the length and prices of instersections shall include all cutting, mitring, scribing, shaping, etc

Bends, knees, ramps and the like to continuous rails shall be forged and rounded to approved radii

Prices for balustrades, burglar guards and the like shall include for framed and welded joints at instersections

Screws and bolts

Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless described otherwise, be used for srewing items items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium

Items fixed to adjoining metalwork with rivets, self-tapping screws, machine screws, etc shall include all necessary drillings

Where bolting is specified, projecting shank ends of bolts shall be cut off flush and left smooth

Door frames

Unless otherwise described, the following shall be applicable on all door frames: - Frames shall be double rebated suitable for 40mm thick doors

- One jamb of all frames for single doors shall be factory prepared for striking plate of mortice lock

- All frames shall be factory fitted with three washered butt hinges for each door

- All frames shall be treated with one coat factory applied metal primer complying with SANS Specification 909

Striking plates for door frames

Striking plates to be of chromium-plated type, unless otherwise described

Sealing of all abutments

All windows, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicon sealant along all joints and prices to allow therefore

STEEL GATES, SCREENS, ETC

GALVANISED STEEL GATES, SCREENS, ETC

Steel gates and frames

1	Single gate and frame for opening 910 x 2100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock	No	3		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	3		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	8		0,00
					0,00

SECTION NO. 6

BILL NO. 10

PLASTERING

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Preparatory work

Surfaces shall be clean and free from oil and thoroughly wetted directly before any plastering or other in-situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key

Finish

All coats of paving and plastering shall be executed in one operation without any blemishes

Granolithic

Granolithic shall be cured for at least seven days after laying Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid Granolithic shall be divided into panels not exceeding 6m2 with V-joints and deep trowel cuts

Granolithic to stairs shall include non-slip reedings to treads

	Skirtings				
	Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square juntion with floor finish				
	Plaster				
	All plaster, other than skim plaster, shall not be less than 10mm and not more than 20mm thick				
	General				
	Rates for plastering described as being on walls shall include concrete columns, beams and lintels flush with the face of the wall				
	Textured finishes				
	All textured finishes are to be applied to the satisfaction of the principal agent and executed by an approved firm of specialists, all strictly in accordance with the materials supplied and methods employed by the manufacturer				
	Preparatory work for textured finishes				
	Textured finishes to be applied to surfaces as described. Rates tendered are to include for all necessary priming, preparatory work, etc				
	All surfaces are to be inspected and approved by the principal agent prior any work is commenced				
	GRANOLITHIC				
	Untinted granolithic on concrete				
1	35mm Thick on floors and landings	m^2	22		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	114		0,00
					0,00
	SECTION NO. 6				
	BILL NO. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Regulations				

All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work on this contract

Prices

Prices must include for arranging joints at convenient points, embedding in concrete of for rough cutting around brickwork as the work proceeds

No distinction has been made between pipes chased in walls, fixed in ceilings, roofs, floors, columns, slabs, etc or for different finishes to these elements and has been described as "pipes".

Prices shall therefore include for all holderbats, brackets, clips, bands, etc and building in or chasing of same, holes through brickwork, concrete, etc and for making good facings, plaster, granolithic and other in-situ finishes as necessary

Prices to fixing of sanitary fittings etc shall include for setting up and fixing in position as described, joints to soil, waste and supply pipes as the case may be, making good finishes around and for protecting fittings from injury during subsequent building operations

Excavations

Prices for all excavations must include for necessary staging and for the risk of collapse of excavation side and also keeping excavations free from water

Laying, backfilling, bedding, etc. of pipes

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

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

Compacting

Filling for all types of pipes described as "under solid floors, etc." shall be done with approved backfilling and compacted to 93% Mod. AASHTO density, unless otherwise described

uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed

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 wall half hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bend 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" or similar and approved type. Capillary solder fittings shall comply with ISO 2016

Galvanised steel pipes and fittings

Galvanised steel pipes are to be "Tosa" or similar and approved medium class to SANS 62 and fittings are to be manufactured by "Tupy" or similar and approved

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level

Disinfection of water pipework

All pipework is to be disinfected in accordance with SANS 1200L

Reducing fittings

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

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

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

Stainless steel used for the manufacturing of urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be type 304 (18/8)

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

Flush pans

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

Sealing of abutments

All sanitary fittings abutting walls, tiled surfaces, vanity slabs, work tops, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

	Waste unions Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings **Timber backing boards** Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish **Exposed concrete surfaces** Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster **Testing** Descriptions for the testing of plumbing and drainage installations shall be deemed to cater for all testing apparatus, labour, etc. and shall be done strictly as directed by and in accordance to the Principal Agent's instructions, including for re-testing after taking out and making good all defective work to his entire satisfaction As-built drawings Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere) **RAINWATER DISPOSAL** **"Marley Streamline" uPVC**				
1	110mm Half-round roof gutters	m	11		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	4		0,00
8	"ATLAS" VIP 200 Code 222 AP C/W or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	5		0,00
	WASTE UNIONS ETC				

	"Cobra Watertech"				
9	32mm chromium plated basin waste union	No	4		0,00
	TRAPS ETC				
	"Marley"				
10	50mm Rubber "P" or "S" trap	No	4		0,00
	TAPS, VALVES, ETC				
	Brass				
11	15mm Brass hose bib-tap	No	4		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
12	50mm Pipes	m	20		0,00
13	110mm Vent pipes fixed to brickwork	m	12		0,00
	Extra over PVC-U soil and vent pipes for fittings				
14	50mm Bend	No	16		0,00
15	50mm Junction	No	4		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
16	15mm Pipes	m	20		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
17	15mm Fittings	No	24		0,00
					0,00
	SECTION NO. 6				
	BILL NO. 12				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				

	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m²	m²	2		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	5		0,00
					0,00
	SECTION NO. 6				
	BILL NO. 13				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Descriptions of painting shall be deemed to include complete preparation of new as well as existing surfaces, including patching and filling, sanding and primer on nail and screw heads Descriptions of painting on pipes, gutters, etc shall be deemed to include painting on holder bats, hangers, clips, clamps, etc Descriptions of painting on windows, frames, etc shall be deemed to include primer in rebates of sashes to be glazed				
	PAINTWORK, ETC TO NEW WORK				
	ON FLOATED PLASTER				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m²	114		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m²	8		0,00

	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	4		0,00
4	Windows	m^2	3		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	4		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	20		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00
8	Ironmongery				0,00
9	Metalwork				0,00
10	Plastering				0,00
11	Plumbing and drainage				0,00
12	Glazing				0,00
13	Paintwork				0,00
					0,00
	SECTION NO. 7				
	BILL NO. 1				
	GENERAL SITE WORKS, ETC (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				

Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 3

The Contractor is referred to the previous Section 2 for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this Bill, unless specifically otherwise described

General

The Contractor shall carry out the work with as little mess and noise possible and with a minimum of disturbance to the occupants. The Contractor shall provide proper protection and provide and erect any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent, and remove when directed

Site clearance

All rubble, rubbish, vegetable soil, shrubs, bush, trees, etc. shall be removed from the whole area and carted away off the construction site to a suitable dumping site, which has to be located by the Contractor, all to the full satisfaction of the Principal Agent

Filling (General)

It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the Principal Agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G6 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescibed percentage Mod AASHTO density

CBR and indicator tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

The Contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the Principal Agent prior commencement of any placement thereof and/or filling done therewith

Density tests

It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling to form building platforms, etc: 1 Test per 200m^2 plan area p each 150mm thick layer

Results of density tests executed are to be submitted to and approval obtained from the Principal Agent prior commencement of any subsequent fill layers and/or other work

Keeping excavations free from water:

No separate provision has been made in this Bill for measurement and payment for bailing, pumping or otherwise keeping excavations free from water during the construction process of the work measured in this Bill

Therefore, tenderers are to note that their tendered rates are to cater for the above-mentioned as no claims arising out of their failure to do so will afterwards be entertained

Carting away of excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall, unless specifically otherwise described, be deemed to include the loading and hauling of excessive or unsuitable excavated material to a suitable dumping site, which has to be located by the Contractor, off the construction site

The location of the intended dumping site will be subjected to the prior written approval of the Principal Agent

The Contractor shall also be liable to, upon completion, to rehabilitate all areas of the site which was disturbed during the construction phase due to construction activities, temporarily dumping/spoiling of excavated material, etc. It will be required from the Contractor to grade such areas to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the Principal Agent

Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained

Relevant SANS 1200 Specifications

The following relevant SANS 1200 Specifications shall be regarded applicable:

- Earth mattresses, building platforms, etc: SANS 1200 AA General (Small Works) SANS 1200 C Site clearance SANS 1200 DE Earthworks (Small works) SANS 1200 ME Sub-base SANS 1200 MFBase

All work related to the above-mentioned elements shall be done with materials specified and in according to methods prescribed by the relevant SANS 1200 referred to

SANS 1200 Specification (General)

	The SANS 1200 Specifications as referred to above were drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on work scheduled hereunder for this project All the specifications referred to above, although not issued with these Bills of Quantities, shall be deemed to form part of this document and shall be considered as applying to the performance of work to be completed in terms of this Section The Contractor shall obtain a copies of the said specifications from the South African Bureau of Standards and be kept on site at all times **Measurement and payment** Measurement and payment clauses as described in the above-mentioned SANS 1200 Specifications shall not apply to the work as set out in this Bill				
	EARTHWORKS				
	GENERAL SITE CLEARANCE ETC				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc	m^2	435		0,00
2	Stripping average 150mm thick layer of top soil and stockpiling on site	m^2	10		0,00
	BULK EXCAVATION, FILLING, ETC				
	Open face excavation over sloping site				
3	Open face excavation to form platforms and embankments and stockpiling on site	m^3	10		0,00
	Extra over bulk excavation in earth for excavation in				
4	Soft rock	m^3	1		0,00
5	Hard rock	m^3	1		0,00
	Extra over all excavations for carting away				
6	Extra over all excavations for carting away surplus material from excavations and/or stockpile on site to a dumping site to be located by the contractor	m^3	10		0,00
	Keeping excavations free of water				
7	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING				
	Earth filling obtained from the excavations including haulage approximately 800m from perimeter of excavations (not compacted)				
8	In prescribed stock piles on site	m^3	10		0,00

	Earth filling (G7 material) obtained and supplied by the contractor from commercial sources or borrow pits including haulage of 10km from perimeter of site , and compacted to 93% Modified AASHTO density				
9	Sub-base to from platforms and embankments	m^3	10		0,00
	STORMWATER DRAINAGE				
	(HAYLETT FORMULA WORK GROUP No. 146)				
	Mass concrete with a coarse aggregate of 19mm and a minimum compressive strength of 20MPa at 28 days				
10	V-shaped channel size 600mm wide x 300mm thick with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls in panels not exceeding 2m long with 12mm polystyrene movement joints with exposed edges raked out for a depth of 25mm and filled with bituminous compound including all necessary excavation and formwork	m	75		0,00
11	Extra over for fair stopped end	No	12		0,00
12	Extra over for T-intersection	No	6		0,00
	SOIL DRAINAGE				
	uPVC Class 6 pipes as drain pipes with couplings				
13	110mm Pipes	m	34		0,00
	WATER RETICULATION				
	Supply, Lay and bed uPVC pipe complete: (The rate shall exclude disinfection of pipes after completion of hydraulic pipe test)				
14	20mm Dia uPVC pipe class 6	m	23		0,00
	Fittings and specials - uPVC bends(Extra-over rate to items 3.1.1 to 3.1.6)				
15	20mm bend	No	12		0,00
16	20mm Tees	No	15		0,00
17	20 x 15mm Reducer	No	7		0,00
	TESTING				
18	Supply all the necessary apparatus, water etc. for and test the soil drainage and water supply systems to the satisfaction of the Representative/Agent and the Local Authority, rectify all defective work free of charge and leave in perfect order	Item	1		0,00
	THE FOLLOWING IN PLINTH CONSTRUCTION				
	WATER TANK PLINTH, ETC.				
	Excavation in earth not exceeding 2m deep				
19	Trenches	m^3	13		0,00

	Extra over all excavations for carting away				
20	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the Contractor	m^3	13		0,00
	Risk of collapse of excavations				
21	Sides of trench and hole excavations not exceeding 1,5m deep	m^2	60		0,00
	G7 filling obtained from excavations compacted to 95% Mod AASHTO density				
22	Under floors, steps, pavings, etc	m^3	18		0,00
	SOIL POISONING				
	Soil insectiside				
23	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	40		0,00
24	To bottoms and sides of trenches	m^2	105		0,00
	25MPa/19mm Unreinforced concrete cast against excavated surfaces				
25	Strip footings	m^3	5		0,00
	REINFORCED CONCRETE				
	25MPa/19mm concrete				
26	Surface beds on waterproofing	m^3	8		0,00
	TEST BLOCKS				
27	Making and testing 150 x 150 x 150mm concrete strenght test cube (Provisional)	No	8		0,00
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
28	Aprons, slabs, etc to falls	m^2	40		0,00
	Fabric reinforcement				
29	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m^2	40		0,00
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
30	Under surface beds	m^2	40		0,00
	(CPAP formula work group no. 116)				
	Brickwork of NFP bricks in class II mortar				

31	One brick walls	m^2	50		0,00
	Brickwork reinforcement				
32	150mm Wide reinforcement built in horizontally	m	142		0,00
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
33	Extra over brickwork for face brickwork	m^2	40		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
34	Coping on top of one brick wall	m	67		0,00
	Disinfecting				
35	Disinfecting water pipe and tank system	Item	1		0,00
	HDPE polyethelene Class 12 piping with 'Plasson' or other approved fittings				
36	32mm pipe and excavations not exceeding 1m deep	m	40		0,00
	Water storage tanks shall carry a minimum 8 year manufacturer guarantee, which certificate shall be handed over to the Client upon practical completion				
37	PVC Rainwater harvesting 5000 litre water tank, complete with vermin proof lid, inlets, outlets, etc. and anchored down with and including 4mm diameter galvanised mild steel wire loop double and fixed to top of tank with 15mm diameter rubber hose as sleeve, and anchored to top of concrete plinth with and including 4No. Y10 high tensile steel reinforcement rods cast into concrete plinth	No	5		0,00
	CONSTRUCTION OF WALKWAYS				
	SITE CLEARANCE				
	Site clearance				
38	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	113		0,00
	EXCAVATION, FILLING, ETC				
	Compaction of surfaces				
39	Rip up, scarify and compact of ground surfaces under floors etc., including scarifying for a depth of 150mm, breaking down over size material, adding suitable material where necessary and compacting to 93% MOD AASHTO density	m^2	113		0,00
	Protection against termites, ants, etc				
40	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	113		0,00
	FILLING, ETC.				

	Earth filling supplied by the contractor for complete site under building surfaces, parking areas, roadways, etc				
41	Sub-base import filling of G5 material	m^3	17		0,00
42	Base import filling of C4 material	m^3	17		0,00
43	Selected import filling of 7% soilcrete material	m^3	20		0,00
	DAMP PROOFING OF WALLS AND FLOORS				
	One layer of 250 micron "USB Green" or similar approved dampproof membrane sealed at laps with PVC self -adhesive tape				
44	Under surface beds.	m^2	113		0,00
	PAVING				
	60mm Thick interlocking paving blocks, in accordance with SANS 1058 laid on and including 20mm thick river sand compacted bedding layer with joints filled in with sand, compacted with a vibration compactor, laid in a herringbone pattern				
45	Paving including 50mm thick sand	m^2	113		0,00
46	Fair raking cutting	m	150		0,00
	PRECAST CONCRETE KERBS, ETC				
	Supply lay and joint concrete kerbing, Fig 6 Kerbs to SANS 927- 25 MPa strength precast concrete including 20/19mm MPa in-situ concrete haunching				
47	Straights and curves over 10 m radius	m	150		0,00
	Supply lay and joint concrete kerbing, Fig 7 semi mounted Kerbs to SANS 927- 25 MPa strength precast concrete including 15MPa/19mm insitu concrete haunching				
48	Straights and curves over 10 m radius	m	20		0,00
	RETAINING WALLS ETC (ALL TRADES)				
	PREAMBLES				
	For Preambles refer to the Standard Preambles to All Trades - WB20 - and the Supplementary Preambles SUP1 to SUP5 and any amplification/s stated hereunder				
	(CPAP WORK GROUP NO. 104) unless otherwise stated				
	EXCAVATIONS ETC				
49	Excavate in earth not exceeding 2m deep for trenches	m^3	10		0,00
50	Carting away surplus material from excavations and/or stock piles on site to a dumping site located by the contractor	m^3	10		0,00
51	Risk of collapse to sides of trench excavations not exceeding 1.5m deep	m^2	5		0,00

52	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	25MPa/19mm Unreinforced concrete cast against excavated surfaces				
53	Strip footings	m^3	4		0,00
	INTERLOCKING PLANTER BLOCKS				
	"Loffelstein TB 300 or equal approved"precast concrete interlocking planter blocks finished smooth on exposed surfaces				
54	Retaining structures with stepped face and curves set on 700x400mm high concrete base, set as required to suit slope as per detail. 300x 460x170mm high type "L300" Loffelstein interlocking retaining blocks laid in FLOWNET "KAYMAT" U14 GEOFABRIC or similar approved with horizontal bed joints to 65 degree slope, including 100mm Diameter NETLON (Geo) pipe, 40-75mm loose stone and an average of 600mm thick earth filling compacted to 90% MOD. AASHTO behind the blocks and fill the blocks with garden soil lightly tampered as the work proceeds as per engineers drawing.	m^2	10		0,00
	(CPAP WORK GROUP NO. 136) unless otherwise stated				
	GALVANISED MILD STEEL BALUSTRADES				
	"Steel studio" or equal approved horizontal rail system installed complete as per specialist.				
55	Three horizontal rail galvanised balustrade system 1000mm high above the retaining wall where the retaining wall reaches its highest point. Handrail to be 48,3 x 2mm DIA. galvanised mid steel hollow section pin mounted on galvanised mild steel balustrade, Extension rod to be 10mm DIA. mild steel rods, 48,3mm DIA. galvanised mild steel hollow sections Baluster with pre-drilled holes for horizontal rods to run through baluster. 40mm DIA. Hollow section horizontal rails and galvanised mild steel or aluminium cover plate 70mm DIA. Purpose made cover plate to cover core-drilled provision in wall at the base of the baluster as per the architect's details.	m	10		0,00
	(CPAP WORK GROUP NO. 146) unless otherwise stated				
	Drainage uPVC pipes				
56	50mm Diameter uPVC weep pipes 250mm long built through one brickwall	No	1		0,00
					0,00
	SECTION NO. 8				
	BILL NO. 1				
	PROVISIONAL SUMS				
	Provisional sums will only be used with the prior approval of the Development Bank of Southern Africa				
	NOTES:				

	1. The Contractor's attention is drawn specifically to the Principal Building Agreement Clause 20.0 (Nominated Sub-Contractors), Clause 21.0 (Selected Sub-Contractors) and Clause 22 (Work by Others) and to the related Clauses in Section 1, Bill No. 1 - Preliminaries 2. The Contractor's attention is drawn also to the definition of attendance on Nominated or Selected Sub-Contractors and of fuel, power and water for commissioning of mechanical and other specialised installations given in the JBCC Preliminaries 3. Where special attendance includes the provision of hoisting facilities for a Sub-Contractor then the Contractor shall:- * Ensure that the capacities of his hoisting equipment are sufficient to deal with the masses and the quantities of the items to be hoisted, * Schedule the times of availability of the hoisting equipment for each Sub-Contractor, Provide all necessary personnel to operate the hoisting equipment, all to enable the Sub-Contractor to execute the hoisting or lowering of his material, etc. using the facilities provided by the Contractor 4. Under no circumstances may any Provisional Amount, etc. be extended at an amount lower than the amount given in this Bill All the provisional sums cover supply of material and equipment and installation where applicable by firms of specialists. Provisional sums are net and do not include builder's discount, but the Tenderer may allow under "Profit" items any profit he considers necessary. The Tenderer is referred to Clause 87.1 and 87.2 in the "Preliminaries" section for the definition and adjustment of "General Attendance".					
	COMMUNITY LIAISON OFFICER					
1	Provide the amount of R40 000,00 (Forty Thousand Rands@ R10,000.00/month) for the appointment of Community Liaison Officer	Item	1			0,00
2	Allow for profit and attendance	%IT	10%			0,00
						0,00
	SECTION NO. 9					
	BILL NO. 1					
	OCCUPATIONAL HEALTH AND SAFETY					
	CONSTRUCTION SITE MANDATORY SIGNAGES					
1	Project sign Board	No	1			0,00
2	Construction site mandatory safety information board	No	1			0,00

3	Crucial responsible persons board	No	2		0,00
4	First aid kit location and first aider information	No	1		0,00
5	Emergency assembly point signs	No	1		0,00
6	Running man and direction arrows signs	No	10		0,00
7	Designated Smoking Area signs	No	2		0,00
8	No smoking & vaping	No	5		0,00
9	Urinating Caution	No	4		0,00
10	Ladies Toilet signs	No	1		0,00
11	Gents toilet signs	No	1		0,00
12	Eating Area signs	No	1		0,00
13	Storeroom signs	No	1		0,00
14	flammable liquids signs	No	1		0,00
15	Fire extinguisher and direction arrow	No	5		0,00
16	Emergency telephone list	No	3		0,00
17	Site Office signs	No	1		0,00
18	Guard room signs	No	1		0,00
19	Visitors signs	No	1		0,00
20	Laydown area signs	No	1		0,00
21	Waste disposal Area signs	No	1		0,00
22	Hazardous waste signs	No	1		0,00
23	Asbestos waste removal signs	No	1		0,00
24	Asbestos removal in progress signs	No	1		0,00
25	Excavation in progress signs	No	4		0,00
26	Demolition work in progress signs	No	2		0,00
27	Falling object risk signs	No	2		0,00
28	Scaffolding tag (green)	No	4		0,00
29	Scaffold Tag (red)	No	4		0,00
30	Safe Drinking water	No	2		0,00
31	Unsafe water	No	2		0,00
32	Place rubbish in bins	No	2		0,00
33	OHS charts	No	4		0,00

34	Fire extinguisher types	No	4		0,00
35	Air horn	No	2		0,00
36	Site rules	No	2		0,00
37	PPE caution	No	2		0,00
38	Emergency evacuation procedures	No	2		0,00
39	Emergency evacuation plan	No	2		0,00
40	welding area	No	1		0,00
41	Welding caution	No	1		0,00
42	20 litre safe drinking water and containers	No	1		0,00
43	soap hand washing station	No	2		0,00
44	Dewatering pits and ponding areas	No	2		0,00
45	Rehabilitation of site	No	2		0,00
46	she bins in female ablutions	No	2		0,00
47	safety & Educational charts	No	3		0,00
48	condoms	Item	1		0,00
49	servicing and maintaining male and female ablutions	Item	1		0,00
	CONSTRUCTION SITE FACILITIES, STORAGE AND EQUIPMENT				
50	Guard house	No	1		0,00
51	Rental of site office (container)	Item	1		0,00
52	Rental of Stores with shelving (container)	Item	1		0,00
53	Portable toilets x2	Item	1		0,00
54	Portable shower x2	Item	1		0,00
55	Eating area including seats	No	1		0,00
56	Male and Female changing facility	No	1		0,00
57	Notice board	No	1		0,00
58	Drinking water supply	No	1		0,00
59	Flammable liquid storage	No	1		0,00
60	Waste storage and waste bins	No	5		0,00
61	Shade cloth on GMS game fence on 80mm timber poles	Item	1		0,00
62	Laydown area barricading net	Item	1		0,00
63	First aid kit	No	1		0,00

64	Portable siren	No	1		0,00
65	Fire extinguisher	No	1		0,00
66	Breathalyser	No	1		0,00
67	Excavation barricading material	Item	1		0,00
	VISITOR'S PPE				
68	Hard Hat	No	10		0,00
69	Safety Vest	No	10		0,00
	SITE MANAGEMENT PPE				
70	Hard Hat	No	10		0,00
71	Safety Vest	No	10		0,00
72	Safety Shoes	No	10		0,00
	EMPLOYEE'S PPE				
73	Hard Hat	No	10		0,00
74	Safety Spectacle	No	10		0,00
75	Dust Mask	No	4		0,00
76	Ear Plug	No	1		0,00
77	Safety Shoes	No	10		0,00
78	Safety Vest	No	10		0,00
79	Overall – Reflective	No	10		0,00
80	Gloves – Chemical	No	2		0,00
81	Gloves – Hot Work	No	5		0,00
82	Gloves – Light Duty	No	6		0,00
83	Safety Harness	Item	1		0,00
84	Lifeline Kit	Item	1		0,00
85	Spill Kit	Item	1		0,00
86	Hand soap	Item	1		0,00
87	Soap dispenser	No	1		0,00
88	Toilet paper	Item	1		0,00
89	Condoms	Item	1		0,00
	ASBESTOS REMOVAL PPE				
90	Hard hat	Item	0		0,00

91	Full face mask	Item	0		0,00
92	Mask cartridge	Item	0		0,00
93	Waste bags	Item	0		0,00
94	Disposable Gloves	Item	0		0,00
95	Shoe cover	Item	0		0,00
96	Coverall	Item	0		0,00
	WELDER'S PPE				
97	Welding hood	No	2		0,00
98	Welding helmet	No	2		0,00
99	Safety Spectacle	No	2		0,00
100	Mask	No	0		0,00
101	Welding gloves	No	2		0,00
102	Welding boots	No	0		0,00
103	Welding spats	No	0		0,00
104	Welding long sleeve apron	No	0		0,00
105	Welding overall	No	0		0,00
	TRAININGS				
106	Allow for HIV/AIDS awareness and Implementation programmes Item	Item	1		0,00
107	Legal Liability	Item	1		0,00
108	OHS and Regulations	Item	1		0,00
109	Working at heights	Item	1		0,00
110	Material Handling	Item	1		0,00
111	Stacking and Storage	Item	1		0,00
112	Housekeeping	Item	1		0,00
113	Hand Tools	Item	1		0,00
114	Power Tools	Item	1		0,00
115	Allow for all compulsory health and safety awareness programme (e.g. Inductions, daily task instruction, toolbox Talks, Safety Promotions, Risk Assessment, First Aid, Fire Fighting, Work at heights, H&S related training, Legal Liability/SHE Representative)	Item	1		0,00
116	Noise Induced Hearing Loss	Item	1		0,00
117	Permit to Work (Hot work etc.)	Item	1		0,00

118	Emergency Evacuation, Preparedness & Response	Item	1		0,00
					0,00
	SECTION NO. 10				
	BILL NO. 1				
	EXPANDED PUBLIC WORKS PROGRAMME				
	PREAMBLES				
	Tenderers are advised to study the additional specification SL: Employment and training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Progress: National Labour Service as bound elsewhere in the bills of Quantities and then price bill accordingly TRAINING OF LABOURER WORKERS				
	(TARGET: 4 LABOURER WORKERS) Skills development and Technical training				
1	Skills development and technical training for labourer workers for an average of 10 days (ref. SL 11.01.02)	SUM	1		0,00
	TRAVELLING AND ACCOMMODATION DURING OFF SITE TRAINING:				
	Life skills training for 26 days (ref.SL 11.02.01)				
2	Travelling (based on 50km/labourer worker)	Item	0		0,00
3	Profit and attendance on items 1 & 2	Item	0		0,00
	EMPLOYMENT OF LABOURER WORKERS				
4	Employment of labour workers (4 labourers) (90days)	SUM	0		
	The unit of measurement shall be the number of labourer workers at the statutory labour rates of R275/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of labourer workers and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 10 months appointment for labourer workers PROVISION OF EPWP DESIGNED OVERALLS TO LABOURER AND INTERNSHIP WORKERS				
5	Supply EPWP designed overalls to labourers and intership workers (ref. SL 11.05.01) for 16 workers	Item	0		0,00
6	Profit and attendance on items 4 and 5 (ref. SL 11.05.02)	Item	0		0,00
	PROVISION OF WORKING EQUIPMENTS FOR LABOURERS INCLUDING INTERNSHIP STUDENTS				
7	Supply of working equipments to labourer workers. Specification to be supplied by the EPWP-NLS Serviced Provider for the respective trades (ref. SL 11.06.02)	Item	0		0,00
8	Profit and attendance on item 6 (ref. SL 11.05.02)	Item	0		0,00
					0,00

1	PRELIMINARIES				0,00
2	DEMOLITIONS				0,00
3	TOILET TYPE 10B				0,00
4	TOILET TYPE 6G				0,00
5	TOILET TYPE 3M3F1D				0,00
6	TOILET TYPE 3R1T1D				0,00
7	GENERAL SITE WORKS				0,00
8	PROVISONAL SUMS				0,00
9	OCCUPATIONAL HEALTH AND SAFETY				0,00
10	EXPANDED PUBLIC WORKS PROGRAMME				0,00
	Sub- Total	ST	0		0,00
	CONTINGENCY ALLOWANCE TO THE CONTRACT				
	Allow 10% for contingencies of sub-total (A) to be used as directed by the Principal Agent and deducted in whole or in part if not required	TAX	10%	0,00	0,00
	Sub- Total	ST	0		0,00
	ADD VAT @15%. RATE#	TAX	15%	0,00	0,00
	TOTAL CARRIED TO FORM OF OFFER				0,00

ITEM NO		QUANTITY	RATE	AMOUNT
	Bills of Quantities for ERADICATION OF PIT LATRINES IN KWAZULU-NATAL PROVINCE FOR THE INDEPENDENT DEVELOPMENT TRUST MUZOKHANYAYO SECONDARY SCHOOL			
	SECTION NO. 1			
	BILL NO.1			
	PRELIMINARIES AND GENERAL			
	BUILDING AGREEMENT AND PRELIMINARIES			
	The JBCC principal BUilding Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described			
	The JBCC Principal Building Agreement Contract Data form an integral part of this agreement			
	The ASAQS Preliminaries (November 2007 edition) published by the Association of South African Quantity Surveyors for use with the said JBCC Principal Building Agreement shall be deemed to be incorporated in these bills of quantities			
	The JBCC General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the JBCC Principal Building Agreement (Edition 6.2) shall be deemed to be incorporated in project specific preliminaries, amended as hereinafter described			
	The Preliminaries for use with the JBCC Series 2000 Principal Building Agreement (July 2007 edition) prepared by the Joint Building Contracts Committee, shall be deemed to be incorporated in these bills of quantities			
	The contractor is deemed to have referred to the above mentioned documents for the full intent and meaning of each clause			
	The relevant clauses in the above mentioned documents are hereinafter referred to by clause number and heading only			
	Where standard clauses or alternatives are not entirely applicable to this agreement such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the above mentioned documents			
	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 and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained			

	Supplementary preambles and/or specifications are incorporated in this Project specific preliminaries to satisfy the requirements of this project. Such supplementary preambles shall take precedence over the provisions of the General Preambles The contractor's prices for all items throughout these bills of quantities must take account of and include for all of the obligations, requirements and specifications given in the said Model Preambles and in any supplementary preambles **PRICING OF PRELIMINARIES** Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable") If Alternative A as set out in clause C 4.0 hereinafter is to be used for the adjustment of the preliminaries each item price is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time. Should the contractor select Option A in terms of Contract Data - Contractor to Employer (CE) for the purpose of adjustment of these preliminaries, the amount entered into the amount column in these preliminaries is to be divided into one or more of the three categories provided namely Fixed (F), Value Related (V) and Time Related (T) Should Option A, as set out in clause B10.3.1 hereinafter be used for the adjustment of preliminaries then each item priced is to be allocated to one or more of the three categories Fixed, Value Related or Time Related and the respective amounts entered in the spaces provided under each item Items not priced in these Preliminaries shall be deemed to be included elsewhere in these Bills of Quantities				
	SECTION A - PRINCIPAL BUILDING AGREEMENT				
	Interpretation				
1	Clause 1.0 - Definitions and interpretationF:..... V:..... T:.....	Item	1		0,00
2	Clause 2.0 - Law, regulations and notices F:..... V:.....T:.....	Item	0		0,00
3	Clause 3.0 - Offer and acceptance F:..... V:..... T:.....	Item	0		0,00
4	Clause 4.0 - Cession and assignment F:..... V:..... T:.....	Item	0		0,00
5	Clause 5.0 - Documents F:..... V:..... T:.....	Item	0		0,00
6	Clause 6.0 - Employer's agents F:..... V:..... T:.....	Item	0		0,00

	The principal agent shall:-monitor and control progress and scheduling-monitor all contract conditions, and-coordinate the efforts of the employer's agents, the contractor and subcontractorsThe powers conferred on the principal agent in terms of this clause and/or the exercising of these powers shall not be construed as removing or diminishing any of the obligations of the Contractor in terms of the Principal Building Agreement, whether financial, contractual or otherwise, nor shall the exercising of these powers create any privity of contract as between the Employer or his agents on the one part and the Contractor or subcontractors or suppliers on the other part The principal agent reserves the right to attend and participate in all contractor/subcontractor's meetings, to invite other employer's agents to attend such meetings at his discretion and to converse and chair any such meetings if the contractor is derelict in his duty in arranging such meetings to the degree of frequency and comprehensiveness dictated in the opinion of the project manager by the circumstances and exigencies of the construction process				
7	Clause 7.0 - Design responsibility F:..... V:..... T:.....	Item	0		0,00
	Insurances and Securities				
8	Clause 8.0 - Works riskF:..... V:..... T:.....	Item	0		0,00
9	Clause 9.0 - Indemnities F:..... V:..... T:.....	Item	0		0,00
10	Clause 10.0 - Insurances F:..... V:.....T:.....	Item	0		0,00
11	Clause 11.0 - Securities F:..... V:..... T:.....	Item	0		0,00
	Execution				
12	Clause 12.0 - Obligations of the parties F:..... V:..... T:.....	Item	0		0,00
13	Clause 13.0 - Setting out 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. F: ..... V:.....T:.....	Item	0		0,00
14	Clause 14.0 - Nominated subcontractors F:..... V:..... T:.....	Item	0		0,00
15	Clause 15.0 - Selected subcontractors Written proof is required from subcontract tenderers at tendering that they can meet the JBCC Selected Subcontract Agreement or other tender agreements and provide security in terms of the agreement. If the above is not provided the tender may not be accepted All amounts allowed under Provisional Amounts are intended to be awarded to Selected Subcontractors F:..... V:..... T:.....	Item	0		0,00

16	Clause 16.0 - Direct contractors F:..... V:..... T:.....	Item	0		0,00
17	Clause 17.0 - Contract instructions F:..... V:..... T:.....	Item	0		0,00
	Completion				
18	Clause 18.0 - Interim completion = n/s subcontract agreement F:..... V:..... T:.....	Item	0		0,00
19	Clause 19.0 - Practical completion F:..... V:..... T:.....	Item	0		0,00
20	Clause 20.0 - Completion in sections F:..... V:..... T:.....	Item	0		0,00
21	Clause 21.0 - Defects liability period and final completion F:..... V:..... T:.....	Item	0		0,00
22	Clause 22.0 - Latent defects liability period F:..... V:..... T:.....	Item	0		0,00
23	Clause 23.0 - Revision of date for practical completion F:..... V:..... T:.....	Item	0		0,00
24	Clause 24.0 - Penalty for late or non-completion F:..... V:..... T:.....	Item	0		0,00
25	Clause 19.0 - Temporary works and plantUser note?Insert details against this clause for any of the following where specifically required Subclause 19.1.1 - Enclosure of the works Subclause 19.1.2 - Office accommodation Clause 19.2 - Notice boardsF:..... V:..... T:.....	Item	0		0,00
26	Clause 23.0 - Contractor's domestic subcontractorsF:..... V:..... T:.....	Item	0		0,00
27	Clause 11.0 - Special insurances F:..... V:..... T:.....	Item	0		0,00
28	Clause 16.0 - Site and accessUser noteInsert details against this clause for any of the following where specifically required Clause 16.7 - Known services Clause 16.8 - Protection of trees F:..... V:..... T:.....	Item	0		0,00
29	Clause 6.0 - Contractor's site representative F:..... V:..... T:.....	Item	0		0,00
30	Clause 7.0 - Compliance with laws and regulations F:..... V:..... T:.....	Item	0		0,00
	Payment				
31	Clause 25.0 - Payment F:..... V:..... T:.....	Item	0		0,00
	Objective (A2)				

32	Clause 26.0 - Adjustment to the contract value and final account F:..... V:..... T:.....	Item	0		0,00
33	Clause 27.0 - Recovery of expense and or loss F:..... V:..... T:.....	Item	0		0,00
	Suspension and Termination				
34	Clause 28.0 - Suspension by the contractor F:..... V:..... T:.....	Item	0		0,00
35	Clause 29.0 - Termination F:..... V:..... T:.....	Item	0		0,00
	Dispute Resolution				
36	Clause 30.0 - Dispute resolution F:..... V:..... T:.....	Item	0		0,00
	Agreement				
37	No Clause	Item	0		0,00
	The agreement comprises the entire contract between the parties. No representations, terms, conditions or warranties not contained in this agreement shall be binding on the parties. No agreement or addendum varying, adding to, deleting or terminating this agreement including this clause shall be effective unless reduced to writing and signed by the duly authorised representatives of the parties. User note All information for this clause requires consultation with the contractor. The principal agent should not pre-select any of the alternatives available to the contractor				
38	Contractual agreement	Item	0		0,00
	The required information of the contracting parties and the amount of the accepted contract sum shall be inserted in the contractual agreement for signature of the agreement by the contracting parties				
	SECTION B - GENERAL PRELIMINARIES				
	Definitions and interpretation				
39	1.1 - Definitions F:..... V:..... T:.....	Item	0		0,00
40	1.2 - Interpretation F:..... V:..... T:.....	Item	0		0,00
	Documents				
41	2.1 - Checking of documents F:..... V:..... T:.....	Item	0		0,00
42	2.2 - Provisional bills of quantities N/A F:..... V:..... T:.....	Item	0		0,00
43	2.3 - Availability of construction information F:..... V:..... T:.....	Item	0		0,00

44	2.4 - Ordering of materials and goods F:..... V:..... T:.....	Item	0		0,00
	Previous work and adjoining properties				
45	3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item	0		0,00
46	3.2 - Previous work - defects F:..... V:..... T:.....	Item	0		0,00
47	3.3 - Inspection of adjoining properties F:..... V:..... T:.....	Item	0		0,00
	The site				
48	4.1 - Handover of site in stages F:..... V:..... T:.....	Item	0		0,00
49	4.2 - Enclosure of the works F:..... V:..... T:.....	Item	0		0,00
	The contractor shall provide, erect, alter as necessary, maintain, remove and make good on completion of the works suitable hoardings, complete with gantries, fans, safety screens, barriers, guard railing, access gates, covered gangways, steel sections at crane lifts, splayed corners, returned ends, etc as indicated on the drawings and as necessary for the enclosure of the works and the protection of the public, all to the satisfaction of the Representative/Agent and the Local Authority				
50	4.3 - Geotechnical and other investigations F:..... V:..... T:.....	Item	0		0,00
51	4.4 - Encroachments F:..... V:..... T:.....	Item	0		0,00
52	4.5 - Existing premises occupied F:..... V:..... T:.....	Item	0		0,00
53	4.6 - Services - Known F:..... V:..... T:.....	Item	0		0,00
	Management of contract				
54	5.1 Management of the works F:..... V:..... T:.....	Item	0		0,00
55	5.2 Progress meetings F:..... V:..... T:.....	Item	0		0,00
56	5.3 Technical meetings F:..... V:..... T:.....	Item	0		0,00
	Samples, shop drawings etc				
57	6.1 - Samples of materials F:..... V:..... T:.....	Item	0		0,00
58	6.2 - Workmanship samples F:..... V:..... T:.....	Item	0		0,00

59	6.3 - Shop drawings F:..... V:..... T:.....	Item	0		0,00
60	6.4 - Compliance with manufacturer's instructionsF:..... V:..... T:.....	Item	0		0,00
	Deposits and fees				
61	7.1 - Deposits and fees F:..... V:..... T:.....	Item	0		0,00
	Temporary services				
62	8.1 - Water F:..... V:..... T:.....	Item	0		0,00
63	8.2 - Electricity F:..... V:..... T:.....	Item	0		0,00
64	8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item	0		0,00
65	8.4 - Communication facilities F:..... V:..... T:.....	Item	0		0,00
	Prime cost amounts				
66	9.1 - Responsibility for prime cost amounts F:..... V:..... T:.....	Item	0		0,00
	Attendance on subcontractors				
67	10.1 - General attendance User note?General attendance is defined in the n/s subcontract agreementInsert details against this clause or where provisional sums are stated for any special attendance where specifically required for each n/s subcontractor separatelyF:..... V:..... T:.....	Item	0		0,00
68	10.2 - Special attendance User note?General attendance is defined in the n/s subcontract agreementInsert details against this clause or where provisional sums are stated for any special attendance where specifically required for each n/s subcontractor separatelyF:..... V:..... T:.....	Item	0		0,00
	General				
69	11.1 - Protection of the works F:..... V:..... T:.....	Item	0		0,00
70	11.2 - Protection/isolation of existing works and works occupied in sections F:..... V:..... T:.....	Item	0		0,00
71	11.3 - Security of the works F:..... V:..... T:.....	Item	0		0,00
72	11.4 - Notice before covering work F:..... V:..... T:.....	Item	0		0,00

73	11.5 - Disturbance F:..... V:..... T:.....	Item	0		0,00
74	11.6 - Environmental disturbance F:..... V:..... T:	Item	0		0,00
75	11.7 - Works cleaning and clearing F:..... V:..... T:.....	Item	0		0,00
76	11.8 - Vermin F:..... V:..... T:.....	Item	0		0,00
77	11.9 - Overhand work F:..... V:..... T:.....	Item	0		0,00
78	Clause 9.10 Enclosure of works F: ..... V: ..... T:	Item	0		0,00
79	Clause 9.11 Sheds F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain, and remove on completion of the works temporary sheds for the proper storage of materials				
80	11.10 Tenant installtions by direct contractors F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove on completion of the work an office for the exclusive use of the Representative/Agent, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board, and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times				
81	11.11 Advertising F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove if no longer required all plant and scaffolding necessary for the execution of the worksScaffolding will not be permitted to be erected from buildings on adjacent premises				
82	Clause 9.14 - Notice Board F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick all round outer edges and projecting 12mm from face of boarding and rounded on front edge The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines deep blue. All wording shall be inscribed in deep blue painted sans serif lettering Sub-contractor's individual boards will be allowed on the site subject to the written approval of the Representative/Agent				
83	Clause 9.10 Enclosure of works F: ..... V: ..... T:	Item	0		0,00
84	Sheds F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain, and remove on completion of the works temporary sheds for the proper storage of materials				

85	Office for the representative / agent F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove on completion of the work an office for the exclusive use of the Representative/Agent, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board, and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times				
86	Plant and Scaffolding F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, maintain and remove if no longer required all plant and scaffolding necessary for the execution of the works Scaffolding will not be permitted to be erected from buildings on adjacent premises				
87	Notice Board F: ..... V: ..... T:	Item	0		0,00
	The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick all round outer edges and projecting 12mm from face of boarding and rounded on front edge The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines deep blue. All wording shall be inscribed in deep blue painted sans serif lettering Sub-contractor's individual boards will be allowed on the site subject to the written approval of the Representative/Agent				
	Schedule of variables				
	Information necessary for elections 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 no specific requirements are expected or that the clause is not relevant to this specific contract				
	- Provisional bills of quantities [clause 2.2] The quantities are provisional? No				
	- Availability of construction documentation [clause 2.3] Construction documentation is complete? Yes				
	- Previous work - dimensional accuracy [clause 3.1]				
	- Previous work - defects [clause 3.2]				
	- Inspection of adjoining properties [clause 3.3]				
	- Water [clause 8.1] Option A (by contractor) yes Option B (by employer - free of charge) no Option C (by employer - metered) no				
	- Electricity [clause 8.2] Option A (by contractor) yes Option B (by employer - free of charge) no Option C (by employer - metered) no				

	- Ablution and welfare facilities [clause 8.3] Option A (by contractor) yes Option B (by employer) no - Communication facilities [clause 8.4] Telephone yes Facsimile yes E-mail yes - Protection of the works [clause 11.1] - Protection/isolation of existing works and works occupied in sections [clause 11.2] Protection/isolation is required Yes - Disturbance [clause 11.5] - Environmental disturbance [clause 11.6] **SECTION C - SPECIFIC PRELIMINARIES** User note Selected examples of typical clauses are provided to indicate ways of describing such clauses. Users must delete, adapt or add to these examples to suit their particular circumstances				
88	Site instructions 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 F:..... V:..... T:.....	Item	0		0,00
89	Warranties for material and workmanship Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the firm supplying the materials and/or doing the work and shall deliver same to the principal agent on the certified completion of the contract. The warranty shall state that workmanship, materials and installation are warranteed for a specified 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 firm 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 construction of the building in which case the responsibility for replacement shall rest entirely with the contractor F:.....V:.....T:.....	Item	0		0,00
90	Co-operation of contractor for cost management 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 F:.....V:.....T:.....	Item	0		0,00

91	Propping of floors below 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 F:..... V:..... T:.....	Item	0		0,00
92	Testing of windows for watertightness 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 F:..... V:..... T:.....	Item	0		0,00
93	Testing of flat roof waterproofing for watertightness 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 36 hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofingF:..... V:..... T:.....	Item	0		0,00
	LABOUR DESK				
94	The contractor shall establish a labour desk on site with a dedicated office with and including a desk 2 chairs and electricity. From the labour desk (CLO), the contractor will appoint a dedicated community laison officer at a monthly gross remuneration as indicated, subject to all statury deductions. The community laison officer will be employed by and will report to the contractor, who will in turn forwad such reports to the Principal Agent. F:..... V:..... T:.....	Item	0		0,00
	HEALTH AND SAFETY ACT (Act 85 of 1993)				
95	Compliance with th Occupational Health and safety Act (Act 85 of 1993) and all relevant and applicable regulations, especially the Construction Health & Safety Act (Act 85 of 1993) (as amended) for the duration of the contract.	Item	0		0,00
96	Provision of OH & S plan prior to commencement of works as well as a full consolidated copy of such plan at the completion of construction work inclusive of a record of all drawings, designs, copies of statutory appointments, material used and other similarinformation concerning completed contract	Item	0		0,00
97	Implemetantion of Approved OHS plan for duration of contract, including daily/ weekly inspectios, monthly meeting, required audits, consolidated health and safety file, etc.	Item	0		0,00
98	Registration with compensation fund or approved / licenced compensation insurer.	Item	0		0,00
99	Fulltime competent employee of the contractor as safety construction supervisor and assistant safety construction supervisors for duration of contract.	Item	0		0,00
100	Health and safety training and induction requirements of all persons entering the site.	Item	0		0,00

	HIV AND AIDS POLICY				
101	Observation of all legislation, policies and by-laws regulating the "AIDS" endemic and "HIV" prevention, treatment and observation.	Item	0		0,00
	COMMUNITY DEVELOPMENT PROGRAMME				
	IDT' has taken a strategic decision to promote community development in line with it's SCM Policy. Based on the above tenderer must promote Supplier Development through involving Small Business Enterprises residing within the Municipal ward. Special reference is made to the contract Data section in terms of sub-contracting				
	The Employer shall determine the amount to be paid to the Enterprise Development Co-Ordinator for the Contract Participation Goal (CPG) on the contract and this amount shall be stated under the section Enterprise Development				
	The contractor shall be paid as follows: These are recommended rates, Client may change depending on the location of the project, complexity etc.				
102	Needs analysis and enterprise development plan per targeted enterprise	Item	0		0,00
103	Mentor and interim reporting per targeted enterprise, report will be required per quarter.	Item	0		0,00
104	Project completion report per targeted enterprise	Item	0		0,00
	SUMMARY OF CATEGORIES				
	Category : Fixed R..... Category : Value R..... Category : Time R.....				
					0,00
	SECTION NO. 2				
	BILL NO. 1				
	DEMOLITIONS				
	PREAMBLES				
	For preambles see " Specifications of materials and methods to be used PW371"				
	SUPPLEMENTARY PREAMBLES				

STRUCTURAL WORK TO BE DEMOLISHED: Where structures which support existing roof structures are to be demolished the contractor must provide temporary support until new supporting structures are in place. OLD MATERIALS TO BECOME THE PROPERTY OF THE CONTRACTOR: Old materials from alterations, except where described to be re-used or handed over, become the property of the contractor who must allow credit for same in the Final Summary. OLD MATERIALS TO BE CARTED AWAY: Old materials from the alteration, except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site. OLD MATERIALS NOT TO BE RE-USED: None of the old materials are to be used for new work except where specifically described being set aside for re-use. HANDING OVER OF MATERIALS: Where certain materials or articles from demolitions or articles are described as to be handed over by the Contractor to the Regional Representative or Representative/Agent, such materials or articles shall be properly stored by the contractor, until handing over thereof. The contractor must obtain an official receipt listing the contractor fails to submit the submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Department for the full replacement value thereof, which amount will be deducted from any monies due to the contractor. DEALING WITH HAZARDOUS MATERIALS All hazardous materials, e.g. Asbestos, etc. must be removed and disposed off site by a specialist firm as per government regulations and environmental laws. ALTERATIONS AND DEMOLISHING All works demolished or removed, surfaces shall be prepare to new.

Allow for the following requirements to the satisfaction of the Principal Agent

Existing structures In taking down and removing existing work, the utmost care shall be observed to prevent any structural or other damage to the adjoining buildings and the Contractor shall provide all shoring, needling, strutting, etc. to ensure the stability of all structures during the alteration work. Any damage, deforming and/or defaced to the structure and/or building as well as the rectification of same will be for the Contractor's account.

Existing Services Special care shall be exercised during the progress of the work to ensure that electrical installation, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Representative Agent if any disconnection or alterations become necessary. Any damage to such services shall be to the contractors account

Dust and noise The Contractor is to take all necessary precautions, to minimise noise levels and frequently watering of the works to minimise any nuisance from dust and to ensure the least interference with the general routine of the occupants and operation of the premises including all necessary labour, materials, etc. for so doing and

Disposal of debris The Contractor shall be responsible for the regular cleaning away all rubble, debris, rubbish, unusable materials, etc. as the work proceeds and for leaving the works in a clean and satisfactory state upon completion suitable for use and occupation, including all necessary labour, materials or plant, etc. for so doing

	Old materials Old materials from the alterations, except where described shall remain the property of the client. Old materials to be carted away Old materials from the alterations, except where described to be re-used or handed over, as well as all rubbish, etc. must regularly be carted away from site and not be allowed to accumulate on or around the site. Handing over of materials Where certain materials or articles from demolitions or alterations are described as to be handed over by the Contractor to the Representative/ Agent, such materials or articles shall be properly stored by the Contractor until handing over thereof. The Contractor must obtain an official receipt listing materials or articles and dates of handing over. If the Contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Client for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor. Temporary support to openings through existing walls Making openings, altering openings in existing walls and removing lintels above existing openings shall be done with the utmost care to prevent any structural damage. All necessary supports, propping, shoring, needling strutting, turning pieces, etc. to wall openings is deemed to be included in the Contractor's rates. Electrical And Mechanical Where items include for taking down electrical and mechanical fittings the disconnection and making safe electrically is deemed to be included. Contractor to note items with barcodes (asset numbers) cannot be removed without prior arrangement with authorities NOTE:- Contractor to note that items with barcodes, cannot be disposed or removed from site prior to arranging with Client Site visit Tenderers are to visit and view the site and existing structures to be demolished to thoroughly acquaint themselves with the nature of demolitions, the nature and extent of the work and the conditions under which the works are to be done **DEMOLITIONS ETC** Note: Unless otherwise stated, all materials from the lterations and demolitions will belong to the builder. The builder should allow for the removal of all debris from site and keep the site clean at all times **Demolishing and removing**				
1	Desludge 10.5 x 4.6 x 2.5m High overall comprising of brick wall, concrete foundation, sanitary fittings, 5 x 2 x 2m Deep pit with brick lining, all materials to be cart off site to a dumping site approved by the Environmental Engineer. NOTE: Pit full of sludge/human waste, etc. Pit to be backfilled and compacted to 93% Mod AASHTO density to the satisfaction of the Civil Engineer.(4G Ablution Block)	No	5		0,00
					0,00
	SECTION NO. 3 **BILL NO. 1** **EARTHWORKS (PROVISIONAL)**				

	The following are typical examples of descriptions of "nature of ground"				
	Nature of ground				
	The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, all of which will be deemed as "earth", but possibly interspersed with "hard rock"				
	A soils investigation has been carried out on the site by the engineer and the report is annexed to these bills of quantities. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"				
	Subterranean water				
	Subterranean water is expected The water table is expected to vary between approximately 2m and 6m below natural ground level. The removal of subterranean water is given separately				
	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				
	Filling and layer work materials				
	References such as "G1", "G2", etc and "C1", "C2", etc in descriptions of filling and layer work materials refer to corresponding references in the document "Guidelines for Road Construction Materials. TRH 14 : 1985" compiled by the Committee of State Road Authorities and the properties set out therein for each kind shall be applicable to the respective materials described hereinafter				
	Testing				
	Prices for filling are to include for all necessary density and other tests				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	100		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to ?% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00

	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	26		0,00
4	Basements or Pit	m^3	24		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to ?% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	32		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	76		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	32		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	30		0,00
14	Under floors, steps, pavings, etc	m^3	11		0,00
15	Backfilling to trenches, holes, etc	m^3	23		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	18		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with ? passes of a ? ton vibratory roller	m^2	100		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				

18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	29		0,00
19	To bottoms and sides of trenches etc	m^2	92		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 3

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests for approval. The testing shall be undertaken by an approved independent firm or institution nominated by the contractor (test cubes are measured separately)

Breeze concrete

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); 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

Lightweight concrete

Lightweight concrete shall have a density of 600kg/m3 for the top 50mm and 400kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Formwork

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

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

Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described				
	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"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	4		0,00
2	Surface beds on waterproofing	m^3	4		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	5		0,00
4	Surface beds on waterproofing	m^3	7		0,00
5	Pit toilet base	m^3	3		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	8		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				
9	Surface beds, slabs, etc	m^2	42		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	13		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	4		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	1,00		0,00

	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	50		0,00
					0,00

SECTION NO. 3

BILL NO. 3

PRECAST CONCRETE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes

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

General

Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming

PRECAST CONCRETE SLABS ETC

Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.

1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00

SECTION NO. 3

BILL NO. 4

MASONRY

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Bagged and sealed walls

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 bitumen emulsion waterproofing coating

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour

Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

BLOCKWORK

Concrete masonry units

Blocks are to be either solid or hollow modular dense concrete masonry units having a compressive strength of 7MPa

Wall ties for blockwork

Wall ties shall be polypropylene ties complying with BS 76377. Ties for hollow walls shall be of sufficient length to allow not less than 75mm of each end to be built into the blockwork. Ties are to be spaced at intervals of not more than 1m in the horizontal direction and not more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other

Blockwork

Blockwork shall comply with SANS 10145 "Concrete Masonry Construction"

Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole

Standard complementary blocks

Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary

DECORATIVE BLOCKS

Blocks shall be of approved manufacture, sound, well burnt or cured and uniform and true in size, shape and colour

BRICKWORK

FOUNDATIONS (PROVISIONAL)

	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
	SUPERSTRUCTURE				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	21		0,00
2	One brick walls	m^2	92		0,00
3	One brick walls in beamfilling	m^2	10		0,00
	BRICKWORK SUNDRIES				
	2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	70		0,00
5	110mm Wide reinforcement built in horizontally	m	401		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	14		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	2		0,00
	FACE BRICKWORK				
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	92		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	10		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	7		0,00
12	220mm Wide sills set sloping and slightly projecting	m	2		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	32		0,00
					0,00

	SECTION NO. 3				
	BILL NO. 5				
	WATERPROOFING				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene damp proof course (SANS 952-1985 type B)				
1	In walls	m^2	8		0,00
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
2	Under surface bedS	m^2	23		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On walls	m^2	32		0,00
4	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	5		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 6				
	ROOF COVERINGS, CLADDINGS, ETC				
	Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade				
	PROFILED METAL SHEETING AND ACCESSORIES				
	Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium				
	0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins				
1	Roof covering with pitches not exceeding 25 degrees	m^2	55		0,00

2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	ROOF AND WALL INSULATION				
	Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	48		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 7				
	CARPENTRY AND JOINERY				
	Fixing				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete				
	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				
	Decorative thermosetting plastic laminate covering				
	Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish				
	PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC				
	SUPPLEMENTARY PREAMBLES				
	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	Sawn softwood grade				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless (socketed?) barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	33		0,00
	DOORS ETC				
	Wrought hardwood flushback doors with sapele veneer hung to steel frames				

3	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	1		0,00
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	40mm Door 910 x 2100mm high	No	4		0,00
	FRAMES ETC				
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought hardwood				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	5		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 8				
	IRONMONGERY				
	Proprietary items				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration				
	LOCKS				
	Keys				
	Unless otherwise described locks shall have two keys each				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	6		0,00
2	50 x 25 LD polished barrel bolts	No	3		0,00
	"EN-SUITE" LOCKS				
	The following locks are to be suitable for master key operation				
3	50mm padlock	No	1		0,00
4	Bathroom lockset	No	4		0,00
5	Three-lever lockset	No	5		0,00
	HANDLES				

	Manufactured by "SOLID"				
6	Anodised aluminium pull handle	No	5		0,00
					0,00

SECTION NO. 3

BILL NO. 9

METALWORK

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria Glazing shall comply with SAGGA regulations. Glass shall be type ? laminated performance glass as shown on the window schedules/drawings appended to these bills of quantities (as described in the headings to window descriptions?). Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed For purpose made windows and doors, refer to drawings annexed to (issued separately with?) these bills of quantities

The following certificates shall be provided prior to commencement of site work:1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product 2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process 4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years

GALVANISED STEEL GATES, SCREENS, ETC

	Steel gates and frames				
1	Single gate and frame for opening 910 x 2 100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	1		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	5		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	10		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 10				
	PLASTERING				
	The following preambles are to be included only when specifically required by the principal agent				
	GRANOLITHIC				
	Untinted granolithic on concrete				
1	35mm Thick on floors and landings	m^2	44		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	121		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL?)				
	Wire gratings				
	Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings				
	Stormwater channels				

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

French drains

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, "?" geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks

Descriptions of proprietary type 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 and disposal of surplus material on site

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

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0) Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8) Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8) Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

Copper pipes

Pipes shall be hard drawn and half-hard pipes of the class described. 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 "?" type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and 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

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc, casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

Disinfection of water pipework

Water pipework is to be disinfected at completion

Laying, backfilling, bedding, etc of pipes

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately) Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

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

	Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)				
	Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)				
	As-built drawings				
	Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	"Marley Streamline" uPVC				
1	110mm Half-round roof gutters	m	18		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	3		0,00
8	"Charlog" VIP 200 or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	4		0,00
9	320 x 350mm Type 490mm curved bowl urinal fitted with waterless urinal cold water fittings, and mounted with brackets on wall	No	6		0,00
	WASTE UNIONS ETC				
10	32mm chromium plated basin waste union	No	3		0,00
	TRAPS ETC				
11	50mm Rubber "P" or "S" trap	No	3		0,00
	TAPS, VALVES, ETC				
12	15mm Brass hose bib-tap	No	3		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				

13	50mm Pipes	m	20		0,00
14	110mm Vent pipes fixed to brickwork	m	12		0,00
	Extra over PVC-U soil and vent pipes for fittings				
15	50mm Bend	No	16		0,00
16	50mm Junction	No	3		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
17	15mm Pipes	m	20		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
18	15mm Fittings	No	24		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 12				
	GLAZING				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m^2	m^2	2		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	4		0,00
					0,00
	SECTION NO. 3				
	BILL NO. 13				
	PAINTWORK				
	SUPPLEMENTARY PREAMBLES				

	PREPARATORY WORK TO EXISTING WORK				
	PAINT SPECIFICATIONS				
	All painting shall be done in accordance with "?" specifications unless otherwise described				
	COLOURS				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	121		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	10		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	4		0,00
4	Windows	m^2	2		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	4		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	21		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00

8	Ironmongery			0,00
9	Metalwork			0,00
10	Plastering			0,00
11	Plumbing and drainage			0,00
12	Glazing			0,00
13	Paintwork			0,00
				0,00

SECTION NO. 4

BILL NO. 1

EARTHWORKS (PROVISIONAL)

The following are typical examples of descriptions of "nature of ground"

Nature of ground

The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, all of which will be deemed as "earth", but possibly interspersed with "hard rock"

A soils investigation has been carried out on the site by the engineer and the report is annexed to these bills of quantities. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"

Subterranean water

Subterranean water is expected The water table is expected to vary between approximately 2m and 6m below natural ground level. The removal of subterranean water is given separately

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

Filling and layer work materials

References such as "G1", "G2", etc and "C1", "C2", etc in descriptions of filling and layer work materials refer to corresponding references in the document "Guidelines for Road Construction Materials. TRH 14 : 1985" compiled by the Committee of State Road Authorities and the properties set out therein for each kind shall be applicable to the respective materials described hereinafter

	Testing				
	Prices for filling are to include for all necessary density and other tests				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	93		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to ?% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00
	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	38		0,00
4	Basements or Pit	m^3	51		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to ?% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	50		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	1		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	114		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	50		0,00
	Keeping excavations free of water				
12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				

	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	28		0,00
14	Under floors, steps, pavings, etc	m^3	9		0,00
15	Backfilling to trenches, holes, etc	m^3	37		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	28		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with ? passes of a ? ton vibratory roller	m^2	93		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	22		0,00
19	To bottoms and sides of trenches etc	m^2	144		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 4

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests for approval. The testing shall be undertaken by an approved independent firm or institution nominated by the contractor (test cubes are measured separately)

Breeze concrete

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); 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

Lightweight concrete

	Lightweight concrete shall have a density of 600kg/m3 for the top 50mm and 400kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm				
	Formwork				
	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				
	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				
	Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described				
	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described				
	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"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
1	Strip footings	m^3	6		0,00
2	Surface beds on waterproofing	m^3	6		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa concrete				
3	Strip footings	m^3	8		0,00
4	Surface beds on waterproofing	m^3	5		0,00
5	Pit toilet base	m^3	6		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	6		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	12		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				

9	Surface beds, slabs, etc	m^2	51		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	29		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	7		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	1,07		0,00
	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	73		0,00
					0,00

SECTION NO. 4

BILL NO. 3

PRECAST CONCRETE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes

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

General

Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming

PRECAST CONCRETE SLABS ETC

Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.

1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00

SECTION NO. 4

BILL NO. 4

MASONRY

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Bagged and sealed walls

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 bitumen emulsion waterproofing coating

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour

Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

BLOCKWORK

Concrete masonry units

Blocks are to be either solid or hollow modular dense concrete masonry units having a compressive strength of 7MPa

Wall ties for blockwork

Wall ties shall be polypropylene ties complying with BS 76377. Ties for hollow walls shall be of sufficient length to allow not less than 75mm of each end to be built into the blockwork. Ties are to be spaced at intervals of not more than 1m in the horizontal direction and not more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other

Blockwork

Blockwork shall comply with SANS 10145 "Concrete Masonry Construction"

	Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole				
	Standard complementary blocks				
	Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary				
	DECORATIVE BLOCKS				
	Blocks shall be of approved manufacture, sound, well burnt or cured and uniform and true in size, shape and colour				
	BRICKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
	SUPERSTRUCTURE				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	39		0,00
2	One brick walls	m^2	128		0,00
3	One brick walls in beamfilling	m^2	16		0,00
	BRICKWORK SUNDRIES				
	2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	131		0,00
5	110mm Wide reinforcement built in horizontally	m	630		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	24		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	2		0,00
	FACE BRICKWORK				

	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	138		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	16		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	11		0,00
12	220mm Wide sills set sloping and slightly projecting	m	2		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	50		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 5				
	WATERPROOFING				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m^2	12		0,00
	One layer 375 (500, 1000?) micron orange polyethylene waterproof sheeting (SANS 952-1985 type A) sealed at laps with PVC self-adhesive tape				
2	Under surface bedS	m^2	16		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On walls	m^2	50		0,00

4	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	8		0,00
					0,00

SECTION NO. 4

BILL NO. 6

ROOF COVERINGS, CLADDINGS, ETC

Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade

PROFILED METAL SHEETING AND ACCESSORIES

0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins

1	Roof covering with pitches not exceeding 25 degrees	m^2	45		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00

ROOF AND WALL INSULATION

Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3

3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	39		0,00
					0,00

SECTION NO. 4

BILL NO. 7

CARPENTRY AND JOINERY

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete

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

Decorative thermosetting plastic laminate covering

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC

SUPPLEMENTARY PREAMBLES

	Trusses are at maximum ?mm centres				
	Roof covering is type ? on purlins (battens?)				
	Ceiling is ?mm sheeting (with skimming?) on ? x ?mm brandering				
	References given in descriptions refer to the respective types of trusses detailed on the architect's/engineer's drawings numbered ? annexed to these bills of quantities (accompanying these bills of quantities?) for tender purposes				
	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	<u>Sawn softwood grade</u>				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	<u>Fibre-cement socketless barge boards</u>				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	52		0,00
	DOORS ETC				
	<u>Wrought meranti doors hung to steel frames</u>				
3	40mm Framed and ledged batten door 910 x 2100mm high	No	1		0,00
	Wrought hardwood flushback doors with sapele veneer hung to steel frames				
4	40mm Door 910 x 2100mm high	No	7		0,00
	<u>FRAMES ETC</u>				
	<u>FRAMED FRAMES, MULLIONS, TRANSOMS, ETC</u>				
	<u>Wrought hardwood</u>				
5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	8		0,00
					0,00
	<u>SECTION NO. 4</u>				
	<u>BILL NO. 8</u>				
	<u>IRONMONGERY</u>				
	<u>Proprietary items</u>				

	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration				
	LOCKS				
	Keys				
	Unless otherwise described locks shall have two keys each				
	"EN-SUITE" LOCKS				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	14		0,00
2	50 x 25 LD polished barrel bolts	No	2		0,00
	The following locks are to be suitable for master key operation				
3	50mm padlock	No	1		0,00
4	Bathroom lockset	No	7		0,00
5	Three-lever lockset	No	8		0,00
	HANDLES				
	Manufactured by "SOLID"				
6	Anodised aluminium pull handle	No	8		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 9				
	METALWORK				
	Descriptions of bolts, anchors, etc				
	Descriptions of bolts shall be deemed to include nuts and washers				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
	Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres				
	Aluminium doors, windows, etc				

	Doors and windows shall comply with AAAMSA design criteria Glazing shall comply with SAGGA regulations. Glass shall be type ? laminated performance glass as shown on the window schedules/drawings appended to these bills of quantities (as described in the headings to window descriptions?). Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed For purpose made windows and doors, refer to drawings annexed to (issued separately with?) these bills of quantities The following certificates shall be provided prior to commencement of site work:1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product 2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively 3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process 4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years				
	GALVANISED STEEL GATES, SCREENS, ETC				
	Steel gates and frames				
1	Single gate and frame for opening 910 x 2 100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock	No	1		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	1		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	11		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 10				

	PLASTERING				
	The following preambles are to be included only when specifically required by the principal agent				
	GRANOLITHIC				
	Untinted granolithic on concrete				
1	35mm Thick on floors and landings	m^2	37		0,00
	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	204		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL?)				
	Wire gratings				
	Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings				
	Stormwater channels				
	Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc, and disposal of surplus material on site				
	French drains				
	Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, "?" geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site				
	Septic tanks				
	Descriptions of proprietary type 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 and disposal of surplus material on site				
	Stainless steel basins, sinks, wash troughs, urinals, etc				
	Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0) Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8) Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8) Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable				
	Sealing of edges				

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

Copper pipes

Pipes shall be hard drawn and half-hard pipes of the class described. 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 "?" type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and 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

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc, casting in, building in or suspending not exceeding 1m below suspension level

	Paper wrapping to pipes Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings Disinfection of water pipework Water pipework is to be disinfected at completion Laying, backfilling, bedding, etc of pipes Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001 General Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately) Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of ?% Mod AASHTO density and disposal of surplus material on site Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately) Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) As-built drawings Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	"Marley Streamline" uPVC				
1	110mm Half-round roof gutters	m	30		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00

6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	5		0,00
8	"Charlog" VIP 200 or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	7		0,00
	WASTE UNIONS ETC				
	Manufactured by "?"				
9	32mm chromium plated basin waste union	No	5		0,00
	TRAPS ETC				
10	50mm Rubber "P" or "S" trap	No	5		0,00
	TAPS, VALVES, ETC				
11	15mm Brass hose bib-tap	No	5		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
12	50mm Pipes	m	25		0,00
13	110mm Vent pipes fixed to brickwork	m	24		0,00
	Extra over PVC-U soil and vent pipes for fittings				
14	50mm Bend	No	20		0,00
15	50mm Junction	No	5		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
16	15mm Pipes	m	25		0,00
	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
17	15mm Fittings	No	30		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 12				
	GLAZING				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				

	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m²	m²	3		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	5		0,00
					0,00
	SECTION NO. 4				
	BILL NO. 13				
	PAINTWORK				
	SUPPLEMENTARY PREAMBLES				
	PREPARATORY WORK TO EXISTING WORK				
	PAINT SPECIFICATIONS				
	All painting shall be done in accordance with "?" specifications unless otherwise described				
	COLOURS				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m²	204		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m²	16		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				

3	Door frames	m^2	7		0,00
4	Windows	m^2	2		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	4		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors and frames	m^2	31		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00
8	Ironmongery				0,00
9	Metalwork				0,00
10	Plastering				0,00
11	Plumbing and drainage				0,00
12	Glazing				0,00
13	Paintwork				0,00
					0,00
	SECTION NO. 5				
	BILL NO. 1				
	EARTHWORKS (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Classification of excavated material				

“Hard rock” shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives “Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness “Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m3 in volume

Applicable standards

All earthworks to be carried out in accordance with SANS 2001 - Construction works Part BE1: Earthworks (general) as well as SANS 10400-F: Site operations and SANS 10400-G: Excavations

Filling material (General)

It will be, at all times, required from the contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the principal agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Filling in sub-layers, under floors, etc

All filling in layers under surface beds, in sub-layers, to form earth mattresses, backfilling, etc. shall be done with materials specified and according to methods prescribed by the SANS 1200ME Sub-base Specification in layers of 150mm thickness

The aforesaid specification was drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on the filling details and requirements prescribed for this project

The said specification, although not issued with, shall be regarded to form part of these Bills of Quantities. The contractor shall obtain a copy of the said specification from the South African National Standards authority and be kept on site at all times

CBR and indicator tests

The contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the principal agent prior commencement of any placement thereof and/or filling done therewith

Density tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

It will be required from the contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling under surface beds, aprons, channels, etc: 1 Test per 125m^2 pl area per each 150mm thick layer

- Filling behind retaining walls: 1 Tests per each 10m length of retaining wall

Results of density tests executed are to be submitted to and approval obtained from the principal agent prior commencement of any subsequent fill layers and/or other work

Carting away excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall be deemed to include the loading, hauling and off-loading of excessive or unsuitable excavated material to a suitable and approved dumping site, which has to be located by the contractor, off the premises

The location of the intended dumping site will be subjected to the prior written approval of the principal agent

The contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used dumping/spoiling by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent

Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained

Soil poisoning and insecticide

All soil poisoning and insecticide to be applied under a five year guarantee by an approved firm of Specialists. Soil insecticides shall comply with SANS Specification 1165. Work shall be carried out in accordance with “The application of soil insecticides for the protection of buildings” - SANS Code of Practice 0124 Casting of concrete floors to start within 24 hours after the application of soil poisoning

Pest control applicators must provide :1. Proof of pesticides and insecticides (data sheets)2. Toxicants must be registered with the Department of Agriculture2. Proof that they are qualified to perform the work3. Five year guarantee certificate

Measurement and payment

	Measurement and payment clauses as described in the above-mentioned specification, Standardized Specification for Civil Engineering Construction, shall not apply to the work as set out in this Bill				
	Subterranean water				
	No information regarding susterranean water is available. The tenderer must acquit himself of the presence and depth of subterranean water and allow therefore in his prices				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	83		0,00
	REMOVAL OF TREES ETC				
	Taking out and removing, grubbing up roots, filling in holes and compacting to 95% Mod AASHTO density				
2	Tree stump not exceeding 1m high, exceeding 200mm and not exceeding 500mm girth	No	1		0,00
	EXCAVATION, FILLING, ETC				
	EXCAVATIONS ETC				
	Open face excavation in earth over sloping site				
	Excavation in earth not exceeding 2m deep				
3	Trenches	m^3	32		0,00
4	Basements or Pit	m^3	30		0,00
5	Thickening under surface beds etc	m^3	2		0,00
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 95% Mod AASHTO density				
6	Not exceeding 2m deep for placing and removing formwork to walls etc, against excavated face	m^2	34		0,00
7	Extra over for excavation in soft rock	m^3	1		0,00
8	Extra over for excavation in hard rock	m^3	0		0,00
	Extra over all excavations for carting away				
9	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m^3	10		0,00
	Risk of collapse of excavations				
10	Sides of bulk excavations not exceeding 1,5m deep	m^2	92		0,00
11	Sides of bulk excavations exceeding 1,5m deep	m^2	34		0,00
	Keeping excavations free of water				

12	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING ETC				
	Filling of gravel-soil material (G6) supplied by the contractor, compacted to 93% Mod AASHTO density				
13	Over site to make up levels	m^3	25		0,00
14	Under floors, steps, pavings, etc	m^3	9		0,00
15	Backfilling to trenches, holes, etc	m^3	29		0,00
	Soilcrete filling of 8% mix				
	Compaction of surfaces				
16	Behind retaining walls	m^3	19		0,00
17	Compaction of natural or excavated ground surface over site by wetting and compacting with 3 passes of a 5 ton vibratory roller	m^2	83		0,00
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
18	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	24		0,00
19	To bottoms and sides of trenches etc	m^2	114		0,00
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
20	"Modified AASHTO Density" test	No	6		0,00
					0,00

SECTION NO. 5

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels of maximum 16m2

Concrete test cubes

Descriptions and tendered rates for concrete strength test cubes, as required under clause 7, "Tests" of SANS 1200 G, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent and engineer

All concrete strength test cubes, each size 150 x 150 x 150mm, shall be prepared in a set of three

It will be required from the contractor to prepare concrete strength test cube sets for each building at the following minimum frequencies: - One set of three cubes for every $20m^3$, or part thereof, of concrete cas per day, or: - One set of three cubes for each batch of concrete cast per event

All concrete strength test cubes shall be labelled and the identity thereof (ie. date, concrete strength type, position where batch was cast relative to the building and building identity) shall be properly recorded for future reference

Reinforced concrete

All reinforced concrete is to be compacted with a mechanical vibrator

Formwork

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

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

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer or principal agent for design reasons. Formwork necessitated by irregularities 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 which is made for in "Earthworks"

Formwork necessitated by irregularity or collapse of excavated faces is not 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"

Formwork to soffits of solid slabs, etc shall be deemed to be slabs not exceeding 200mm thick unless otherwise described

Degree of accuracy of formwork: Grade 2 as SANS 1280G

Permissible deviations: Flatness of plain surface - 5mm Abrupt changes in a continuous surface - 5mm

Supervision

	A competent and experienced foreman shall supervise personally the whole of the concrete construction and pay special attention to: The quality, testing and mixing of materials; The placing and compaction of concrete; The construction and removal of formwork; and The sizes and position of the reinforcement The contractor shall obtain the permission of the engineer or principal agent before comencing concreting of foundations, surface beds and reinforced structure No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the engineer or principal agent to comment on any particular aspect of the work shall be deemed to relieve the contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the drawings, specifications and conditions of contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the engineer or principal agent to inspect all or any part of the works or that such inspection is necessarily complete in every respect **Reinforcement** Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps The mass of binding wire is not included in the mass of the reinforcement and the cost thereof must be included in the rates for reinforcement **CONCRETE IN FOUNDATIONS (PROVISIONAL)** **UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES** 25MPa concrete				
1	Strip footings	m^3	4		0,00
2	Surface beds on waterproofing	m^3	4		0,00
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES 25MPa concrete				
3	Strip footings	m^3	7		0,00
4	Surface beds on waterproofing	m^3	6		0,00
5	Pit toilet base	m^3	3		0,00
6	Ramps	m^3	2		0,00
7	Aprons	m^3	3		0,00
	TEST CUBES				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	6		0,00
	Finishing top surfaces of concrete smooth with a steel trowel				

9	Surface beds, slabs, etc	m^2	41		0,00
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to sides				
10	Edges, risers, ends and reveals exceeding 300mm high or wide	m^2	3		0,00
11	Slabs with props left in position for a period of 7 days	m^2	17		0,00
	Rough formwork to form				
12	Opening not exceeding 1m girth through not exceeding 300mm slab	No	6		0,00
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
13	10mm Diameter bars	t	0,63		0,00
	Fabric reinforcement				
14	Ref 193 fabric reinforcement in concrete surface beds, aprons etc	m^2	52		0,00
					0,00

SECTION NO. 5

BILL NO. 3

PRECAST CONCRETE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes

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

General

Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming

PRECAST CONCRETE SLABS ETC

Precast concrete cover slab 100mm thick formed of 25MPa/19mm concrete with class 1 smooth finish on exposed surfaces splayed 25mm at edges with ref. 193 mesh reinforcement and 2no. Threaded 15mm diameter polycop pipe sleeves cast in to receive 2no. Threaded 10mm diameter galvanised L-shaped lifting handles with 50 x 50 x 5mm holed plates, nuts and lock nuts, including holes to fit 110mm diameter vent pipe, etc. laid on brick walls.

1	1 100 x 375 x 100mm Thick cover slab including bedding edges all round	No	4		0,00
					0,00

SECTION NO. 5

BILL NO. 4

MASONRY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Mortar

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used Mortar plasticizers may only be used with the approval of the principal agent

Mortar test cubes

Descriptions and tendered rates for mortar strength test cubes, as required by the principal agent, shall be deemed to cater for all the costs of providing cube moulds necessary for the purpose, making, storing and sending thereof to an approved laboratory for testing, paying all charges in connection therewith and for submitting test result reports to principal agent

It will be required from the contractor to prepare mortar strength test cubes for each building at a frequency as decided upon by the principal agent

All mortar strength test cubes shall be labelled and the identity thereof (ie. date, mortar strength type, position where batch was taken from relative to the building and building identity) shall be properly recorded for future reference

Brickwork

Brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid. Mortar joints shall be not less than 8mm or more than 12mm thick Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining brickwork

Bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

	Brickwork reinforcement Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2.8mm diameter main wires with 2.5mm cross wires at 300mm centres welded at intersections Reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections **Centres and turning pieces** Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days **Face bricks** Bricks shall be ordered timeously to obtain uniformity in size and colour Facing bricks shall exhibit a liability to efflorescence not in excess of "slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14% Particular care shall be taken to preserve arrisses and faces of face and paving bricks during transit and handling Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick used is obtained All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws **Pointing** Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc **Samples** Samples of all masonry building units, except for walls described as "load bearing" shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site **BRICKWORK** **FOUNDATIONS (PROVISIONAL)** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar **SUPERSTRUCTURE** Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
1	Half brick walls	m^2	27		0,00
2	One brick walls	m^2	111		0,00

3	One brick walls in beamfilling	m^2	12		0,00
	BRICKWORK SUNDRIES				
	2,5mm Galvanised brick reinforcement				
4	75mm Wide reinforcement built in horizontally	m	90		0,00
5	110mm Wide reinforcement built in horizontally	m	498		0,00
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	17		0,00
	Galvanised wire ties etc				
7	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	15		0,00
	Air bricks etc				
8	229 x 76mm Clay vermin proof air brick	No	3		0,00
	FACE BRICKWORK				
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
9	Extra over brickwork in foundations for face brickwork (Provisional)	m^2	111		0,00
10	Extra over brickwork to beamfilling for face brickwork	m^2	12		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				
11	220mm Copings on top of one brick walls	m	9		0,00
12	220mm Wide sills set sloping and slightly projecting	m	3		0,00
	BLOCKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Blockwork in class II mortar with cores filled solid with mortar				
13	M200 Block cavity Walls below ground level	m^2	34		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 5				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				

	SUPPLEMENTARY PREAMBLES				
	Damp-proof course to walls				
	All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap should be equal the full thickness of the wall				
	Waterproofing				
	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				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
1	In walls	m^2	10		0,00
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
2	Under surface bedS	m^2	18		0,00
	WATERPROOFING TO BASEMENTS				
	Prime with one coat bitumen primer and one layer 4mm fully bonded waterproof membrane comprising two bitumen layers reinforced with woven spunbonded polyester fabric and coated with polyethelene film for heat bonding, laid with 100mm side and 150mm end laps				
3	On floors	m^2	17		0,00
4	On walls	m^2	30		0,00
5	On turn-ups and turn-downs exceeding 300mm girth edit this	m^2	5		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 6				
	ROOF COVERINGS, ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	General				

	Roof covering must be done by a specialist. A written 5-year guarantee certificate must be issued on completion thereof Prices to include for all cutting and waste and relevant fixing material, unless otherwise described **Sizes** All items are measured net unless otherwise described Where battens for roof coverings form part of the plate nailed timber roof truss design it shall be included under the roof construction in the "Carpentry and Joinery" trade and not under this trade **PROFILED METAL SHEETING AND ACCESSORIES** Where roof coverings are fixed on top of rigid board insulation to purlins etc they are to be described as such Note that besides galvanised steel, sheeting is also available in corten steel, stainless steel, copper and aluminium **0,8mm Thick "Zinc Aluminium" or similar Approved corrugated pressed steel sheets with "Chromadek" finish on one side and pre-painted finish on other side, fixed to timber or steel purlins**				
1	Roof covering with pitches not exceeding 25 degrees	m^2	48		0,00
2	Ridge capping 520mm girth, notched to fit ribs of roof covering and with profiled "Sondor" polyclosers on both sides	m	7		0,00
	Sundries Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/mý and a Class I fire rating in accordance with SANS 0177-3				
3	Insulation laid taut over purlins (at approximately 1 250mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m^2	42		0,00
					0,00
	SECTION NO. 5 **BILL NO. 7** **CARPENTRY AND JOINERY** **PREAMBLES** For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)" **SUPPLEMENTARY PREAMBLES** **ROOF TRUSSES** **Pre-fabricated metal connected timber roof trusses**				

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

Timber

Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SANS Specification No 563 or as defined in SANS Specification No 1460

Bolts

Bolts shall be in accordance with BS 4190 or SANS 135

Shear plates, tooth connectors and split rings

Shear plates, tooth connectors and split rings shall be in accordance with BSS 1759 : 1960 and installed in accordance with the CSIR Publication HOUT 468, "The Design, Manufacturing and Erection of Timber Trusses"

Washers

Square or round washers of the following dimensions shall be used with all bolts:

1 Bolts up to 8mm diameter: Washers shall be minimum 25mm wide of minimum 2,50mm thickness

2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness

3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness

Metal connector plates

Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel

The steel shall have a minimum yield strength of 228MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be not less than 275g/m2 commercial class hot dipped galvanising as per SANS 934 before stamping

All connector plates shall have been tested by the CSIR and be of a size capable of transmitting the forces between members of a truss without exceeding the design values published in the CSIR report

Truss construction

Trusses shall be constructed in jigs specially designed to unsure the correct profile, overhangs and cambers

Where metal connector plates are used all joints are to be close fitted butt joints made by precision pressing of the metal connector plates into each side of the joint

Truss design

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

Truss spacing

The truss centres shall be less than or equal to that as described in this bill for each respective truss

Truss pitch

The truss pitch shall be as described in this bill for each respective truss type

Truss loading

Trusses shall be designed for a live load of 0,50kN/m2 and dead load as specified below

Shop drawings, design and erection guarantee certificates

It will be expected from the contractor to timeously prepare, submit and obtain the necessary approvals from the principal agent in respect of the required shop drawings, design and erection guarantee certificates as specified

Dimensions

All dimensions given in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences

Erection

All trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber roof Trusses" as published by the Institute for Timber Construction and the CSIR, or the SABS Code of Practice "The Design, Manufacture and Erection of Timber Roof Trusses", or as designed and detailed by the designer

Design system

The design system as documented in this bill is based on the "TRi design 3000" system and all references given in the descriptions are related to specific type of trusses based on this design system

However, the contractors is to note that any design system of similar quality may be used subject to the prior written approval of the principal agent

Both the design and guarantee for the prefabricated timber roof construction complete, (excluding battens and/or purlins) to be designed, constructed and delivered to site by an approved firm of specialists, under a written guarantee, which shall be lodged with the principal agent for approval before the work commence

Rates

Tendered rates to include for the complete roof construction, including the design of the roof construction, all timber of required grade and type shown on the design, all cutting and waste, cutting to the exact lengths and end angles to manufacture the respective truss type, supply of all connector plates, prefabrication of trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works (cost of girder trusses to include cost of required metal truss hangers), etc

Prices for trusses must also include for: 1. Unloading and storing under cover and protecting from the weather, or handing over to others for unloading and storing as required

2. Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing and holding down and connections supplied by the truss fabricator for use by: 2.1 themselves (when responsible for erection) 2.2 others (where applicable)

3. Such site supervision as deemed necessary by the fabricator of the trusses to ensure that all the erection details have been complied with to his satisfaction

Fixing of purlins

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

GENERAL CARPENTRY AND JOINERY

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

Particle board

Particle board shall comply with the following specifications: a) SANS 1300 Particle board: exterior and flooring type b) SANS 1301 Particle board: interior type

Decorative laminate finish

Decorative laminate finishes shall be glued under pressure

All edge strips shall be butt jointed at junctions with adjacent similar finish

	Hardwoods All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia **Sealing of all abutments** All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained **ROOFS ETC** **Plate nailed timber roof truss construction** Unless otherwise described, the following specifications will apply: 1 All trusses to be with a 26° pitch at approximately 750mm centres 2 The dead load consists of 420 x 332mm "Marley Monarch Antique" tiles on 38 x 38mm purlins at approximately 320mm centres with either 4 - 9.5mm fibre-cement or plasterboard nailed-up ceilings on 38 x 38mm brandering at 450mm centres or 40mm thick suspended ceilings **Sawn softwood**				
1	Roof construction to double pitched roof with two hipped ends, 7.00 x 5.00m overall on plan x 1600mm high overall, including trusses, jack rafters, permanent bracing and 38 x 56mm purlins and wall plates	Item	1		0,00
	Fibre-cement socketless barge boards				
2	12 x 225mm Fascias and barge boards fixed to steel or timber including H-profile jointing strips	m	41		0,00
	DOORS ETC Wrought meranti doors hung to steel frames				
3	40mm Framed and ledged batten door 910 x 2100mm high	No	4		0,00
	Hardwood stable doors with sapele veneer on both sides hung to wooden frames				
4	32mm Medium duty hardboard faced interior door 910 x 2100mm high with 50 x 25 LD polished barrel bolts, 100 x 75mm LD medium duty brass butt hinge	No	3		0,00
	FRAMES ETC FRAMED FRAMES, MULLIONS, TRANSOMS, ETC Wrought hardwood				

5	77 x 64mm Rebated and angle rounded frame for 910 x 2100mm high door	No	6		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Finishes to ironmongery				
	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 SD Sanded				
	HINGES, BOLTS, ETC				
1	100mm Galvanised and welded loose pin hinges	No	8		0,00
2	50 x 25 LD polished barrel bolts	No	4		0,00
	HINGES, BOLTS, ETC				
3	50mm padlock	No	4		0,00
4	Bathroom lockset	No	4		0,00
5	Three-lever lockset	No	4		0,00
	HANDLES				
	Manufactured by "SOLID"				
6	Anodised aluminium pull handle	No	4		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 9				
	METALWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				

SUPPLEMENTARY PREAMBLES

Primer

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer All scratches, chips or blemishes to be made good on site after erection All rates tendered must make provision for this as no claim will afterwards be entertained.

Descriptions

No allowance has been made in the mass of steel for rolling margins, rivets, additional materials in welding, decorative or protective treatment nor constructional aids

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete

Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Welded joints and intersections

Prices of continuous rails shall include for welded joints in the length and prices of instersections shall include all cutting, mitring, scribing, shaping, etc

Bends, knees, ramps and the like to continuous rails shall be forged and rounded to approved radii

Prices for balustrades, burglar guards and the like shall include for framed and welded joints at instersections

Screws and bolts

Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless described otherwise, be used for srewing items items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium

Items fixed to adjoining metalwork with rivets, self-tapping screws, machine screws, etc shall include all necessary drillings

Where bolting is specified, projecting shank ends of bolts shall be cut off flush and left smooth

Door frames

Unless otherwise described, the following shall be applicable on all door frames: - Frames shall be double rebated suitable for 40mm thick doors

- One jamb of all frames for single doors shall be factory prepared for striking plate of mortice lock

	- All frames shall be factory fitted with three washered butt hinges for each door				
	- All frames shall be treated with one coat factory applied metal primer complying with SANS Specification 909				
	Striking plates for door frames				
	Striking plates to be of chromium-plated type, unless otherwise described				
	Sealing of all abutments				
	All windows, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicon sealant along all joints and prices to allow therefore				
	STEEL GATES, SCREENS, ETC				
	GALVANISED STEEL GATES, SCREENS, ETC				
	Steel gates and frames				
1	Single gate and frame for opening 910 x 2 100mm high overall, the outer frame of 45 x 45 x 3mm hollow section bolted to wall with and including eight 70mm M80 expansion bolts and the gate 813 x 2 032mm high of 40 x 60 x 2mm hollow section frame with two 40 x 6mm flat section horizontal rails filled in with 20mm diameter vertical rails at 110mm centres fitted with one and a half pairs of suitable pin hinges welded to hollow section steel frame, complete with and including three lever lock (D7)	No	4		0,00
	GALVANISED PRESSED STEEL DOOR FRAMES				
	1,6mm Rebated frames suitable for one brick walls				
2	Frame for door 910 x 2100mm high	No	4		0,00
	GALVANISED STEEL WINDOWS, DOORS, ETC				
	Standard school windows				
3	Window type W2, 533 x 457mm high	No	12		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 10				
	PLASTERING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Preparatory work				

	Surfaces shall be clean and free from oil and thoroughly wetted directly before any plastering or other in-situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key **Finish** All coats of paving and plastering shall be executed in one operation without any blemishes **Granolithic** Granolithic shall be cured for at least seven days after laying Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid Granolithic shall be divided into panels not exceeding 6m2 with V-joints and deep trowel cuts Granolithic to stairs shall include non-slip reedings to treads **Skirtings** Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square juntion with floor finish **Plaster** All plaster, other than skim plaster, shall not be less than 10mm and not more than 20mm thick **General** Rates for plastering described as being on walls shall include concrete columns, beams and lintels flush with the face of the wall **Textured finishes** All textured finishes are to be applied to the satisfaction of the principal agent and executed by an approved firm of specialists, all strictly in accordance with the materials supplied and methods employed by the manufacturer **Preparatory work for textured finishes** Textured finishes to be applied to surfaces as described. Rates tendered are to include for all necessary priming, preparatory work, etc All surfaces are to be inspected and approved by the principal agent prior any work is commenced **GRANOLITHIC** **Untinted granolithic steel trowelled on concrete**				
1	35mm Thick on floors and landings	m^2	39		0,00

	INTERNAL PLASTER				
	Compo plaster steel trowelled, on brickwork				
2	On walls	m^2	153		0,00
					0,00

SECTION NO. 5

BILL NO. 11

PLUMBING AND DRAINAGE (PROVISIONAL)

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Regulations

All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work on this contract

Prices

Prices must include for arranging joints at convenient points, embedding in concrete of for rough cutting around brickwork as the work proceeds

No distinction has been made between pipes chased in walls, fixed in ceilings, roofs, floors, columns, slabs, etc or for different finishes to these elements and has been described as "pipes".

Prices shall therefore include for all holderbats, brackets, clips, bands, etc and building in or chasing of same, holes through brickwork, concrete, etc and for making good facings, plaster, granolithic and other in-situ finishes as necessary

Prices to fixing of sanitary fittings etc shall include for setting up and fixing in position as described, joints to soil, waste and supply pipes as the case may be, making good finishes around and for protecting fittings from injury during subsequent building operations

Excavations

Prices for all excavations must include for necessary staging and for the risk of collapse of excavation side and also keeping excavations free from water

Laying, backfilling, bedding, etc. of pipes

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

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

Compacting

Filling for all types of pipes described as "under solid floors, etc." shall be done with approved backfilling and compacted to 93% Mod. AASHTO density, unless otherwise described

uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed

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 wall half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bend 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" or similar and approved type. Capillary solder fittings shall comply with ISO 2016

Galvanised steel pipes and fittings

Galvanised steel pipes are to be "Tosa" or similar and approved medium class to SANS 62 and fittings are to be manufactured by "Tupy" or similar and approved

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level

Disinfection of water pipework

All pipework is to be disinfected in accordance with SANS 1200L

Reducing fittings

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

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

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

Stainless steel used for the manufacturing of urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be type 304 (18/8)

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

Flush pans

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

Sealing of abutments

All sanitary fittings abutting walls, tiled surfaces, vanity slabs, work tops, etc. to be sealed watertight with an approved silicon sealant along all joints

Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained

Waste unions

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

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster

Testing

Descriptions for the testing of plumbing and drainage installations shall be deemed to cater for all testing apparatus, labour, etc. and shall be done strictly as directed by and in accordance to the Principal Agent's instructions, including for re-testing after taking out and making good all defective work to his entire satisfaction

<u>As-built drawings</u>

Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)

<u>RAINWATER DISPOSAL</u>

"Marley Streamline" uPVC

1	110mm Half-round roof gutters	m	23		0,00
2	110mm Diameter rainwater pipes	m	4		0,00
3	Extra over gutter for stopped end	No	4		0,00
4	Extra over gutter for outlet for 110mm pipe	No	2		0,00
5	Extra over rainwater pipe for bend	No	4		0,00
6	Extra over rainwater pipe for shoe	No	2		0,00
	SANITARY FITTINGS				
	Manufactured by "CHARLOG" or similar approved				
7	"Christy" or similar approved plastic wash hand basin on brackets fixed to brickwall.	No	6		0,00
8	"ATLAS" VIP 200 Code 222 AP C/W or similar approved WC suite comprising WC pan with double flap heavy duty plastic seat	No	6		0,00
9	320 x 350mm Type 490mm curved bowl urinal fitted with waterless urinal cold water fittings, and mounted with brackets on wall	No	2		0,00
	WASTE UNIONS ETC				
	"Cobra Watertech"				
10	32mm chromium plated basin waste union	No	5		0,00
	TRAPS ETC				
	"Marley"				
11	50mm Rubber "P" or "S" trap	No	5		0,00
	TAPS, VALVES, ETC				
	Brass				
12	15mm Brass hose bib-tap	No	5		0,00
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
13	50mm Pipes	m	15		0,00
14	110mm Vent pipes fixed to brickwork	m	12		0,00
	Extra over PVC-U soil and vent pipes for fittings				
15	50mm Bend	No	12		0,00
16	50mm Junction	No	5		0,00
	WATER SUPPLIES				
	Galvanised heavy steel pipes with screwed and socketed joints				
17	15mm Pipes	m	15		0,00

	Extra over galvanised heavy steel pipes with screwed and socketed joints for steel fittings				
18	15mm Fittings	No	18		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 12				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6,4mm "Laminated" obscure safety glass				
1	Panes not exceeding 0,1m^2	m^2	3		0,00
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass ("GG" Quality) copper backed mirrors with rounded polished edges holed for and fixed on 6mm hardboard backing with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	3		0,00
					0,00
	SECTION NO. 5				
	BILL NO. 13				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				

	Descriptions of painting shall be deemed to include complete preparation of new as well as existing surfaces, including patching and filling, sanding and primer on nail and screw heads Descriptions of painting on pipes, gutters, etc shall be deemed to include painting on holder bats, hangers, clips, clamps, etc Descriptions of painting on windows, frames, etc shall be deemed to include primer in rebates of sashes to be glazed				
	PAINTWORK, ETC TO NEW WORK				
	ON FLOATED PLASTER				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Walls	m^2	153		0,00
	ON FIBRE-CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
	Two coats extremely durable UV-resistant, washable pure acrylic emulsion sheen paint				
2	Fascias and barge boards, including priming metal jointing strips	m^2	12		0,00
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel				
3	Door frames	m^2	5		0,00
4	Windows	m^2	3		0,00
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m^2	11		0,00
	ON WOOD SURFACES				
	One coat primer and two coats premium quality polyurethane enamel paint				
6	Doors	m^2	27		0,00
					0,00
1	Earthworks (provisional)				0,00
2	Concrete, formwork and reinforcement				0,00
3	Precast concrete				0,00
4	Masonry				0,00
5	Waterproofing				0,00
6	Roof coverings, claddings, etc				0,00
7	Carpentry and joinery				0,00

8	Ironmongery			0,00
9	Metalwork			0,00
10	Plastering			0,00
11	Plumbing and drainage			0,00
12	Glazing			0,00
13	Paintwork			0,00
				0,00

SECTION NO. 6

BILL NO. 1

GENERAL SITE WORKS, ETC (PROVISIONAL)

PREAMBLES

For preambles see "Specification of materials and methods to be used - PW 371"

SUPPLEMENTARY PREAMBLES

Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 3

The Contractor is referred to the previous Section 2 for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this Bill, unless specifically otherwise described

General

The Contractor shall carry out the work with as little mess and noise possible and with a minimum of disturbance to the occupants. The Contractor shall provide proper protection and provide and erect any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent, and remove when directed

Site clearance

All rubble, rubbish, vegetable soil, shrubs, bush, trees, etc. shall be removed from the whole area and carted away off the construction site to a suitable dumping site, which has to be located by the Contractor, all to the full satisfaction of the Principal Agent

Filling (General)

It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used

Samples of potential fill material obtained from excavations, trench excavations, etc.are to be submitted to and approved by the Principal Agent prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G6 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescibed percentage Mod AASHTO density

CBR and indicator tests

Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed

The Contractor is to note that all necessary tests (i.e. CBR and indicator tests, etc.) are to be conducted for all filling material, whether obtained from the excavations or to be imported from an approved commercial source

Results of these tests are to be submitted to and approved by the Principal Agent prior commencement of any placement thereof and/or filling done therewith

Density tests

It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:

- Filling to form building platforms, etc: 1 Test per 200m^2 plan area p each 150mm thick layer

Results of density tests executed are to be submitted to and approval obtained from the Principal Agent prior commencement of any subsequent fill layers and/or other work

Keeping excavations free from water:

No separate provision has been made in this Bill for measurement and payment for bailing, pumping or otherwise keeping excavations free from water during the construction process of the work measured in this Bill

Therefore, tenderers are to note that their tendered rates are to cater for the above-mentioned as no claims arising out of their failure to do so will afterwards be entertained

Carting away of excessive and/or unsuitable excavated material

Descriptions for "carting away excessive or unsuitable excavated material from site" shall, unless specifically otherwise described, be deemed to include the loading and hauling of excessive or unsuitable excavated material to a suitable dumping site, which has to be located by the Contractor, off the construction site

The location of the intended dumping site will be subjected to the prior written approval of the Principal Agent

	The Contractor shall also be liable to, upon completion, to rehabilitate all areas of the site which was disturbed during the construction phase due to construction activities, temporarily dumping/spoiling of excavated material, etc. It will be required from the Contractor to grade such areas to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the Principal Agent Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained **Relevant SANS 1200 Specifications** The following relevant SANS 1200 Specifications shall be regarded applicable: - Earth mattresses, building platforms, etc: SANS 1200 AA General (Small Works) SANS 1200 C Site clearance SANS 1200 DE Earthworks (Small works) SANS 1200 ME Sub-base SANS 1200 MFBase All work related to the above-mentioned elements shall be done with materials specified and in according to methods prescribed by the relevant SANS 1200 referred to **SANS 1200 Specification (General)** The SANS 1200 Specifications as referred to above were drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on work scheduled hereunder for this project All the specifications referred to above, although not issued with these Bills of Quantities, shall be deemed to form part of this document and shall be considered as applying to the performance of work to be completed in terms of this Section The Contractor shall obtain a copies of the said specifications from the South African Bureau of Standards and be kept on site at all times **Measurement and payment** Measurement and payment clauses as described in the above-mentioned SANS 1200 Specifications shall not apply to the work as set out in this Bill				
	GENERAL SITE CLEARANCE ETC				
	EARTHWORKS				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc	m^2	438		0,00
2	Stripping average 150mm thick layer of top soil and stockpiling on site	m^2	438		0,00
	BULK EXCAVATION, FILLING, ETC				
	Open face excavation over sloping site				

3	Open face excavation to form platforms and embankments and stockpiling on site	m^3	219		0,00
	Extra over bulk excavation in earth for excavation in				
4	Soft rock	m^3	22		0,00
5	Hard rock	m^3	11		0,00
	Extra over all excavations for carting away				
6	Extra over all excavations for carting away surplus material from excavations and/or stockpile on site to a dumping site to be located by the contractor	m^3	219		0,00
	Compaction of surfaces				
7	Compaction of ground surfaces under pavings etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m^2	438		0,00
	Keeping excavations free of water				
8	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	FILLING				
	Earth filling obtained from the excavations including haulage approximately 2Km from perimeter of excavations (not compacted)				
9	In prescribed stock piles on site	m^3	219		0,00
	Earth filling (G7 material) obtained and supplied by the contractor from commercial sources or borrow pits including haulage of 10km from perimeter of site , and compacted to 93% Modified AASHTO density				
10	Sub-base to from platforms and embankments	m^3	109		0,00
11	Base course of G5 natural gravel material, compacted to 95% Mod AASHTO density	m^3	109		0,00
	Additional tests required by the principal agent				
12	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	2		0,00
13	CBR test in accordance with method A8 of TMH1	No	4		0,00
14	UCS test in accordance with method A14 of TMH1	No	4		0,00
	STORMWATER DRAINAGE				
	(HAYLETT FORMULA WORK GROUP No. 146)				
	Mass concrete with a coarse aggregate of 19mm and a minimum compressive strength of 20MPa at 28 days				

15	V-shaped channel size 600mm wide x 300mm thick with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls in panels not exceeding 2m long with 12mm polystyrene movement joints with exposed edges raked out for a depth of 25mm and filled with bituminous compound including all necessary excavation and formwork	m	85		0,00
16	Extra over for fair stopped end	No	12		0,00
17	Extra over for T-intersection	No	6		0,00
	SOIL DRAINAGE				
	uPVC Class 6 pipes as drain pipes with couplings				
18	110mm Pipes	m	26		0,00
	WATER RETICULATION				
	Supply, Lay and bed uPVC pipe complete: (The rate shall exclude disinfection of pipes after completion of hydraulic pipe test)				
19	20mm Dia uPVC pipe class 6	m	44		0,00
	Fittings and specials - uPVC bends(Extra-over rate to items 3.1.1 to 3.1.6)				
20	20mm bend	No	22		0,00
21	20mm Tees	No	45		0,00
22	20 x 15mm Reducer	No	30		0,00
	TESTING				
23	Supply all the necessary apparatus, water etc. for and test the soil drainage and water supply systems to the satisfaction of the Representative/Agent and the Local Authority, rectify all defective work free of charge and leave in perfect order	Item	1		0,00
	THE FOLLOWING IN PLINTH CONSTRUCTION				
	WATER TANK PLINTH, ETC.				
	Excavation in earth not exceeding 2m deep				
24	Trenches	m^3	8		0,00
	Extra over all excavations for carting away				
25	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the Contractor	m^3	8		0,00
	Risk of collapse of excavations				
26	Sides of trench and hole excavations not exceeding 1,5m deep	m^2	36		0,00
	G7 filling obtained from excavations compacted to 95% Mod AASHTO density				
27	Under floors, steps, pavings, etc	m^3	11		0,00

	SOIL POISONING				
	Soil insectiside				
28	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	24		0,00
29	To bottoms and sides of trenches	m^2	63		0,00
	25MPa/19mm Unreinforced concrete cast against excavated surfaces				
30	Strip footings	m^3	3		0,00
	REINFORCED CONCRETE				
	25MPa/19mm concrete				
31	Surface beds on waterproofing	m^3	5		0,00
	TEST BLOCKS				
32	Making and testing 150 x 150 x 150mm concrete strenght test cube (Provisional)	No	5		0,00
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
33	Aprons, slabs, etc to falls	m^2	24		0,00
	Fabric reinforcement				
34	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m^2	24		0,00
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
35	Under surface beds	m^2	24		0,00
	(CPAP formula work group no. 116)				
	Brickwork of NFP bricks in class II mortar				
36	One brick walls	m^2	30		0,00
	Brickwork reinforcement				
37	150mm Wide reinforcement built in horizontally	m	85		0,00
	"COROBRICK" firelight satin face bricks pointed with recessed horizontal and vertical joints				
38	Extra over brickwork for face brickwork	m^2	24		0,00
	Brick-on-edge header course copings, sills, etc of "COROBRICK" firelight satin face bricks, pointed with recessed joints on all exposed faces				

39	Coping on top of one brick wall	m	40		0,00
	Disinfecting				
40	Disinfecting water pipe and tank system	Item	1		0,00
	HDPE polyethelene Class 12 piping with 'Plasson' or other approved fittings				
41	32mm pipe and excavations not exceeding 1m deep	m	30		0,00
	Water storage tanks shall carry a minimum 8 year manufacturer guarantee, which certificate shall be handed over to the Client upon practical completion				
42	PVC Rainwater harvesting 5000 litre water tank, complete with vermin proof lid, inlets, outlets, etc. and anchored down with and including 4mm diameter galvanised mild steel wire loop double and fixed to top of tank with 15mm diameter rubber hose as sleeve, and anchored to top of concrete plinth with and including 4No. Y10 high tensile steel reinforcement rods cast into concrete plinth	No	3		0,00
	CONSTRUCTION OF WALKWAYS				
	SITE CLEARANCE				
	Site clearance				
43	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	128		0,00
	EXCAVATION, FILLING, ETC				
	Compaction of surfaces				
44	Rip up, scarify and compact of ground surfaces under floors etc., including scarifying for a depth of 150mm, breaking down over size material, adding suitable material where necessary and compacting to 93% MOD AASHTO density	m^2	128		0,00
	Protection against termites, ants, etc				
45	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	128		0,00
	FILLING, ETC.				
	Earth filling supplied by the contractor for complete site under building surfaces, parking areas, roadways, etc				
46	Sub-base import filling of G5 material	m^3	19		0,00
47	Base import filling of C4 material	m^3	19		0,00
	DAMP PROOFING OF WALLS AND FLOORS				
	One layer of 250 micron "USB Green" or similar approved dampproof membrane sealed at laps with PVC self -adhesive tape				
48	Under surface beds.	m^2	128		0,00
	PAVING				

	60mm Thick interlocking paving blocks, in accordance with SANS 1058 laid on and including 20mm thick river sand compacted bedding layer with joints filled in with sand, compacted with a vibration compactor, laid in a herringbone pattern				
49	Paving including 50mm thick sand	m^2	128		0,00
50	Fair raking cutting	m	170		0,00
	PRECAST CONCRETE KERBS, ETC				
	Supply lay and joint concrete kerbing, Fig 6 Kerbs to SANS 927- 25 MPa strength precast concrete including 20/19mm MPa in-situ concrete haunching				
51	Straights and curves over 10 m radius	m	170		0,00
	Supply lay and joint concrete kerbing, Fig 7 semi mounted Kerbs to SANS 927- 25 MPa strength precast concrete including 15MPa/19mm insitu concrete haunching				
52	Straights and curves over 10 m radius	m	30		0,00
	RETAINING WALLS ETC (ALL TRADES)				
	PREAMBLES				
	For Preambles refer to the Standard Preambles to All Trades - WB20 - and the Supplementary Preambles SUP1 to SUP5 and any amplification/s stated hereunder				
	_____				
	(CPAP WORK GROUP NO. 104) unless otherwise stated				
	EXCAVATIONS ETC				
53	Excavate in earth not exceeding 2m deep for trenches	m^3	9		0,00
54	Carting away surplus material from excavations and/or stock piles on site to a dumping site located by the contractor	m^3	9		0,00
55	Risk of collapse to sides of trench excavations not exceeding 1.5m deep	m^2	30		0,00
56	Keeping excavations free of all water other than subterranean water	Item	1		0,00
	25MPa/19mm Unreinforced concrete cast against excavated surfaces				
57	Strip footings	m^3	5		0,00
	INTERLOCKING PLANTER BLOCKS				
	"Loffelstein TB 300 or equal approved"precast concrete interlocking planter blocks finished smooth on exposed surfaces				

58	Retaining structures with stepped face and curves set on 700x400mm high concrete base, set as required to suit slope as per detail. 300x 460x170mm high type "L300" Loffelstein interlocking retaining blocks laid in FLOWNET "KAYMAT" U14 GEOFABRIC or similar approved with horizontal bed joints to 65 degree slope, including 100mm Diameter NETLON (Geo) pipe, 40-75mm loose stone and an average of 600mm thick earth filling compacted to 90% MOD. AASHTO behind the blocks and fill the blocks with garden soil lightly tampered as the work proceeds as per engineers drawing.	m^2	30		0,00
	(CPAP WORK GROUP NO. 136) unless otherwise stated				
	GALVANISED MILD STEEL BALUSTRADES				
	"Steel studio" or equal approved horizontal rail system installed complete as per specialist.				
59	Three horizontal rail galvanised balustrade system 1000mm high above the retaining wall where the retaining wall reaches its highest point. Handrail to be 48,3 x 2mm DIA. galvanised mid steel hollow section pin mounted on galvanised mild steel balustrade, Extension rod to be 10mm DIA. mild steel rods, 48,3mm DIA. galvanised mild steel hollow sections Baluster with pre-drilled holes for horizontal rods to run through baluster. 40mm DIA. Hollow section horizontal rails and galvanised mild steel or aluminium cover plate 70mm DIA. Purpose made cover plate to cover core-drilled provision in wall at the base of the baluster as per the architect's details.	m	25		0,00
	(CPAP WORK GROUP NO. 146) unless otherwise stated				
	Drainage uPVC pipes				
60	50mm Diameter uPVC weep pipes 250mm long built through one brickwall	No	6		0,00
					0,00
	SECTION NO. 7				
	BILL NO. 1				
	PROVISIONAL SUMS				
	Provisional sums will only be used with the prior approval of the Development Bank of Southern Africa				
	NOTES:				
	1. The Contractor's attention is drawn specifically to the Principal Building Agreement Clause 20.0 (Nominated Sub-Contractors), Clause 21.0 (Selected Sub-Contractors) and Clause 22 (Work by Others) and to the related Clauses in Section 1, Bill No. 1 - Preliminaries				
	2. The Contractor's attention is drawn also to the definition of attendance on Nominated or Selected Sub-Contractors and of fuel, power and water for commissioning of mechanical and other specialised installations given in the JBCC Preliminaries				
	3. Where special attendance includes the provision of hoisting facilities for a Sub-Contractor then the Contractor shall:-				

	* Ensure that the capacities of his hoisting equipment are sufficient to deal with the masses and the quantities of the items to be hoisted,				
	* Schedule the times of availability of the hoisting equipment for each Sub-Contractor,				
	*Provide all necessary personnel to operate the hoisting equipment,				
	all to enable the Sub-Contractor to execute the hoisting or lowering of his material, etc. using the facilities provided by the Contractor				
	4. Under no circumstances may any Provisional Amount, etc. be extended at an amount lower than the amount given in this Bill				
	All the provisional sums cover supply of material and equipment and installation where applicable by firms of specialists.				
	Provisional sums are net and do not include builder's discount, but the Tenderer may allow under "Profit" items any profit he considers necessary.				
	The Tenderer is referred to Clause 87.1 and 87.2 in the "Preliminaries" section for the definition and adjustment of "General Attendance".				
	COMMUNITY LIAISON OFFICER				
1	Provide the amount of R40 000,00 (Forty Thousand Rands@ R10,000.00/month) for the appointment of Community Liaison Officer	Item	1		0,00
2	Allow for profit and attendance	%IT	10%		0,00
					0,00
	SECTION NO. 8				
	BILL NO. 1				
	OCCUPATIONAL HEALTH AND SAFETY				
	CONSTRUCTION SITE MANDATORY SIGNAGES				
1	Project sign Board	No	1		0,00
2	Construction site mandatory safety information board	No	1		0,00
3	Crucial responsible persons board	No	2		0,00
4	First aid kit location and first aider information	No	1		0,00
5	Emergency assembly point signs	No	1		0,00
6	Running man and direction arrows signs	No	10		0,00
7	Designated Smoking Area signs	No	2		0,00
8	No smoking & vaping	No	5		0,00
9	Urinating Caution	No	4		0,00

10	Ladies Toilet signs	No	1		0,00
11	Gents toilet signs	No	1		0,00
12	Eating Area signs	No	1		0,00
13	Storeroom signs	No	1		0,00
14	flammable liquids signs	No	1		0,00
15	Fire extinguisher and direction arrow	No	5		0,00
16	Emergency telephone list	No	3		0,00
17	Site Office signs	No	1		0,00
18	Guard room signs	No	1		0,00
19	Visitors signs	No	1		0,00
20	Laydown area signs	No	1		0,00
21	Waste disposal Area signs	No	1		0,00
22	Hazardous waste signs	No	1		0,00
23	Asbestos waste removal signs	No	1		0,00
24	Asbestos removal in progress signs	No	1		0,00
25	Excavation in progress signs	No	4		0,00
26	Demolition work in progress signs	No	2		0,00
27	Falling object risk signs	No	2		0,00
28	Scaffolding tag (green)	No	4		0,00
29	Scaffold Tag (red)	No	4		0,00
30	Safe Drinking water	No	2		0,00
31	Unsafe water	No	2		0,00
32	Place rubbish in bins	No	2		0,00
33	OHS charts	No	4		0,00
34	Fire extinguisher types	No	4		0,00
35	Air horn	No	2		0,00
36	Site rules	No	2		0,00
37	PPE caution	No	2		0,00
38	Emergency evacuation procedures	No	2		0,00
39	Emergency evacuation plan	No	2		0,00
40	welding area	No	1		0,00

41	Welding caution	No	1		0,00
42	20 litre safe drinking water and containers	No	1		0,00
43	soap hand washing station	No	2		0,00
44	Dewatering pits and ponding areas	No	2		0,00
45	Rehabilitation of site	No	2		0,00
46	she bins in female ablutions	No	2		0,00
47	safety & Educational charts	No	3		0,00
48	condoms	Item	1		0,00
49	servicing and maintaining male and female ablutions	Item	1		0,00
	CONSTRUCTION SITE FACILITIES, STORAGE AND EQUIPMENT				
50	Guard house	No	1		0,00
51	Rental of site office (container)	Item	1		0,00
52	Rental of Stores with shelving (container)	Item	1		0,00
53	Portable toilets x2	Item	1		0,00
54	Portable shower x2	Item	1		0,00
55	Eating area including seats	No	1		0,00
56	Male and Female changing facility	No	1		0,00
57	Notice board	No	1		0,00
58	Drinking water supply	No	1		0,00
59	Flammable liquid storage	No	1		0,00
60	Waste storage and waste bins	No	5		0,00
61	Shade cloth on GMS game fence on 80mm timber poles	Item	1		0,00
62	Laydown area barricading net	Item	1		0,00
63	First aid kit	No	1		0,00
64	Portable siren	No	1		0,00
65	Fire extinguisher	No	1		0,00
66	Breathalyser	No	1		0,00
67	Excavation barricading material	Item	1		0,00
	VISITOR'S PPE				
68	Hard Hat	No	10		0,00
69	Safety Vest	No	10		0,00

	SITE MANAGEMENT PPE				
70	Hard Hat	No	10		0,00
71	Safety Vest	No	10		0,00
72	Safety Shoes	No	10		0,00
	EMPLOYEE'S PPE				
73	Hard Hat	No	10		0,00
74	Safety Spectacle	No	10		0,00
75	Dust Mask	No	4		0,00
76	Ear Plug	No	1		0,00
77	Safety Shoes	No	10		0,00
78	Safety Vest	No	10		0,00
79	Overall – Reflective	No	10		0,00
80	Gloves – Chemical	No	2		0,00
81	Gloves – Hot Work	No	5		0,00
82	Gloves – Light Duty	No	6		0,00
83	Safety Harness	Item	1		0,00
84	Lifeline Kit	Item	1		0,00
85	Spill Kit	Item	1		0,00
86	Hand soap	Item	1		0,00
87	Soap dispenser	No	1		0,00
88	Toilet paper	Item	1		0,00
89	Condoms	Item	1		0,00
	ASBESTOS REMOVAL PPE				
90	Hard hat	Item	0		0,00
91	Full face mask	Item	0		0,00
92	Mask cartridge	Item	0		0,00
93	Waste bags	Item	0		0,00
94	Disposable Gloves	Item	0		0,00
95	Shoe cover	Item	0		0,00
96	Coverall	Item	0		0,00
	WELDER'S PPE				

97	Welding hood	No	2		0,00
98	Welding helmet	No	2		0,00
99	Safety Spectacle	No	2		0,00
100	Mask	No	0		0,00
101	Welding gloves	No	2		0,00
102	Welding boots	No	0		0,00
103	Welding spats	No	0		0,00
104	Welding long sleeve apron	No	0		0,00
105	Welding overall	No	0		0,00
	TRAININGS				
106	Allow for HIV/AIDS awareness and Implementation programmes Item	Item	1		0,00
107	Legal Liability	Item	1		0,00
108	OHS and Regulations	Item	1		0,00
109	Working at heights	Item	1		0,00
110	Material Handling	Item	1		0,00
111	Stacking and Storage	Item	1		0,00
112	Housekeeping	Item	1		0,00
113	Hand Tools	Item	1		0,00
114	Power Tools	Item	1		0,00
115	Allow for all compulsory health and safety awareness programme (e.g. Inductions, daily task instruction, toolbox Talks, Safety Promotions, Risk Assessment, First Aid, Fire Fighting, Work at heights, H&S related training, Legal Liability/SHE Representative)	Item	1		0,00
116	Noise Induced Hearing Loss	Item	1		0,00
117	Permit to Work (Hot work etc.)	Item	1		0,00
118	Emergency Evacuation, Preparedness & Response	Item	1		0,00
					0,00

SECTION NO. 9

BILL NO. 1

EXPANDED PUBLIC WORKS PROGRAMME

PREAMBLES

	Tenderers are advised to study the additional specification SL: Employment and training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Progress: National Labour Service as bound elsewhere in the bills of Quantities and then price bill accordingly TRAINING OF LABOURER WORKERS				
	(TARGET: 4 LABOURER WORKERS) Skills development and Technical training				
1	Skills development and technical training for labourer workers for an average of 10 days (ref. SL 11.01.02)	SUM	1		0,00
	TRAVELLING AND ACCOMMODATION DURING OFF SITE TRAINING:				
	Life skills training for 26 days (ref.SL 11.02.01)				
2	Travelling (based on 50km/labourer worker)	Item	0		0,00
3	Profit and attendance on items 1 & 2	Item	0		0,00
	EMPLOYMENT OF LABOURER WORKERS				
4	Employment of labour workers (4 labourers) (90days)	SUM	0		
	The unit of measurement shall be the number of labourer workers at the statutory labour rates of R275/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of labourer workers and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 10 months appointment for labourer workers PROVISION OF EPWP DESIGNED OVERALLS TO LABOURER AND INTERNSHIP WORKERS				
5	Supply EPWP designed overalls to labourers and intership workers (ref. SL 11.05.01) for 16 workers	Item	0		0,00
6	Profit and attendance on items 4 and 5 (ref. SL 11.05.02)	Item	0		0,00
	PROVISION OF WORKING EQUIPMENTS FOR LABOURERS INCLUDING INTERNSHIP STUDENTS				
7	Supply of working equipments to labourer workers. Specification to be supplied by the EPWP-NLS Serviced Provider for the respective trades (ref. SL 11.06.02)	Item	0		0,00
8	Profit and attendance on item 6 (ref. SL 11.05.02)	Item	0		0,00
					0,00
1	PRELIMINARIES				0,00
2	DEMOLITIONS				0,00
3	TOILET TYPE 10B				0,00
4	TOILET TYPE 7G				0,00
5	TOILET TYPE 3M3F2D				0,00
6	GENERAL SITE WORKS				0,00

7	PROVISIONAL SUMS				0,00
8	OCCUPATIONAL HEALTH AND SAFETY				0,00
9	EXPANDED PUBLIC WORKS PROGRAMME				0,00
	Sub- Total	ST	0		0,00
	CONTINGENCY ALLOWANCE TO THE CONTRACT				
	Allow 10% for contingencies of sub-total (A) to be used as directed by the Principal Agent and deducted in whole or in part if not required	TAX	10%	0,00	0,00
	Sub- Total	ST	0		0,00
	ADD VAT @15%. RATE#	TAX	15%	0,00	0,00
	TOTAL CARRIED TO FORM OF OFFER				0,00

		SUMMARY FOR CLUSTER IDTKN27DOE023	TOTAL INCLUDING VAT
1		MADILIKA COMBINED SCHOOL	R0,00
2		NAMAKAZI PRIMARY SCHOOL	R0,00
3		MUZOKHANYAYO HIGH SCHOOL	R0,00
		TOTAL CARRIED TO FORM OF OFFER	R0,00