

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.1</u></b>			
	<b><u>BILL NO.1</u></b>			
	<b><u>PRELIMINARIES AND GENERAL</u></b>			
	<b><u>BUILDING AGREEMENT AND PRELIMINARIES</u></b>			
	<p>The JBCC Series 2000 Edition 4.1 Code 2101 March 2005 2005 edition prepared by the Joint Building Contracts Committee, shall be the agreement, amended as hereinafter described</p> <p>The Preliminaries for use with the JBCC Series 2000 Principal Building Agreement (May 2005 edition) prepared by the Joint Building Contracts Committee, shall be deemed to be incorporated in these bills of quantities</p> <p>Contractors are referred to the above-mentioned documents for the full intent and meaning of each clause thereof</p> <p>These clauses are hereinafter referred to by clause number and heading only. Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading and such modifications, corrections or supplements shall take precedence notwithstanding anything contrary contained in the above-mentioned documents</p> <p>Where any item is not relevant to this specific contract such item is marked N/A, signifying "not applicable"</p> <p>Notwithstanding anything to the contrary contained in any of the contract documents including the Principal Building Agreement and the Preliminaries, the provision of the "Preliminaries" as hereinafter set forth shall prevail and shall take precedence</p>			
	<b>Carried Forward</b>		R	
	Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General			

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>PREAMBLES FOR TRADES</u></b></p> <p>The Model Preambles for Trades (1999 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claim arising from brevity of description of items fully described in the said Model Preambles for Trades will be entertained</p> <p>Supplementary preambles to the Model Preambles covering clauses of a general nature, clauses pertaining to specific materials and amendments to clauses in the Model Preambles are incorporated in these bills of quantities to satisfy the requirements of this project</p> <p>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 Model Preambles and in any supplementary preambles</p> <p><b><u>GENERAL</u></b></p> <p>If Alternative A as set out in clause B10.3 hereinafter is to be used for the adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories "F", "T" or "V" as the case may be below such item, where "F" denotes a fixed amount (amount not to be varied), "T" denotes an amount variable in proportion to time and "V" denotes an amount variable in proportion to value</p> <p><b><u>SECTION A - PRINCIPAL BUILDING AGREEMENT</u></b></p> <p><b><u>Definitions (A1)</u></b></p> <p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	<p style="text-align: right;">R</p> <hr/> <p style="text-align: right;">R</p>
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	<p style="text-align: center;"><b>Brought Forward</b></p> <p><b><u>Objective and Preparation (A2 to A14)</u></b></p> <p>The principal agent shall:</p> <ul style="list-style-type: none"> <li>- monitor and control progress and scheduling</li> <li>- monitor all contract conditions, and</li> <li>- coordinate the efforts of the employer's agents, the contractor and subcontractors</li> </ul> <p>The 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</p> <p>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</p> <p>1 NO CLAUSE</p> <p><b><u>Execution (A15-A23)</u></b></p> <p>The contractor shall notify the principal agent if any encroachments of adjoining foundations, buildings, structures, pavements, boundaries, etc exist in order that the necessary arrangements may be made for the rectification of any such encroachments</p> <p>The contractor shall not cede his rights or delegate his obligations in terms of this agreement unless specifically called for by the employer</p>		R	
	<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	N/A	R	

<p style="text-align: center;"><b>Brought Forward</b></p> <p>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</p> <p>All amounts allowed under Provisional Amounts are intended to be awarded to Selected Subcontractors</p> <p><b><u>Completion (A24-A30)</u></b></p> <p>The removal and replacement of materials and/or workmanship that do not conform to specification or drawings shall not constitute grounds for an extension of the construction period nor for an adjustment to the contract sum (clause 29.3)</p> <p><b><u>Payment (A31 - A35)</u></b></p> <p>Where prices are submitted by the contractor or nominated/selected subcontractors during the progress of the works in respect of contract instructions or in regard to a claim under the terms of the contract and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the final certificate, it will be in writing</p> <p>The employer shall not pay any interest on amounts payable to the contractor for one hundred and forty two (142) days after the date of issue of the certificate of practical completion</p> <p>The employer shall, however, pay interest to the contractor at the rate stipulated in clause 34.11 on any amounts payable to the contractor more than one hundred and forty two (142) days after the date of issue of the certificate of practical completion but only for such period as the settlement of the final account is delayed by the non-performance of the principal agent or the employer or his agents. In evaluating non-performance for purposes of this clause a reasonable time shall be allowed to the employer or his agents to respond to any matter brought to his/their attention and which may affect the settlement of the final account</p> <p><b><u>Cancellation (A36-A39)</u></b></p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	<p style="text-align: center;">R</p>

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>Dispute (A40)</u></b></p> <p><b><u>Substitute Provisions (A41)</u></b></p> <p>Information necessary for the completion of those clauses contained in the schedule which are necessary for tender purposes is given hereunder</p> <p><b><u>THE SCHEDULE</u></b></p> <p>Information necessary for completion of those clauses contained in the schedule which are necessary for tender purposes is given hereunder</p> <p><b><u>42.1 CONTRACTING AND OTHER PARTIES</u></b></p> <p>42.1.1 Employer: As per infomation on the tender data</p> <p>42.1.2 Principal Agent: As per the infomation on the Tender data</p> <p>42.1.3 Architect:  Mont Consulting Engineers (Pty) Ltd</p> <p>42.1.4 Quantity Surveyor:  Epilite 398 cc - Quantity Surveyors</p> <p>Structural :  Mont Consulting Engineers (Pty) Ltd</p> <p>42.1.5 Civil:  Mont Consulting Engineers (Pty) Ltd</p> <p>42.1.6 Electrical Engineer:</p> <p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	<p style="text-align: center;">R</p> <hr/> <p style="text-align: center;">R</p>
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<p style="text-align: right;"><b>Brought Forward</b></p> <p>42.1.6 Mechanical Engineer:</p> <p><b><u>42.2 CONTRACT DETAILS</u></b></p> <p>42.2.1 Works Description: Construction of sanitation facilities</p> <p>42.2.2 Site Description: as per the information on the tender data</p> <p>42.2.3 Work or installations by direct contractors: N/A</p> <p>42.2.4 This agreement is for a government contract where there are specific options that are applicable to a <b>State</b> organ only Yes</p> <p>42.2.5 Date on which possession of the site is intended to be given: UNKNOWN</p> <p>42.2.6 Period for the commencement of the works after the contractor takes posse</p> <p>42.2.7 For the works <b>as a whole</b>. Intended date of practical completion and the penalty per calendar day 3 months after contractual commencement date <i>Date</i> <i>Penalty Amount</i> <i>The penalty per <b>calendar day</b> shall be <b>0.1%</b> of the tenderd amount ( inclusive of value added tax)</i></p> <p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	<p style="text-align: center;">R</p> <hr/> <p style="text-align: center;">R</p>
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<p style="text-align: right;"><b>Brought Forward</b></p> <p>42.2.8 For the works in <b>sections</b>: Intended date of practical completion and the penalty per calender day</p> <p style="text-align: right;"><b>Section 1</b>  .N/A..... Date  R.N/A..... Penalty Amount</p> <p>42.2.9 The <b>law</b> applicable to this <b>agreement</b> shall be that of</p> <p style="text-align: right;"><i>South Africa (country)</i></p> <p><b><u>42.3 INSURANCES</u></b></p> <p>42.3.1 Contract works insurance to be effected by:</p> <p style="text-align: right;"><i>Contractor:</i>  For the Sum of R Contract Amount + 20.00 %  With a deductible of - to be determined by the contractor</p> <p>42.3.2 Supplementary insurance is required</p> <p style="text-align: right;"><i>No</i></p> <p>42.3.3 Public liability insurance to be effected by:</p> <p style="text-align: right;"><i>Contractor:</i>  For the Sum of R 2 500 000-00  With a deductible of - to be determined by the contractor</p> <p><b><u>42.4 DOCUMENTS</u></b></p> <p>42.4.1 Waivers of <b>contractors lien</b> or right of continuing possession is required</p> <p style="text-align: right;"><i>Yes</i></p> <p>42.4.2 Number of construction document copies to be supplied to the <b>contractor</b> free of charge:</p> <p style="text-align: right;">3 Number of</p> <p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 1  Preliminaries and Generals  Bill No. 1  Preliminaries and General</p>	<p style="text-align: right;">R</p> <hr/> <p style="text-align: right;">R</p>
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	<b>Brought Forward</b>		R
	<p>42.4.3 <b>Bills of Quantities/Lump sum document</b> schedule of rates drawn up in accordance with:</p> <p>“Standard System of Measuring Builders’ Work”</p> <p>42.4.4 On acceptance of the tender the bills of quantities/lump sum document is to be submitted within <b>working days</b></p> <p><i>The priced bills of quantities must be handed in with the tender</i></p> <p>42.4.5 JBCC Engineering General Conditions are to be included in the <b>contract documents</b>:</p> <p>Yes</p> <p>42.4.6 The contract value is to be adjusted using escalation adjustment indices</p> <p>No</p> <p>Where <b>JBCC CPAP</b> is to be used <i>Base Month</i> <b>August 2017</b></p> <p>42.4.7 Details of changes made to the provision of JBCC standard documentation:</p>		
	<b><u>SECTION B: PRELIMINARIES</u></b>		
	<b><u>Definitions and interpretation (B1)</u></b>		
	<b><u>Documents (B2)</u></b>		
2	Provisional bills of quantities (B2.2)		
	<p>F:..... V:..... T:.....</p>	N/A	
	<b><u>The site (B3)</u></b>		
	Existing premises occupied (B3.4)		
	<p>F:..... V:..... T:.....</p>		
	<b>Carried Forward</b>		R
	<p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>		



			Brought Forward	R
			Previous work - dimensional accuracy (B3.5)	
			F:..... V:..... T:.....	
			Previous work - defects (B3.6)	
			F:..... V:..... T:.....	
			<u>Management of contract (B4)</u>	
3			Management of the works (B4.1)	
			F:..... V:..... T:.....	
			<u>Samples, Shop Drawings and Manufacturer's Instructions (B5)</u>	
			<u>Temporary works and plant (B6)</u>	
4			Subcontractors' notice board (B6.6)	
			F:..... V:..... T:.....	
			<u>Temporary services (B7)</u>	
			<u>Prime cost amounts (B8)</u>	
			<u>Attendance on N/S Subcontractors (B9)</u>	
			<u>Financial aspects (B10)</u>	
			<u>General (B11)</u>	
			<u>Schedule of variables (B12)</u>	
			12.1.1 Provisional bills of quantities (B2.2) The quantities are provisional:	
			No	
			Carried Forward	R
			Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General	

<p style="text-align: right;"><b>Brought Forward</b></p> <p>12.1.2 Availability of construction documentation (B2.3) Construction documentation is not complete <i>No</i></p> <p>12.1.3 Interest of agents (B2.4)</p> <p>12.1.4 Defined works area (B3.1)</p> <p>12.1.5 Geotechnical investigation (B3.2) N/A</p> <p>12.1.6 Existing premises occupied (B3.4)</p> <p>12.1.7 Previous work - dimensional accuracy (B3.4)</p> <p>12.1.8 Previous work - defects (B3.5)</p> <p>12.1.9 Services - known (B3.7)</p> <p>12.1.10 Protection of trees (B3.9)  All trees should be protected and only on instruction of the Principal Agent may any trees be removed</p> <p>12.1.12 Enclosure of the works (B6.2)</p> <p>12.1.11 Inspection of adjoining properties (B3.11)</p> <p>12.1.13 Offices (B6.4.3)  An office for the clerck of works should be provided</p> <p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	<p style="text-align: center;">R</p> <hr/> <p style="text-align: center;">R</p>
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<b>Brought Forward</b>		R	
12.1.14 Main notice board (B6.5)  YES			
12.1.15 Subcontractors notice board (B6.6) A notice board is required  No			
12.1.16 Water (B7.2) Alternative Selected: A			
12.1.17 Electricity (B7.3) Alternative selected: A			
12.1.18 Telecommunications (B7.4)			
12.1.19 Ablution facilities (B7.5) Alternative selected: A			
12.1.20 Protection of existing/sectionally occupied works (B11.2)			
12.1.21 Special attendance (B9.2)  Subcontractor (1) details:  N/A			
12.1.22 Protection of the works (B11.1)  N/A			
12.1.23 Disturbance (B11.5)  N/A			
12.1.24 Environmental Disturbance (B11.6)  N/A			
<b><u>Post tender information (B12.2)</u></b>			
12.2.1 Payment of preliminaries Alternative selected: B			
<b>Carried Forward</b>		R	
Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General			

<p style="text-align: right;"><b>Brought Forward</b></p> <p>12.2.2 Adjustment of preliminaries Alternative selected: A</p> <p>12.2.3 Additional agreed preliminaries items N/A</p> <p><b><u>SECTION C: SPECIFIC PRELIMINARIES</u></b></p> <p>Any special items to meet the particular circumstances of a specific project are embodied in this section. Where required for an aspect of the works to be executed according to a design by a consulting engineer, a recital of the headings to the individual clauses of the JBCC Engineering General Conditions are included</p> <p>The contractor shall take delivery of, handle, store, use, apply and/or fix all proprietary branded products in strict accordance with the manufacturers' instructions after consultation with the manufacturer's authorised representative</p> <p>Contract instructions issued on site are to be recorded in triplicate in a contract instruction book which is to be supplied and maintained on site by the contractor</p> <p>At the end of each week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number and descriptions of tradesmen and labourers employed by him and all subcontractors on the works each day of that week</p> <p>At the end of each week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools used on the works each day of that week</p> <p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	<p style="text-align: center;">R</p> <hr/> <p style="text-align: center;">R</p>
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<p style="text-align: center;"><b>Brought Forward</b></p> <p>Where guarantees are called for, the contractor shall obtain a written guarantee, 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 guarantee shall state that workmanship, materials and installation are guaranteed for a specified period from the date of certified completion of the contract, 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 from the principal agent to do so. This guarantee 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. The principal agent shall be the sole judge of the cause responsible for defects in the work and his decision shall be final and binding in terms of clause 40.2 of the agreement</p> <p>Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the contractor unless the principal agent has specifically authorised, in writing, prior to execution thereof, that costs for such overtime are to be borne by the employer</p> <p>It is specifically agreed that the contractor accepts the obligation of assisting the professional consultants 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 quantity surveyor undertakes to make available to the contractor all budgetary allowances and cost assessments/reports to enable the proper procedures to be implemented and the contractor will attend all cost plan review and cost management meetings. The contractor undertakes to extend these procedures in regard to all subcontractors</p> <p>Any Principal Contractor entering into a contract with The Developer must achieve an acceptable level of Occupational Health and Safety performance. Refer to "Project Specification" and "Safety, Health and Environmental Evaluation Questionnaire" The contractor to comply with all provisions of the above and to be enforced on all selected and or other sub-contractors, as no claim afterwards will be entertained</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 1 Preliminaries and Generals Bill No. 1 Preliminaries and General</p>	<p style="text-align: center;">R</p>

**Brought Forward**

**SUMMARY OF CATEGORIES**

Category : Fixed R.....

Category : Value R.....

Category : Time R.....

R

**Carried to Final Summary**

Section No. 1  
Preliminaries and Generals  
Bill No. 1  
Preliminaries and General

R

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO.1</u></b>			
<b><u>DEMOLITIONS</u></b>			
<u>Note</u>			
Unless otherwise stated, all usable material from the demolitions should be kept safely and handed over to the school governing body or the school principal who shall sign for all material received.			
The builder should allow for the removal of all debris from site at all times and keeping the site clean at all times.			
<u>Taking down and removing</u>			
1			
Demolitions of Total of 7 x Waterborne Toilets - 2 x Waterborne toilets constructed with asbestos panels , and 5 x comprising of brickwork, corrugated iron sheeting, with a flat roof, Toilets (not exceeding 70m2) , including carting away to a dumping site. Including all necessary Demolitions of Asbestos Regulations and safety compliance as required for the demolitions works of Asbestos.			
	Item		
<b><u>ALTERATIONS</u></b>			
<b><u>PREAMBLE</u></b>			
For preamble see "specificatin of materials and methods to be used - PW371"			
<u>REMOVAL OF EXISTING WORK</u>			
<u>Taking out and removing sanitary fittings, tanks, geysers, etc, including disconnecting from pipes, traps, etc and making good floor and wall finishes</u>			
2			
Waterborne pan with cistern and flush pipe and prepare an make good for new.			
	No	4	
<b>Carried Forward</b>			R
Section No. 2 Alterations Bill No. 1 Alterations			

Brought Forward			R
3	Remove ceilings and prepare an make good for new.	m2	30
4	Removal of Windows not exceeding 2.5m2 and prepare an make good for new.	No	2
5	Remove wash hand basins and prepare an make good for new.	No	4
6	Removal of Mirrors and prepare an make good for new.	No	4
<b><u>REFURBISHMENT OF EXISTING BUILDINGS</u></b>			
<b><u>CEILING CONSTRUCTION, CORNICES, ETC.</u></b>			
<b><u>CORNICES</u></b>			
<u>Gypsum plasterboard cornices</u>			
7	75mm Cornice plugged and screwed to wall	m	35
<b><u>CEILINGS</u></b>			
<u>6.4mm Gypsum Rhinoboard clout nailed with 12mm wide H-profile primed steel jointing cover strips over joints</u>			
8	Ceilings including 38 x 50mm brandering at maximum 400mm centres	m2	30
9	Extra over ceiling for opening for 610 x 610mm trap door of 50 x 76mm wrought softwood rebated framing with one 38 x 38mm sawn softwood cross brander covered with ceiling board and fitted flush in opening	No	2
<b><u>TILING</u></b>			
<b><u>CERAMIC FLOOR TILING</u></b>			
<u>Ceramic floor tiles none slip with a PC Amount of R 280 delivered to site , as approved by the Architect, fixed with adhesive in strict accordance with the manufacturer's recommendations, including pointing, jointing, all square cutting and waste and cleaning on completion to:</u>			
10	Floor tiles	m2	30
Carried Forward			R
Section No. 2 Alterations Bill No. 1 Alterations			



Brought Forward			R
<b><u>CARPENTRY AND JOINERY</u></b>			
<b><u>EAVES, VERGES, ETC</u></b>			
<u>"Everite FC77" pressed fibre-cement</u>			
11	15 x 230mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	50
<b><u>DOORS, ETC</u></b>			
<u>Wrought meranti doors hung to steel frames</u>			
12	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	2
13	44mm Purpose made Framed batten door 813 x 1882mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed (door raised by 120mm from bottom) (D2)	No	4
<b><u>PLASTERING</u></b>			
<b><u>INTERNAL PLASTER</u></b>			
<u>Cement plaster on brickwork</u>			
14	On walls	m2	40
15	On narrow widths	m2	2
<b><u>PLUMBING AND DRAINAGE</u></b>			
<b><u>SANITARY FITTINGS</u></b>			
<u>Vaal or similar approved</u>			
Carried Forward			R
Section No. 2 Alterations Bill No. 1 Alterations			

Brought Forward			R
<b><u>White glazed fireclay or vitreous china coupling with SABS specification 497 in</u></b>			
16	"Vaal or similar approved duct LL LYNX Cistern complete with pan and rubber flushpipe connector. Installation method will be instructed by Engineer on site.	No	4
17	"Vaal hibiscus" wash hand basin bolted to wall including all fittings and necessary pipework	No	4
18	"Vaal or similar approved urinal fixed to wall including fittings and necessary pipework SABS specification.	No	
<b><u>TAPS, VALVES, ETC</u></b>			
Manufactured by "Cobra Watertech" or other and approved			
19	32mm CP waste plastic plug and chain	No	9
20	15mm cobra 503-21B elbow action pillar cold water tap	No	12
<b><u>WASTE UNIONS ECT</u></b>			
<u>Manufactured by " cobra Watertech"</u>			
21	15mm "232/350CP" angle regulating valve with 350mm long service connection	No	6
22	15mm Stopcock	No	6
23	22mm Non-return valve	No	6
24	22mm 700RB high pressure float valve including ball	No	9
25	PBI.10RB 22mm vacuum breaker	No	9
<b><u>TRAPS ETC</u></b>			
26	32mm x 40mm bottle trap	No	9
Carried Forward			R
Section No. 2 Alterations Bill No. 1 Alterations			

Brought Forward			R
	<u>Pre-cast concrete wash trough</u>		
27	Supply and install pre-cast concrete double wash-trough, complete with all necessary pipework including soakaway size 1000 x 1000 x 1000mm covered with "bidim"	No	3
	<b><u>FITTINGS</u></b>		
	"Walker Crosweller" or Similar		
28	15mm chrome plated push button taps to wash troughs with internal flow control, strainer, no hold feature and water saving shut-off	No	9
29	32mm CP waste plastic plug and chain	No	9
	"Kimberley - Clark" or Similar		
30	21 Litre Stainless-steel SHE-BIN plugged to wall with dimensions 505 x 280 x 180mm, fill volume size 12L, including hand operated lid.	No	2
	<b><u>DRAINAGE</u></b>		
	<u>Upvc Pipes</u>		
31	110mm Upvc diameter pipe laid in ground not exceeding 1m, but n.e 1.5m deep, including trenches.	m	40
32	50mm Upvc pipe	m	20
	<u>Extra over Upvc pipes for fittings</u>		
33	110mm Junction with inspection eyes	No	3
34	110mm bend	No	12
35	110mm pan connector	No	9
36	110mm Junction	No	12
37	110mm x 50mm Reducer	No	9
38	50mm bend	No	8
39	50mm access bend	No	12
	<b>Carried Forward</b>		R
	Section No. 2 Alterations Bill No. 1 Alterations		

Brought Forward			R
	<u>PVC-U soil and vent pipes</u>		
40	110mm vent pipe	No	9
41	50mm vent pipe	No	9
42	15mm Service pipe 350mm girth	No	9
<b><u>GLAZING</u></b>			
<b><u>GLAZING TO STEEL WITH PUTTY</u></b>			
	<u>6.38mm Obscure safety glass</u>		
43	Panes not exceeding 0,1 m2	m2	9
<b><u>PAINTWORK</u></b>			
<b><u>PAINTWORK, ETC TO NEW WORK</u></b>			
<b><u>ON FIBRE-CEMENT</u></b>			
	<u>Prepare and brush to remove all loose contaminations, apply one coat primer and two coats PVA emulsion paint</u>		
44	On fascias and barge boards	m2	22
<b><u>ON METAL</u></b>			
	<u>Spot priming defects in pre-primed surfaces with metal primer and apply two finishing coats high gloss enamel paint</u>		
45	On door frames	m2	26
46	On gates (Measured over the full flat area of both sides)	m2	14
47	On gutters and down pipes	m	33
<b><u>ON WOOD</u></b>			
	<u>Sand smooth, seal knots prime with wood primer and apply two finishing coats gloss enamel paint</u>		
48	On doors (Internal)	m2	11
Carried Forward			R
Section No. 2 Alterations Bill No. 1 Alterations			

Brought Forward			R
49	On doors (External)  <u>Spot prining defects in prime surface with zinc chromate primer and apply one universal undercoat and two coats EPWP, golden brown gloss enamel paint on steel</u>	m2	7
50	On windows with burglar bars  <b><u>ON FLOATED PLASTER</u></b>  <u>Prepare and prime with Plaster Primer and apply two finishing coat matt finish paint</u>	m2	14
51	On internal walls	m2	84
Carried to Final Summary			R
Section No. 2 Alterations Bill No. 1 Alterations			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.1</u></b>			
	<b><u>FOUNDATIONS (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Nature of ground</u></b>			
	<b><i>Classification of excavated material</i></b>			
	A soils investigation has been carried out on site by the Principal Agent and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured			
	<b><u>Filling (General)</u></b>			
	It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used			
	All filling obtained from a commercial source should comply to minimum G6 standard			
	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"			
	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			
	<b>Carried Forward</b>		R	
	Section No. 3 Type - M4 Bill No. 1 Foundation			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>Backfilling described as:</p> <ul style="list-style-type: none"> <li>- <b>"filling in pipe trenches, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> <li>- <b>"filling behind retaining walls, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> </ul> <p><b><u>Filling in sub-layers, under floors, etc</u></b></p> <p>All filling in layers under surface beds, in sub-layers, to form earth mattresses, etc. shall be done with materials specified and according to methods prescribed by the SABS 1200ME Sub-base Specification</p> <p>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</p> <p>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 Bureau of Standards and be kept on site at all times</p> <p><b><u>CBR and indicator tests</u></b></p> <p>Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed</p> <p>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</p> <p>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</p> <p><b><u>Density tests</u></b></p> <p>It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:</p>	<p style="text-align: center;">R</p>	
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 3 Type - M4 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>	

<p style="text-align: center;"><b>Brought Forward</b></p> <ul style="list-style-type: none"> <li>- <b>Filling under surface beds, aprons, channels, etc:</b> 1 Test per 125m<sup>2</sup> plan area per each 150mm thick layer</li> <li>- <b>Filling behind retaining walls:</b> 1 Test per each 150mm thick layer per each 15m length of retaining wall</li> </ul> <p>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</p> <p>A separte item has been measured for density tests in this Bill</p> <p>No additional claims in this regard will afterwards be entertained</p> <p><b><u>Carting away of excessive and/or unsuitable excavated material</u></b></p> <p>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</p> <p>The location of the intended dumping site will be subjected to the prior written approval of the Principal Agent</p> <p>The Contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used for 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</p> <p>Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 3 Type - M4 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>



<b>Brought Forward</b>			R
<b><u>Measurement and payment</u></b>			
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			
<b><u>Mixing of concrete</u></b>			
No hand mixing of concrete will be allowed on site			
<b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b>			
The Contractor is referred to the next Bill No 2, Concrete, Formwork and Reinforcement, and Bill No 3, Masonry, 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			
<b><u>Demolitions</u></b>			
<u>Note:</u>			
Unless otherwise stated, all usable material from the demolitions should be kept safely and handed over to the school governing body or the school principal who shall sign for all material received.			
The builder should allow for the removal of all debris from site at all times and keeping the site clean at all times.			
<b><u>SITE CLEARANCE</u></b>			
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2	67
2	Stripping average 100mm thick layer of top soil and stockpiling on site	m2	67
<b><u>EXCAVATION, FILLING, ETC</u></b>			
<b>Carried Forward</b>			R
Section No. 3 Type - M4 Bill No. 1 Foundation			

Brought Forward				R
	<u>Excavation in earth or compacted platforms not exceeding 2m deep</u>			
3	Trenches	m3	8	
4	For aprons thickening	m3	2	
	<u>Extra over trench and hole excavations in earth for excavation:</u>			
5	Soft rock	m3	4	
6	Hard rock	m3	2	
	<u>Extra over all excavations for carting away</u>			
7	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	25	
	<u>Risk of collapse of excavations</u>			
8	Sides of trench and hole excavations not exceeding 1,5m deep	m2	47	
	<u>Keeping excavations free of water</u>			
9	Keeping excavations free of water		Item	
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density</u>			
10	Under floors, steps, pavings, etc.	m3	8	
11	Backfilling to trenches, holes, etc.	m3	4	
	<u>Compaction of surfaces</u>			
12	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	23	
13	Compaction of ground surface to aprons etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	29	
Carried Forward				R
Section No. 3 Type - M4 Bill No. 1 Foundation				

Brought Forward			R
	<u>Prescribed density tests on filling</u>		
14	"Modified AASHTO Density" test	No	4
	<b><u>SOIL POISONING</u></b>		
	All soil poisoning and insecticide to be applied under a <i>five year</i> guarantee by an approved firm of Specialists. Soil insecticides shall comply with <i>SABS Specification 1165</i> . Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - <i>SABS Code of Practice 0124</i>		
	Casting of concrete floors to start within 24 hours after the application of soil poisoning		
	<i>Pest control applicators must provide :</i>		
	1. Proof of pesticides and insecticides (data sheets)		
	2. Toxicants must be registered with the Departement of Agriculture		
	2. Proof that they are qualified to perform the work		
	3. Five year guarantee certificate		
	<u>Soil poisoning and insecticide</u>		
15	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	23
16	To bottoms and sides of trenches, etc	m2	23
17	To bottom of concrete aprons	m2	19
	<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>		
	<u>UNREINFORCED CONCRETE, ETC</u>		
	<u>25MPa/19mm concrete</u>		
18	Strip footings	m3	5
19	Aprons cast in panels	m3	3
20	Extra over concrete in surface beds for thickening 85mm deep the bottom including all excavation, backfilling etc.	m	33
	<b>Carried Forward</b>		R
	Section No. 3		
	Type - M4		
	Bill No. 1		
	Foundation		

Brought Forward			R
21	Thickening down apron on edge 110mm deep x 200mm wide	m	11
<b><u>TEST CUBES</u></b>			
22	Allow for preparing a set of three test cubes each size 150x150x150mm, sending them to an approved testing laboratory for testing and paying all charges in connection therewith.	Sets	6
<b><u>CONCRETE SUNDRIES</u></b>			
<u>Finishing top surfaces of concrete smooth with a steel trowel</u>			
23	Aprons and pavings to falls	m2	23
24	Surface beds, slabs, etc.	m2	25
<b><u>ROUGH FORMWORK (DEGREE OF ACCURACY III)</u></b>			
<u>Rough formwork to sides</u>			
25	Edges of surface beds not exceeding 300mm high or wide	m	66
<b><u>REINFORCEMENT (PROVISIONAL)</u></b>			
<u>Mesh reinforcement</u>			
26	Ref 395 Mesh steel fabric reinforcement laid in concrete surface beds minimum 150mm along edges and ends (Measured net)	m2	23
<b><u>BRICKWORK IN FOUNDATIONS</u></b>			
<u>Brickwork of NFX bricks in class I mortar</u>			
27	One brick walls	m2	9
<b><u>BRICKWORK SUNDRIES</u></b>			
<u>Brickwork reinforcement</u>			
28	150mm Wide reinforcement built in horizontally	m	15
Carried Forward			R
Section No. 3 Type - M4 Bill No. 1 Foundation			

Brought Forward			R
<b><u>FACE BRICKWORK</u></b>			
<u>Face Bricks (PC Amount R 5 500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>			
29	Extra over brickwork for face brickwork in foundation	m2	4
<b>Carried Forward to Summary of Section No. 3</b>			
Section No. 3			
Type - M4			
Bill No. 1			
Foundation			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO. 2</u></b>			
<b><u>MASONRY</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Sizes in descriptions</u></b>			
Where sizes in descriptions are given in brick units, "one-brick" shall represent the length and "half-brick" the width of a brick			
<b><u>Face bricks</u></b>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<b><u>Pointing</u></b>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
<b><u>SUPERSTRUCTURE</u></b>			
<b><u>FACE BRICKWORK</u></b>			
Face Bricks (PC Amount R 5,500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints			
1	Half brickwork for face brick walls pointed both sides	m2	21
2	One brickwork for face brick walls pointed both sides	m2	57
3	Extra over brickwork for face brickwork in beamfilling	m2	4
4	Fair raking and cutting	m	11
<b>Carried Forward</b>			R
Section No. 3 Type - M4 Bill No. 2 Masonry			

Brought Forward			R
	<u>Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces</u>		
5	Extra over brickwork for brick-on-edge header course lintels pointed on two sides and 110mm soffit	m	8
6	Face brick-on-edge window sill 220mm wide pointed on two side and on top and set at a angle	m	6
7	Fair cutting and fitting around pipe not exceeding 100mm diameter.	m	6
<b><u>BRICKWORK SUNDRIES</u></b>			
	<u>Brickwork reinforcement</u>		
8	75mm Wide reinforcement built in horizontally	m	125
9	150mm Wide reinforcement built in horizontally	m	362
	<u>Turning pieces</u>		
10	220mm Wide turning piece to lintels etc	m	7
	<u>Galvanised hoop iron cramps, ties, etc</u>		
11	6mm Diameter roof tie 2m girth bent double with one end fixed to timber and other built into brickwork	No	11
	<u>Prestressed fabricated lintels</u>		
12	Pair of 110 x 75mm Lintels in lengths exceeding 3m and not exceeding 4,5m	m	9
	<u>Ventillation bricks</u>		
13	Set of two 22 x 155mm high terra cotta clay vermin proof air bricks including making good reveals and gauze	No	8
<b>Carried Forward to Summary of Section No. 3</b>			R
Section No. 3			
Type - M4			
Bill No. 2			
Masonry			

[illegible]



Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO.4</u></b>			
<b><u>ROOF COVERINGS ETC</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>General</u>			
All roof coverings, etc, to be with a covering of Z275 galvanising			
The roof coverings shall be roll-formed in continuous lengths from certified steel complying with ASTM 446 Grade E (3t) and shall carry Agreement Certification			
All holes to be drilled and not punched			
Where described as with "Globalcoat" finish, all sheets, flashings, etc., shall be with "Globalcoat" silicone polyester paint for exterior use			
<u>Sizes</u>			
All items are measured net unless otherwise described			
<u>Flashings, trimming plates, etc</u>			
Prices to include for all cutting and waste and relevant fixing material, unless otherwise described			
All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable			
All items are unless otherwise described measured net			
<b><u>PROFILED METAL SHEETING AND ACCESSORIES</u></b>			
<b>Carried Forward</b>			R
Section No. 3 Type - M4 Bill No. 4 Roof Covering, ETC			

Brought Forward			R
<b><u>0.6mm "Kliplok" roof sheeting in chromadek finish fixed to timber purlins (elsewhere)</u></b>			
<b><u>NOTE:</u></b>			
A written guarantee stating that the roofs including the flashings, are guaranteed to be waterproof for a period of 12 months must be submitted and handed over to the Principal Agent			
1	Roof covering with pitch not exceeding 25 degrees	m2	29
<u>Sundries</u>			
2	12" Thermal resistance sisalation laid on purlins	m2	29
<b>Carried Forward to Summary of Section No. 3</b>			R
Section No. 3			
Type - M4			
Bill No. 4			
Roof Covering, ETC			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.5</u></b>			
	<b><u>CARPENTRY AND JOINERY</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Pre-fabricated metal connected timber roof trusses</u>			
	All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction			
	<u>Timber</u>			
	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			
	<u>Bolts</u>			
	Bolts shall be in accordance with BS 4190 or SANS 135			
	<u>Shear plates, tooth connectors and split rings</u>			
	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"			
	<u>Washers</u>			
	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			
	<b>Carried Forward</b>		R	
	Section No. 3 Type - M4 Bill No. 5 Carpentry and Joinery			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness</p> <p>3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness</p> <p><u>Metal connector plates</u></p> <p>Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel</p> <p>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/m<sup>2</sup> commercial class hot dipped galvanising as per SANS 934 before stamping</p> <p>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</p> <p><u>Truss construction</u></p> <p>Trusses shall be constructed in jigs specially designed to ensure the correct profile, overhangs and cambers</p> <p>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</p> <p><u>Truss design</u></p> <p>All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")</p> <p>The truss centres shall be less than or equal to that as described in this bill for each respective truss</p> <p><u>Truss spacing</u></p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 3 Type - M4 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Truss pitch</u></p> <p>The truss pitch shall be as described in this bill for each respective truss type</p> <p><u>Truss loading</u></p> <p>Trusses shall be designed for a live load of 0,50kN/m<sup>2</sup> and dead load as specified under the sub-heading "Specific load specifications for roof trusses"</p> <p><u>Shop drawings, design and erection guarantee certificates</u></p> <p>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</p> <p><u>Dimensions</u></p> <p>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</p> <p><u>Erection</u></p> <p>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</p> <p><u>Design system</u></p> <p>The design system as documented in this bill is based on the "MiTek" system and all references given in the descriptions are related to specific type of trusses based on this design system</p> <p>However, Contractors are to note that any design system of similar quality may be used subject to the prior written approval of the Principal Agent</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 3 Type - M4 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Specific specifications for roof trusses</u></p> <p>Unless otherwise described, the following specifications will apply:</p> <ol style="list-style-type: none"> <li>1 All trusses to be with a 17° pitch at approximately 1000mm centres</li> <li>2 The dead load consists of 0,6mm "Corrugated Iron Roof Truss" heavy industrial galvanised finish, 50 x 76mm purlins at approximately 1150mm centres, 6mm fibre-cement nailed-up ceilings on 50 x 38mm brandering at 400mm centres and 50mm glass fibre insulation blanket laid on top of ceilings</li> </ol> <p><u>Rates</u></p> <p>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, fabrication of trusses, checking the completed truss for quality, loading up, transporting to the site of the works and off loading, storing under cover and protecting from the weather, hoisting up in position and erection of the roof truss structure, necessary supervision, submission of all shop drawings, design and erection guarantee certificates, etc. as specified</p> <p><u>Particle board</u></p> <p>Particle board shall comply with the following specifications:</p> <ol style="list-style-type: none"> <li>a) SANS 1300 Particle board: exterior and flooring type</li> <li>b) SANS 1301 Particle board: interior type</li> </ol> <p><u>Joinery</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 3 Type - M4 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

Brought Forward				R
Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes				
<u>Fixing</u>				
Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete				
<u>Decorative laminate finish</u>				
Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish				
Items described as with "Formica" on one side shall include a "CPL" treated brown backer on other side and "Vaposeal" sealer. All cut edges and exposed particle board to be sealed with one coat acrylic sealer and then with allche				
<b><u>ROOFS, ETC.</u></b>				
<b><u>The following in plate nailed timber roof truss construction</u></b>				
<u>The following is applicable in respect of roof trusses</u>				
The references given in the descriptions are to the respective types of trusses detailed on the architect's drawings annexed to these bills of quantities/accompanying these bills of quantities for tender purposes				
Prices for rafters and trusses to include all "Hurricane" clips, steel M-runners and "Permfix" plates, screws, nails, wires, sundry material, etc (bracing, wallplates, purlins and gangboarding are measured seperately)				
<u>Sawn softwood</u>				
1	38 x 114mm Rafters in lengths exceeding 3,9m ans not exceeding 6,6	m	33	
2	76 x 38mm wall plates	m	19	
3	50 x 76mm Purlins in lengths exceeding 3,9m and not exceeding 6,6m	m	42	
<b>Carried Forward</b>				R
Section No. 3 Type - M4 Bill No. 5 Carpentry and Joinery				

Brought Forward			R
<u>Sundries</u>			
4	Two coats creosote on sawn timbers	m2	33
5	6mm Diameter galvanised wire tie 3000mm girth wrapped around rafter and purlin with ends tied together	No	11
6	Hurricane clips	No	18
<b><u>EAVES, VERGES, ETC</u></b>			
<u>"Everite FC77" pressed fibre-cement</u>			
7	15 x 230mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	22
<b><u>DOORS, ETC</u></b>			
<u>Wrought meranti doors hung to steel frames</u>			
8	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	2
9	44mm Purpose made Framed batten door 813 x 1882mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed (door raised by 120mm from bottom) (D2)	No	4
<b>Carried Forward to Summary of Section No. 3</b>			R
Section No. 3			
Type - M4			
Bill No. 5			
Carpentry and Joinery			



Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO. 7</u></b>			
<b><u>METALWORK</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and method to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Descriptions</u></b>			
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			
Metalwork described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
<b><u>WELDED SCREENS, GATES, ETC</u></b>			
<u>Steel gates and frames</u>			
1	Purpose made square hallow section mild steel security gate, size 813 x 2032mm High	No	2
<b><u>PRESSED STEEL DOOR FRAMES</u></b>			
<u>1,2mm Double rebated frames suitable for half brick walls (with no paint finish)</u>			
2	Frame for door 813 x 2032mm high	No	4
<u>1,6mm Double rebated frames suitable for one brick walls</u>			
3	Frame for door 813 x 2032mm high	No	2
<b><u>STEEL WINDOWS, DOORS, ETC</u></b>			
<b>Carried Forward</b>			R
Section No. 3 Type - M4 Bill No. 6 Metalwork			

Brought Forward			R	
	<u>Standard "Durowin" galvanised industrial type windows</u>			
4	Window type NE1, 533 x 654mm high including burglar bars	No	6	
5	Window type NE 7,1022 x 654mm high including burglar bars	No	3	
Carried Forward to Summary of Section No. 3			R	
Section No. 3				
Type - M4				
Bill No. 6				
Metalwork				

Item No		Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>				
<b><u>BILL NO. 6</u></b>				
<b><u>IRONMONGERY</u></b>				
<b><u>PREAMBLES</u></b>				
For preambles see " Specification of materials and methods to be used - PW 371"				
<b><u>SUPPLEMENTARY PREAMBLES</u></b>				
<b><u>Finishes to ironmongery</u></b>				
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				
<b><u>CATCHES, CABIN HOOKS, ETC</u></b>				
<u>Approved</u>				
1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	2	
<b><u>LOCKS</u></b>				
<b><u>"EN-SUITE" LOCKS</u></b>				
The following locks are to be suitable for master and grand master key operation				
<b>Carried Forward</b>				R
Section No. 3 Type - M4 Bill No. 7 Ironmongery				

Brought Forward			R
	<u>"Dorma"</u>		
2	Three lever mortice lockset	No	2
3	Indicator lockset	No	4
<b><u>SUNDRIES</u></b>			
	<u>"Dorma"</u>		
4	38mm Diameter rubber door stop plugged	No	5
<b><u>LETTERS, NAME PLATES, ETC</u></b>			
	<u>Union or similar approved</u>		
5	75 x 150mm Natural anodised aluminium plate with male or female symbol	No	2
<b><u>BATHROOM FITTINGS</u></b>			
	<u>Kimberley-Clarkor Simlilar</u>		
6	Kimberly Clark SQ2 code 405607B white lockable toilet roll holder	No	4
<b>Carried Forward to Summary of Section No. 3</b>			R
Section No. 3			
Type - M4			
Bill No. 7			
Ironmongery			

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Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 9</u></b>			
	<b><u>PLUMBING AND DRAINAGE</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>uPVC pipes and fittings</u></b>			
	Soil, waste and vent pipes and fittings shall be solvent weld jointed			
	<b><u>uPVC pressure pipes and fittings</u></b>			
	Pipes for water supply shall be of the class stated			
	Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings			
	Pipes of 50mm diameter and greater shall have sockets and spigots with push in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints			
	<b><u>Copper pipes</u></b>			
	Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground			
	<b>Carried Forward</b>		R	
	Section No. 3 Type - M4 Bill No. 9 Plumbing and Drainage (Provisional)			

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>Fixing of pipes</u></b></p> <p>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</p> <p><b><u>Reducing fittings</u></b></p> <p>Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained</p> <p><b><u>Wire gratings</u></b></p> <p>Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings</p> <p><b><u>Flush pans</u></b></p> <p>Flush pans shall have straight or side outlets and "P" or "S" traps as necessary</p> <p><b><u>Stainless steelbasins, sinks, wash troughs, urinals, etc.</u></b></p> <p>Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable</p> <p><b><u>Waste unions</u></b></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings</p> <p><b><u>SANITARY FITTINGS</u></b></p> <p><u>Vaal or similar approved</u></p>	<p style="text-align: right;">R</p>
<p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 3 Type - M4 Bill No. 9 Plumbing and Drainage (Provisional)</p>	<p style="text-align: right;">R</p>

Brought Forward			R
<b><u>White glazed fireclay or vitreous china coupling with SABS specification 497 in</u></b>			
1	"Vaal or similar approved duct LL LYNX Cistern complete with pan and rubber flushpipe connector. Installation method will be instructed by Engineer on site.	No	4
2	"Vaal or similar approved urinal fixed to wall including fittings and necessary pipework SABS specification.	No	4
3	"Vaal hibiscus" wash hand basin bolted to wall including all fittings and necessary pipework	No	2
<b><u>TAPS, VALVES, ETC</u></b>			
Manufactured by "Cobra Watertech" or other and approved			
4	32mm CP waste plastic plug and chain	No	4
5	15mm cobra 503-21B elbow action pillar cold water tap	No	4
<b><u>WASTE UNIONS ECT</u></b>			
<u>Manufactured by " cobra Watertech"</u>			
6	15mm "232/350CP" angle regulating valve with 350mm long service connection	No	4
7	15mm Stopcock	No	4
8	22mm Non-return valve	No	4
9	22mm 700RB high pressure float valve including ball	No	4
10	PBI.10RB 22mm vacuum breaker	No	4
<b><u>TRAPS ETC</u></b>			
11	32mm x 40mm bottle trap	No	2
Carried Forward			R
Section No. 3 Type - M4 Bill No. 9 Plumbing and Drainage (Provisional)			



Brought Forward			R
	<u>Pre-cast concrete wash trough</u>		
12	Supply and install pre-cast concrete double wash-trough, complete with all necessary pipework including soakaway size 1000 x 1000 x 1000mm covered with "bidim"	No	1
	<b><u>FITTINGS</u></b>		
	"Walker Crosweller" or Similar		
13	15mm chrome plated push button taps to wash troughs with internal flow control, strainer, no hold feature and water saving shut-off	No	2
14	32mm CP waste plastic plug and chain	No	2
	"Kimberley - Clark" or Similar		
	<b><u>DRAINAGE</u></b>		
	<u>Upvc Pipes</u>		
15	110mm Upvc diameter pipe laid in ground not exceeding 1mm, but n.e 1.5m deep,including trenches.	m	40
16	50mm Upvc pipe	m	20
	<u>Extra over Upvc pipes for fittings</u>		
17	110mm Junction with inspection eyes	No	3
18	110mm bend	No	12
19	110mm pan connector	No	9
20	110mm Junction	No	12
21	110mm x 50mm Reducer	No	9
22	50mm bend	No	8
23	50mm access bend	No	12
	<u>PVC-U soil and vent pipes</u>		
24	110mm vent pipe	No	9
	<b>Carried Forward</b>		R
	Section No. 3 Type - M4 Bill No. 9 Plumbing and Drainage (Provisional)		

Brought Forward				R
25	50mm vent pipe	No	9	
26	15mm Service pipe 350mm girth	No	9	
<b><u>WATER SUPPLY</u></b>				
<u>Class O copper pipe</u>				
27	15mm Pipes	m	20	
28	22mm Pipes	m	20	
<u>Extra over class O copper fittings</u>				
29	15mm fittings	No	30	
30	22mm fittings	No	30	
31	Copper overflow and service pipes	No	30	
<u>Galvanised pipes and fittings</u>				
32	15mm Pipes	m	30	
33	22mm Pipes	m	30	
<u>Extra over Galvanised pipes for fittings</u>				
34	15mm Fitting	No	30	
35	22mm Fitting	No	30	
36	15mm Service pipe 350mm girth	No	12	
<u>32mm Diameter Class 10 HDPE pipe</u>				
37	32mm HDPE Class 10 HDPE Pipes, including excavation in earth, from the existing connection point to the washing troughs	m	50	
<u>Testing</u>				
38	Testing water pipe system		Item	
<b>Carried Forward to Summary of Section No. 3</b>				R
Section No. 3				
Type - M4				
Bill No. 9				
Plumbing and Drainage (Provisional)				

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Section No. 3  
Type - M4  
Bill No. 11  
Paintwork

Bill No	SECTION SUMMARY - Type - M4	Page No	Amount
1	Foundation	29	
2	Masonry	31	
3	Waterproofing	32	
4	Roof Covering, ETC	34	
5	Carpentry and Joinery	40	
6	Metalwork	42	
7	Ironmongery	44	
8	Plastering	45	
9	Plumbing and Drainage (Provisional)	50	
10	Glazing	51	
11	Paintwork	52	
Carried to Final Summary			R
Section No. 3 Type - M4			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.3</u></b>			
	<b><u>BILL NO.1</u></b>			
	<b><u>FOUNDATIONS (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Nature of ground</u></b>			
	<b><i>Classification of excavated material</i></b>			
	A soils investigation has been carried out on site by the Principal Agent and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured			
	<b><u>Filling (General)</u></b>			
	It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used			
	All filling obtained from a commercial source should comply to minimum G6 standard			
	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"			
	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			
	<b>Carried Forward</b>		R	
	Section No. 4 Type - SM2 Bill No. 1 Foundation			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>Backfilling described as:</p> <ul style="list-style-type: none"> <li>- <b>"filling in pipe trenches, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> <li>- <b>"filling behind retaining walls, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> </ul> <p><b><u>Filling in sub-layers, under floors, etc</u></b></p> <p>All filling in layers under surface beds, in sub-layers, to form earth mattresses, etc. shall be done with materials specified and according to methods prescribed by the SABS 1200ME Sub-base Specification</p> <p>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</p> <p>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 Bureau of Standards and be kept on site at all times</p> <p><b><u>CBR and indicator tests</u></b></p> <p>Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed</p> <p>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</p> <p>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</p> <p><b><u>Density tests</u></b></p> <p>It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 4 Type - SM2 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <ul style="list-style-type: none"> <li>- <b>Filling under surface beds, aprons, channels, etc:</b> 1 Test per 125m<sup>2</sup> plan area per each 150mm thick layer</li> <li>- <b>Filling behind retaining walls:</b> 1 Test per each 150mm thick layer per each 15m length of retaining wall</li> </ul> <p>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</p> <p>A separete item has been measured for density tests in this Bill</p> <p>No additional claims in this regard will afterwards be entertained</p> <p><b><u>Carting away of excessive and/or unsuitable excavated material</u></b></p> <p>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</p> <p>The location of the intended dumping site will be subjected to the prior written approval of the Principal Agent</p> <p>The Contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used for 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</p> <p>Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 4 Type - SM2 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>



Brought Forward		R
<b><u>Measurement and payment</u></b>		
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		
<b><u>Mixing of concrete</u></b>		
No hand mixing of concrete will be allowed on site		
<b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b>		
The Contractor is referred to the next Bill No 2, Concrete, Formwork and Reinforcement, and Bill No 3, Masonry, 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		
<b><u>Demolitions</u></b>		
<u>Note:</u>		
Unless otherwise stated, all usable material from the demolitions should be kept safely and handed over to the school governing body or the school principal who shall sign for all material received.		
The builder should allow for the removal of all debris from site at all times and keeping the site clean at all times.		
<b><u>SITE CLEARANCE</u></b>		
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2 65
2	Stripping average 100mm thick layer of top soil and stockpiling on site	m2 65
<b><u>EXCAVATION, FILLING, ETC</u></b>		
Carried Forward		R
Section No. 4 Type - SM2 Bill No. 1 Foundation		

Brought Forward				R
	<u>Excavation in earth or compacted platforms not exceeding 2m deep</u>			
3	Trenches	m3	7	
4	For aprons thickening	m3	2	
	<u>Extra over trench and hole excavations in earth for excavation:</u>			
5	Soft rock	m3	1	
6	Hard rock	m3	1	
	<u>Extra over all excavations for carting away</u>			
7	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	18	
	<u>Risk of collapse of excavations</u>			
8	Sides of trench and hole excavations not exceeding 1,5m deep	m2	36	
	<u>Keeping excavations free of water</u>			
9	Keeping excavations free of water		Item	
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density</u>			
10	Under floors, steps, pavings, etc.	m3	8	
11	Backfilling to trenches, holes, etc.	m3	7	
	<u>Compaction of surfaces</u>			
12	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	25	
13	Compaction of ground surface to aprons etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	23	
Carried Forward				R
Section No. 4 Type - SM2 Bill No. 1 Foundation				

Brought Forward			R
	<u>Prescribed density tests on filling</u>		
14	"Modified AASHTO Density" test	No	4
<b><u>SOIL POISONING</u></b>			
All soil poisoning and insecticide to be applied under a <i>five year</i> guarantee by an approved firm of Specialists. Soil insecticides shall comply with <i>SABS Specification 1165</i> . Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - <i>SABS Code of Practice 0124</i>			
Casting of concrete floors to start within 24 hours after the application of soil poisoning			
<i>Pest control applicators must provide :</i>			
1. Proof of pesticides and insecticides (data sheets)			
2. Toxicants must be registered with the Departement of Agriculture			
2. Proof that they are qualified to perform the work			
3. Five year guarantee certificate			
<u>Soil poisoning and insecticide</u>			
15	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	25
16	To bottoms and sides of trenches, etc	m2	13
17	To bottom of concrete aprons	m2	20
<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
<u>UNREINFORCED CONCRETE, ETC</u>			
<u>25MPa/19mm concrete</u>			
18	Strip footings	m3	2
19	Aprons cast in panels	m3	2
20	Extra over concrete in surface beds for thickening 85mm deep the bottom including all excavation, backfilling etc.	m	10
Carried Forward			R
Section No. 4 Type - SM2 Bill No. 1 Foundation			

Brought Forward			R
21	Thickening down apron on edge 110mm deep x 200mm wide	m	7
<b><u>TEST CUBES</u></b>			
22	Allow for preparing a set of three test cubes each size 150x150x150mm, sending them to an approved testing laboratory for testing and paying all charges in connection therewith.	Sets	6
<b><u>CONCRETE SUNDRIES</u></b>			
<u>Finishing top surfaces of concrete smooth with a steel trowel</u>			
23	Aprons and pavings to falls	m2	23
24	Surface beds, slabs, etc.	m2	23
<b><u>ROUGH FORMWORK (DEGREE OF ACCURACY III)</u></b>			
<u>Rough formwork to sides</u>			
25	Edges of surface beds not exceeding 300mm high or wide	m	19
<b><u>REINFORCEMENT (PROVISIONAL)</u></b>			
<u>Mesh reinforcement</u>			
26	Ref 395 Mesh steel fabric reinforcement laid in concrete surface beds minimum 150mm along edges and ends (Measured net)	m2	23
<b><u>BRICKWORK IN FOUNDATIONS</u></b>			
<u>Brickwork of NFX bricks in class I mortar</u>			
27	One brick walls	m2	8
<b><u>BRICKWORK SUNDRIES</u></b>			
<u>Brickwork reinforcement</u>			
28	150mm Wide reinforcement built in horizontally	m	82
Carried Forward			R
Section No. 4 Type - SM2 Bill No. 1 Foundation			

Brought Forward			R
<b><u>FACE BRICKWORK</u></b>			
<u>Face Bricks (PC Amount R 5,500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>			
29	Extra over brickwork for face brickwork in foundation	m2	3
<b>Carried Forward to Summary of Section No. 4</b>			
Section No. 4			
Type - SM2			
Bill No. 1			
Foundation			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.3</u></b>			
<b><u>BILL NO. 2</u></b>			
<b><u>MASONRY</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Sizes in descriptions</u></b>			
Where sizes in descriptions are given in brick units, "one-brick" shall represent the length and "half-brick" the width of a brick			
<b><u>Face bricks</u></b>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<b><u>Pointing</u></b>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
<b><u>SUPERSTRUCTURE</u></b>			
<b><u>FACE BRICKWORK</u></b>			
<u>Face Bricks (PC Amount R 5 500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>			
1	Half brickwork for face brick walls pointed both sides	m2	9
2	One brickwork for face brick walls pointed both sides	m2	42
3	Extra over brickwork for face brickwork in beamfilling	m2	3
4	Fair raking and cutting	m	11
<b>Carried Forward</b>			R
Section No. 4 Type - SM2 Bill No. 2 Masonry			

Brought Forward			R
	<u>Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces</u>		
5	Extra over brickwork for brick-on-edge header course lintels pointed on two sides and 110mm soffit	m	5
6	Face brick-on-edge window sill 220mm wide pointed on two side and on top and set at a angle	m	4
7	Fair cutting and fitting around pipe not exceeding 100mm diameter.	m	4
<b><u>BRICKWORK SUNDRIES</u></b>			
	<u>Brickwork reinforcement</u>		
8	75mm Wide reinforcement built in horizontally	m	66
9	150mm Wide reinforcement built in horizontally	m	275
	<u>"Fabcon" prestressed fabricated lintels</u>		
10	110 x 75mm Lintels in lengths not exceeding 3m	m	9
	<u>Turning pieces</u>		
11	110mm Wide turning piece to lintels etc	m	2
12	220mm Wide turning piece to lintels etc	m	2
	<u>Galvanised hoop iron cramps, ties, etc</u>		
13	6mm Diameter roof tie 2m girth bent double with one end fixed to timber and other built into brickwork	No	12
	<u>Prestressed fabricated lintels</u>		
14	Pair of 110 x 75mm Lintels in lengths exceeding 3m and not exceeding 4,5m	m	9
	<u>Ventillation bricks</u>		
15	Set of two 22 x 155mm high terra cotta clay vermin proof air bricks including making good reveals and gauze	No	6
<b>Carried Forward to Summary of Section No. 4</b>			R
Section No. 4			
Type - SM2			
Bill No. 2			
Masonry			

Section No. 4  
Type - SM2  
Bill No. 3  
Waterproofing



Item No	Quantity	Rate	Amount
<b><u>SECTION NO.3</u></b>			
<b><u>BILL NO.4</u></b>			
<b><u>ROOF COVERINGS ETC</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>General</u>			
All roof coverings, etc, to be with a covering of Z275 galvanising			
The roof coverings shall be roll-formed in continuous lengths from certified steel complying with ASTM 446 Grade E (3t) and shall carry Agreement Certification			
All holes to be drilled and not punched			
Where described as with "Globalcoat" finish, all sheets, flashings, etc., shall be with "Globalcoat" silicone polyester paint for exterior use			
<u>Sizes</u>			
All items are measured net unless otherwise described			
<u>Flashings, trimming plates, etc</u>			
Prices to include for all cutting and waste and relevant fixing material, unless otherwise described			
All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable			
All items are unless otherwise described measured net			
<b><u>PROFILED METAL SHEETING AND ACCESSORIES</u></b>			
<b>Carried Forward</b>			R
Section No. 4 Type - SM2 Bill No. 4 Roof Covering, ETC			

Brought Forward			R
<b><u>0.6mm "Kliplok" roof sheeting in chromadek finish fixed to timber purlins (elsewhere)</u></b>			
<b><u>NOTE:</u></b>			
A written guarantee stating that the roofs including the flashings, are guaranteed to be waterproof for a period of 12 months must be submitted and handed over to the Principal Agent			
1	Roof covering with pitch not exceeding 25 degrees	m2	22
<u>Sundries</u>			
2	12" Thermal resistance sisalation laid on purlins	m2	22
<b>Carried Forward to Summary of Section No. 4</b>			R
Section No. 4			
Type - SM2			
Bill No. 4			
Roof Covering, ETC			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.3</u></b>			
	<b><u>BILL NO.5</u></b>			
	<b><u>CARPENTRY AND JOINERY</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Pre-fabricated metal connected timber roof trusses</u>			
	All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction			
	<u>Timber</u>			
	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			
	<u>Bolts</u>			
	Bolts shall be in accordance with BS 4190 or SANS 135			
	<u>Shear plates, tooth connectors and split rings</u>			
	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"			
	<u>Washers</u>			
	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			
	<b>Carried Forward</b>		R	
	Section No. 4 Type - SM2 Bill No. 5 Carpentry and Joinery			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness</p> <p>3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness</p> <p><u>Metal connector plates</u></p> <p>Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel</p> <p>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/m<sup>2</sup> commercial class hot dipped galvanising as per SANS 934 before stamping</p> <p>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</p> <p><u>Truss construction</u></p> <p>Trusses shall be constructed in jigs specially designed to ensure the correct profile, overhangs and cambers</p> <p>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</p> <p><u>Truss design</u></p> <p>All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")</p> <p>The truss centres shall be less than or equal to that as described in this bill for each respective truss</p> <p><u>Truss spacing</u></p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 4 Type - SM2 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Truss pitch</u></p> <p>The truss pitch shall be as described in this bill for each respective truss type</p> <p><u>Truss loading</u></p> <p>Trusses shall be designed for a live load of 0,50kN/m<sup>2</sup> and dead load as specified under the sub-heading "Specific load specifications for roof trusses"</p> <p><u>Shop drawings, design and erection guarantee certificates</u></p> <p>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</p> <p><u>Dimensions</u></p> <p>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</p> <p><u>Erection</u></p> <p>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</p> <p><u>Design system</u></p> <p>The design system as documented in this bill is based on the "MiTek" system and all references given in the descriptions are related to specific type of trusses based on this design system</p> <p>However, Contractors are to note that any design system of similar quality may be used subject to the prior written approval of the Principal Agent</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 4 Type - SM2 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Specific specifications for roof trusses</u></p> <p>Unless otherwise described, the following specifications will apply:</p> <ol style="list-style-type: none"> <li>1 All trusses to be with a 17° pitch at approximately 1000mm centres</li> <li>2 The dead load consists of 0,6mm "Corrugated Iron Roof Truss" heavy industrial galvanised finish, 50 x 76mm purlins at approximately 1150mm centres, 6mm fibre-cement nailed-up ceilings on 50 x 38mm brandering at 400mm centres and 50mm glass fibre insulation blanket laid on top of ceilings</li> </ol> <p><u>Rates</u></p> <p>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, fabrication of trusses, checking the completed truss for quality, loading up, transporting to the site of the works and off loading, storing under cover and protecting from the weather, hoisting up in position and erection of the roof truss structure, necessary supervision, submission of all shop drawings, design and erection guarantee certificates, etc. as specified</p> <p><u>Particle board</u></p> <p>Particle board shall comply with the following specifications:</p> <ol style="list-style-type: none"> <li>a) SANS 1300 Particle board: exterior and flooring type</li> <li>b) SANS 1301 Particle board: interior type</li> </ol> <p><u>Joinery</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 4 Type - SM2 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

Brought Forward			R
<p>Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes</p> <p><u>Fixing</u></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete</p> <p><u>Decorative laminate finish</u></p> <p>Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish</p> <p>Items described as with "Formica" on one side shall include a "CPL" treated brown backer on other side and "Vaposeal" sealer. All cut edges and exposed particle board to be sealed with one coat acrylic sealer and then with allche</p> <p><b><u>ROOFS, ETC.</u></b></p> <p><b><u>The following in plate nailed timber roof truss construction</u></b></p> <p><u>The following is applicable in respect of roof trusses</u></p> <p>The references given in the descriptions are to the respective types of trusses detailed on the architect's drawings annexed to these bills of quantities/accompanying these bills of quantities for tender purposes</p> <p>Prices for rafters and trusses to include all "Hurricane" clips, steel M-runners and "Permfix" plates, screws, nails, wires, sundry material, etc (bracing, wallplates, purlins and gangboarding are measured seperately)</p> <p><u>Sawn softwood</u></p>			
1	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6	m	33
2	76 x 38mm wall plates	m	19
3	50 x 76mm Purlins in lengths exceeding 3,9m and not exceeding 6,6m	m	42
Carried Forward			R
<p>Section No. 4</p> <p>Type - SM2</p> <p>Bill No. 5</p> <p>Carpentry and Joinery</p>			

Brought Forward			R
<u>Sundries</u>			
4	Two coats creosote on sawn timbers	m2	23
5	6mm Diameter galvanised wire tie 3000mm girth wrapped around rafter and purlin with ends tied together	No	10
6	Hurricane clips	No	18
<b><u>EAVES, VERGES, ETC</u></b>			
<u>"Everite FC77" pressed fibre-cement</u>			
7	15 x 230mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	18
<b><u>DOORS, ETC</u></b>			
<u>Wrought meranti doors hung to steel frames</u>			
8	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	2
9	44mm Purpose made Framed batten door 813 x 1882mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed (door raised by 120mm from bottom) (D2)	No	2
<b>Carried Forward to Summary of Section No. 4</b>			R
Section No. 4			
Type - SM2			
Bill No. 5			
Carpentry and Joinery			



Item No		Quantity	Rate	Amount
	<p><b><u>SECTION NO.3</u></b></p> <p><b><u>BILL NO. 6</u></b></p> <p><b><u>IRONMONGERY</u></b></p> <p><b><u>PREAMBLES</u></b></p> <p>For preambles see " Specification of materials and methods to be used - PW 371"</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Finishes to ironmongery</u></b></p> <p>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</p> <p><b><u>CATCHES, CABIN HOOKS, ETC</u></b></p> <p><u>Approved</u></p> <p>1 150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged</p> <p><b><u>LOCKS</u></b></p> <p><b><u>"EN-SUITE" LOCKS</u></b></p> <p>The following locks are to be suitable for master and grand master key operation</p>	No	1	
	<p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 4  Type - SM2  Bill No. 6  Ironmongery</p>		R	

Brought Forward			R
	<u>"Dorma"</u>		
2	Three lever mortice lockset	No	1
3	Indicator lockset	No	2
<b><u>SUNDRIES</u></b>			
	<u>"Dorma"</u>		
4	38mm Diameter rubber door stop plugged	No	3
<b><u>LETTERS, NAME PLATES, ETC</u></b>			
	<u>Union or similar approved</u>		
5	75 x 150mm Natural anodised aluminium plate with male or female symbol	No	2
<b><u>BATHROOM FITTINGS</u></b>			
	<u>Kimberley-Clarkor Simlilar</u>		
6	Kimberly Clark SQ2 code 405607B white lockable toilet roll holder	No	2
<b>Carried Forward to Summary of Section No. 4</b>			R
Section No. 4			
Type - SM2			
Bill No. 6			
Ironmongery			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.3</u></b>			
<b><u>BILL NO. 7</u></b>			
<b><u>METALWORK</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and method to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Descriptions</u></b>			
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			
Metalwork described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
<b><u>WELDED SCREENS, GATES, ETC</u></b>			
<u>Steel gates and frames</u>			
1	Purpose made square hallow section mild steel security gate, size 813 x 2032mm High	No	2
<b><u>PRESSED STEEL DOOR FRAMES</u></b>			
<u>1,2mm Double rebated frames suitable for half brick walls (with no paint finish)</u>			
2	Frame for door 813 x 2032mm high	No	2
<u>1,6mm Double rebated frames suitable for one brick walls</u>			
3	Frame for door 813 x 2032mm high	No	2
<b><u>STEEL WINDOWS, DOORS, ETC</u></b>			
<b>Carried Forward</b>			R
Section No. 4 Type - SM2 Bill No. 7 Metalwork			

Brought Forward			R	
	<u>Standard "Durowin" galvanised industrial type windows</u>			
4	Window type NE1, 533 x 654mm high including burglar bars	No	4	
5	Window type NE 7,1022 x 654mm high including burglar bars	No	2	
Carried Forward to Summary of Section No. 4			R	
Section No. 4				
Type - SM2				
Bill No. 7				
Metalwork				

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.3</u></b>			
	<b><u>BILL NO. 8</u></b>			
	<b><u>PLASTERING</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SCREEDS</u></b>			
	<u>Screeds steel trowelled on concrete</u>			
1	30mm thick on floors	m2	23	
	<b><u>INTERNAL PLASTER</u></b>			
	<u>Cement plaster on brickwork</u>			
2	On walls	m2	16	
3	On narrow widths	m2		
	<b><u>FLOOR AND WALLS SEALERS</u></b>			
	<u>Minimum two coats approved epoxy coat:</u>			
4	On screed	m2	23	
	<b>Carried Forward to Summary of Section No. 4</b>		R	
	Section No. 4 Type - SM2 Bill No. 8 Plastering			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 9</u></b>			
	<b><u>PLUMBING AND DRAINAGE</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>uPVC pipes and fittings</u></b>			
	Soil, waste and vent pipes and fittings shall be solvent weld jointed			
	<b><u>uPVC pressure pipes and fittings</u></b>			
	Pipes for water supply shall be of the class stated			
	Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings			
	Pipes of 50mm diameter and greater shall have sockets and spigots with push in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints			
	<b><u>Copper pipes</u></b>			
	Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground			
	<b>Carried Forward</b>		R	
	Section No. 4 Type - SM2 Bill No. 9 Plumbing and Drainage (Provisional)			

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>Fixing of pipes</u></b></p> <p>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</p> <p><b><u>Reducing fittings</u></b></p> <p>Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained</p> <p><b><u>Wire gratings</u></b></p> <p>Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings</p> <p><b><u>Flush pans</u></b></p> <p>Flush pans shall have straight or side outlets and "P" or "S" traps as necessary</p> <p><b><u>Stainless steelbasins, sinks, wash troughs, urinals, etc.</u></b></p> <p>Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable</p> <p><b><u>Waste unions</u></b></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings</p> <p><b><u>SANITARY FITTINGS</u></b></p> <p><u>Vaal or similar approved</u></p>	<p style="text-align: right;">R</p>
<p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 4 Type - SM2 Bill No. 9 Plumbing and Drainage (Provisional)</p>	<p style="text-align: right;">R</p>

Brought Forward			R
<b><u>White glazed fireclay or vitreous china coupling with SABS specification 497 in</u></b>			
1	"Vaal or similar approved duct LL LYNX Cistern complete with pan and rubber flushpipe connector. Installation method will be instructed by Engineer on site.	No	2
2	"Vaal or similar approved urinal fixed to wall including fittings and necessary pipework SABS specification.	No	2
3	"Vaal hibiscus" wash hand basin bolted to wall including all fittings and necessary pipework	No	2
<b><u>TAPS, VALVES, ETC</u></b>			
Manufactured by "Cobra Watertech" or other and approved			
4	32mm CP waste plastic plug and chain	No	2
5	15mm cobra 503-21B elbow action pillar cold water tap	No	2
<b><u>WASTE UNIONS ECT</u></b>			
<u>Manufactured by " cobra Watertech"</u>			
6	15mm "232/350CP" angle regulating valve with 350mm long service connection	No	4
7	15mm Stopcock	No	4
8	22mm Non-return valve	No	4
9	22mm 700RB high pressure float valve including ball	No	4
10	PBI.10RB 22mm vacuum breaker	No	4
<b><u>TRAPS ETC</u></b>			
11	32mm x 40mm bottle trap	No	2
Carried Forward			R
Section No. 4 Type - SM2 Bill No. 9 Plumbing and Drainage (Provisional)			



Brought Forward			R
	<u>Pre-cast concrete wash trough</u>		
12	Supply and install pre-cast concrete double wash-trough, complete with all necessary pipework including soakaway size 1000 x 1000 x 1000mm covered with "bidim"	No	1
	<b><u>FITTINGS</u></b>		
	"Walker Crosweller" or Similar		
13	15mm chrome plated push button taps to wash troughs with internal flow control, strainer, no hold feature and water saving shut-off	No	2
14	32mm CP waste plastic plug and chain	No	2
	"Kimberley - Clark" or Similar		
15	21 Litre Stainless-steel SHE-BIN plugged to wall with dimensions 505 x 280 x 180mm, fill volume size 12L, including hand operated lid.	No	2
	<b><u>DRAINAGE</u></b>		
	<u>Upvc Pipes</u>		
16	110mm Upvc diameter pipe laid in ground not exceeding 1m, but n.e 1.5m deep, including trenches.	m	40
17	50mm Upvc pipe	m	20
	<u>Extra over Upvc pipes for fittings</u>		
18	110mm Junction with inspection eyes	No	3
19	110mm bend	No	12
20	110mm pan connector	No	9
21	110mm Junction	No	12
22	110mm x 50mm Reducer	No	9
23	50mm bend	No	8
24	50mm access bend	No	12
	<b>Carried Forward</b>		R
	Section No. 4 Type - SM2 Bill No. 9 Plumbing and Drainage (Provisional)		

Brought Forward				R
	<u>PVC-U soil and vent pipes</u>			
25	110mm vent pipe	No	9	
26	50mm vent pipe	No	9	
27	15mm Service pipe 350mm girth	No	9	
	<b><u>WATER SUPPLY</u></b>			
	<u>Class O copper pipe</u>			
28	15mm Pipes	m	20	
29	22mm Pipes	m	20	
	<u>Extra over class O copper fittings</u>			
30	15mm fittings	No	30	
31	22mm fittings	No	30	
32	Copper overflow and service pipes	No	30	
	<u>Galvanised pipes and fittings</u>			
33	15mm Pipes	m	30	
34	22mm Pipes	m	30	
	<u>Extra over Galvanised pipes for fittings</u>			
35	15mm Fitting	No	30	
36	22mm Fitting	No	30	
37	15mm Service pipe 350mm girth	No	12	
	<u>32mm Diameter Class 10 HDPE pipe</u>			
38	32mm HDPE Class 10 HDPE Pipes, including excavation in earth, from the existing connection point to the washing troughs	m	50	
	<u>Testing</u>			
39	Testing water pipe system		Item	
	<b>Carried Forward to Summary of Section No. 4</b>			R
	Section No. 4			
	Type - SM2			
	Bill No. 9			
	Plumbing and Drainage (Provisional)			

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Bill No	SECTION SUMMARY - Type - SM2	Page No	Amount
1	Foundation	61	
2	Masonry	63	
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4	Roof Covering, ETC	66	
5	Carpentry and Joinery	72	
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7	Metalwork	76	
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9	Plumbing and Drainage (Provisional)	82	
10	Glazing	83	
11	Paintwork	85	
Carried to Final Summary			R
Section No. 4 Type - SM2			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.1</u></b>			
	<b><u>FOUNDATIONS (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Nature of ground</u></b>			
	<b><i>Classification of excavated material</i></b>			
	A soils investigation has been carried out on site by the Principal Agent and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured			
	<b><u>Filling (General)</u></b>			
	It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used			
	All filling obtained from a commercial source should comply to minimum G6 standard			
	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"			
	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			
	<b>Carried Forward</b>		R	
	Section No. 5 Type - GRD4 Bill No. 1 Foundation			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>Backfilling described as:</p> <ul style="list-style-type: none"> <li>- <b>"filling in pipe trenches, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> <li>- <b>"filling behind retaining walls, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> </ul> <p><b><u>Filling in sub-layers, under floors, etc</u></b></p> <p>All filling in layers under surface beds, in sub-layers, to form earth mattresses, etc. shall be done with materials specified and according to methods prescribed by the SABS 1200ME Sub-base Specification</p> <p>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</p> <p>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 Bureau of Standards and be kept on site at all times</p> <p><b><u>CBR and indicator tests</u></b></p> <p>Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed</p> <p>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</p> <p>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</p> <p><b><u>Density tests</u></b></p> <p>It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 5 Type - GRD4 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>



<p style="text-align: center;"><b>Brought Forward</b></p> <ul style="list-style-type: none"> <li>- <b>Filling under surface beds, aprons, channels, etc:</b> 1 Test per 125m<sup>2</sup> plan area per each 150mm thick layer</li> <li>- <b>Filling behind retaining walls:</b> 1 Test per each 150mm thick layer per each 15m length of retaining wall</li> </ul> <p>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</p> <p>A separete item has been measured for density tests in this Bill</p> <p>No additional claims in this regard will afterwards be entertained</p> <p><b><u>Carting away of excessive and/or unsuitable excavated material</u></b></p> <p>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</p> <p>The location of the intended dumping site will be subjected to the prior written approval of the Principal Agent</p> <p>The Contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used for 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</p> <p>Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 5 Type - GRD4 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>

<b>Brought Forward</b>			R
<b><u>Measurement and payment</u></b>			
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			
<b><u>Mixing of concrete</u></b>			
No hand mixing of concrete will be allowed on site			
<b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b>			
The Contractor is referred to the next Bill No 2, Concrete, Formwork and Reinforcement, and Bill No 3, Masonry, 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			
<b><u>Demolitions</u></b>			
<u>Note:</u>			
Unless otherwise stated, all usable material from the demolitions should be kept safely and handed over to the school governing body or the school principal who shall sign for all material received.			
The builder should allow for the removal of all debris from site at all times and keeping the site clean at all times.			
<b><u>SITE CLEARANCE</u></b>			
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2	113
2	Stripping average 100mm thick layer of top soil and stockpiling on site	m2	63
<b><u>EXCAVATION, FILLING, ETC</u></b>			
<b>Carried Forward</b>			R
Section No. 5 Type - GRD4 Bill No. 1 Foundation			

Brought Forward				R
	<u>Excavation in earth or compacted platforms not exceeding 2m deep</u>			
3	Trenches	m3	11	
4	For aprons thickening	m3	4	
	<u>Extra over trench and hole excavations in earth for excavation:</u>			
5	Soft rock	m3	1	
6	Hard rock	m3	2	
	<u>Extra over all excavations for carting away</u>			
7	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	38	
	<u>Risk of collapse of excavations</u>			
8	Sides of trench and hole excavations not exceeding 1,5m deep	m2	74	
	<u>Keeping excavations free of water</u>			
9	Keeping excavations free of water		Item	
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density</u>			
10	Under floors, steps, pavings, etc.	m3		
11	Backfilling to trenches, holes, etc.	m3	10	
	<u>Compaction of surfaces</u>			
12	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	34	
13	Compaction of ground surface to aprons etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	29	
Carried Forward				R
Section No. 5 Type - GRD4 Bill No. 1 Foundation				

Brought Forward			R
	<u>Prescribed density tests on filling</u>		
14	"Modified AASHTO Density" test	No	5
<b><u>SOIL POISONING</u></b>			
All soil poisoning and insecticide to be applied under a <i>five year</i> guarantee by an approved firm of Specialists. Soil insecticides shall comply with <i>SABS Specification 1165</i> . Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - <i>SABS Code of Practice 0124</i>			
Casting of concrete floors to start within 24 hours after the application of soil poisoning			
<i>Pest control applicators must provide :</i>			
1. Proof of pesticides and insecticides (data sheets)			
2. Toxicants must be registered with the Departement of Agriculture			
2. Proof that they are qualified to perform the work			
3. Five year guarantee certificate			
<u>Soil poisoning and insecticide</u>			
15	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	34
16	To bottoms and sides of trenches, etc	m2	121
17	To bottom of concrete aprons	m2	33
<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
<u>UNREINFORCED CONCRETE, ETC</u>			
<u>25MPa/19mm concrete</u>			
18	Strip footings	m3	5
19	Ditto, but surface bed in pit	m3	2
20	Aprons cast in panels	m3	2
Carried Forward			R
Section No. 5 Type - GRD4 Bill No. 1 Foundation			

Brought Forward				R
21	Extra over concrete in surface beds for thickening 85mm deep the bottom including all excavation, backfilling etc.	m	25	
22	Thickening down apron on edge 110mm deep x 200mm wide	m	33	
<u>REINFORCED CONCRETE, ETC</u>				
<u>25MPa/19mm concrete</u>				
23	Slabs	m3	3	
<u>TEST CUBES</u>				
24	Allow for preparing a set of three test cubes each size 150x150x150mm, sending them to an approved testing laboratory for testing and paying all charges in connection therewith.	Sets	3	
<u>CONCRETE SUNDRIES</u>				
<u>Finishing top surfaces of concrete smooth with a steel trowel</u>				
25	Aprons and pavings to falls	m2	33	
26	Surface beds, slabs, etc.	m2	34	
<u>ROUGH FORMWORK (DEGREE OF ACCURACY III)</u>				
<u>Rough formwork to sides</u>				
27	Edges of surface beds not exceeding 300mm high or wide	m	33	
<u>REINFORCEMENT (PROVISIONAL)</u>				
<u>Mesh reinforcement</u>				
28	Ref 395 Mesh steel fabric reinforcement laid in concrete surface beds minimum 150mm along edges and ends (Measured net)	m2	34	
<u>BRICKWORK IN FOUNDATIONS</u>				
Carried Forward				R
Section No. 5 Type - GRD4 Bill No. 1 Foundation				

Brought Forward			R
<u>Brickwork of NFX bricks in class I mortar</u>			
29	One brick walls	m2	13
30	One brick walls in pit	m2	26
31	Half brick corbelling in pit	m2	22
<b><u>BRICKWORK SUNDRIES</u></b>			
<u>Brickwork reinforcement</u>			
32	150mm Wide reinforcement built in horizontally	m	81
<b><u>FACE BRICKWORK</u></b>			
<u>Face Bricks (PC Amount R 5 500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>			
33	Extra over brickwork for face brickwork in foundation	m2	27
<b>Carried Forward to Summary of Section No. 5</b>			R
Section No. 5			
Type - GRD4			
Bill No. 1			
Foundation			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO. 2</u></b>			
<b><u>MASONRY</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Sizes in descriptions</u></b>			
Where sizes in descriptions are given in brick units, "one-brick" shall represent the length and "half-brick" the width of a brick			
<b><u>Face bricks</u></b>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<b><u>Pointing</u></b>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
<b><u>SUPERSTRUCTURE</u></b>			
<b><u>FACE BRICKWORK</u></b>			
<u>Face Bricks (PC Amount R 5 500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>			
1	Half brickwork for face brick walls pointed both sides	m2	46
2	One brickwork for face brick walls pointed both sides	m2	141
3	Extra over brickwork for face brickwork in beamfilling	m2	13
4	Fair raking and cutting	m	66
<b>Carried Forward</b>			R
Section No. 5 Type - GRD4 Bill No. 2 Masonry			

Brought Forward			R
	<u>Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces</u>		
5	Extra over brickwork for brick-on-edge header course lintels pointed on two sides and 110mm soffit	m	11
6	Face brick-on-edge window sill 220mm wide pointed on two side and on top and set at a angle	m	9
7	Fair cutting and fitting around pipe not exceeding 100mm diameter.	m	7
<b><u>BRICKWORK SUNDRIES</u></b>			
	<u>Brickwork reinforcement</u>		
8	75mm Wide reinforcement built in horizontally	m	131
9	150mm Wide reinforcement built in horizontally	m	538
	<u>"Fabcon" prestressed fabricated lintels</u>		
10	110 x 75mm Lintels in lengths not exceeding 3m	m	1
	<u>Turning pieces</u>		
11	110mm Wide turning piece to lintels etc	m	
12	220mm Wide turning piece to lintels etc	m	11
	<u>Galvanised hoop iron cramps, ties, etc</u>		
13	6mm Diameter roof tie 2m girth bent double with one end fixed to timber and other built into brickwork	No	17
	<u>Prestressed fabricated lintels</u>		
14	Pair of 110 x 75mm Lintels in lengths exceeding 3m and not exceeding 4,5m	m	7
	<u>Ventillation bricks</u>		
15	Set of two 22 x 155mm high terra cotta clay vermin proof air bricks including making good reveals and gauze	No	7
<b>Carried Forward to Summary of Section No. 5</b>			R
Section No. 5			
Type - GRD4			
Bill No. 2			
Masonry			



Section No. 5  
Type - GRD4  
Bill No. 3  
Waterproofing

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO.4</u></b>			
<b><u>ROOF COVERINGS ETC</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>General</u>			
All roof coverings, etc, to be with a covering of Z275 galvanising			
The roof coverings shall be roll-formed in continuous lengths from certified steel complying with ASTM 446 Grade E (3t) and shall carry Agreement Certification			
All holes to be drilled and not punched			
Where described as with "Globalcoat" finish, all sheets, flashings, etc., shall be with "Globalcoat" silicone polyester paint for exterior use			
<u>Sizes</u>			
All items are measured net unless otherwise described			
<u>Flashings, trimming plates, etc</u>			
Prices to include for all cutting and waste and relevant fixing material, unless otherwise described			
All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable			
All items are unless otherwise described measured net			
<b><u>PROFILED METAL SHEETING AND ACCESSORIES</u></b>			
<b>Carried Forward</b>			R
Section No. 5 Type - GRD4 Bill No. 4 Roof Covering, ETC			

Brought Forward			R
<b><u>0.6mm "Kliplok" roof sheeting in chromadek finish fixed to timber purlins (elsewhere)</u></b>			
<b><u>NOTE:</u></b>			
A written guarantee stating that the roofs including the flashings, are guaranteed to be waterproof for a period of 12 months must be submitted and handed over to the Principal Agent			
1	Roof covering with pitch not exceeding 25 degrees	m2	33
<u>Sundries</u>			
2	12" Thermal resistance sisalation laid on purlins	m2	29
<b>Carried Forward to Summary of Section No. 5</b>			R
Section No. 5			
Type - GRD4			
Bill No. 4			
Roof Covering, ETC			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.5</u></b>			
	<b><u>CARPENTRY AND JOINERY</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Pre-fabricated metal connected timber roof trusses</u>			
	All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction			
	<u>Timber</u>			
	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			
	<u>Bolts</u>			
	Bolts shall be in accordance with BS 4190 or SANS 135			
	<u>Shear plates, tooth connectors and split rings</u>			
	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"			
	<u>Washers</u>			
	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			
	<b>Carried Forward</b>		R	
	Section No. 5 Type - GRD4 Bill No. 5 Carpentry and Joinery			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness</p> <p>3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness</p> <p><u>Metal connector plates</u></p> <p>Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel</p> <p>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/m<sup>2</sup> commercial class hot dipped galvanising as per SANS 934 before stamping</p> <p>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</p> <p><u>Truss construction</u></p> <p>Trusses shall be constructed in jigs specially designed to ensure the correct profile, overhangs and cambers</p> <p>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</p> <p><u>Truss design</u></p> <p>All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")</p> <p>The truss centres shall be less than or equal to that as described in this bill for each respective truss</p> <p><u>Truss spacing</u></p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 5 Type - GRD4 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Truss pitch</u></p> <p>The truss pitch shall be as described in this bill for each respective truss type</p> <p><u>Truss loading</u></p> <p>Trusses shall be designed for a live load of 0,50kN/m<sup>2</sup> and dead load as specified under the sub-heading "Specific load specifications for roof trusses"</p> <p><u>Shop drawings, design and erection guarantee certificates</u></p> <p>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</p> <p><u>Dimensions</u></p> <p>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</p> <p><u>Erection</u></p> <p>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</p> <p><u>Design system</u></p> <p>The design system as documented in this bill is based on the "MiTek" system and all references given in the descriptions are related to specific type of trusses based on this design system</p> <p>However, Contractors are to note that any design system of similar quality may be used subject to the prior written approval of the Principal Agent</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 5 Type - GRD4 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Specific specifications for roof trusses</u></p> <p>Unless otherwise described, the following specifications will apply:</p> <ol style="list-style-type: none"> <li>1 All trusses to be with a 17° pitch at approximately 1000mm centres</li> <li>2 The dead load consists of 0,6mm "Corrugated Iron Roof Truss" heavy industrial galvanised finish, 50 x 76mm purlins at approximately 1150mm centres, 6mm fibre-cement nailed-up ceilings on 50 x 38mm brandering at 400mm centres and 50mm glass fibre insulation blanket laid on top of ceilings</li> </ol> <p><u>Rates</u></p> <p>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, fabrication of trusses, checking the completed truss for quality, loading up, transporting to the site of the works and off loading, storing under cover and protecting from the weather, hoisting up in position and erection of the roof truss structure, necessary supervision, submission of all shop drawings, design and erection guarantee certificates, etc. as specified</p> <p><u>Particle board</u></p> <p>Particle board shall comply with the following specifications:</p> <ol style="list-style-type: none"> <li>a) SANS 1300 Particle board: exterior and flooring type</li> <li>b) SANS 1301 Particle board: interior type</li> </ol> <p><u>Joinery</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 5 Type - GRD4 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

Brought Forward			R
<p>Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes</p> <p><u>Fixing</u></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete</p> <p><u>Decorative laminate finish</u></p> <p>Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish</p> <p>Items described as with "Formica" on one side shall include a "CPL" treated brown backer on other side and "Vaposeal" sealer. All cut edges and exposed particle board to be sealed with one coat acrylic sealer and then with allche</p> <p><b><u>ROOFS, ETC.</u></b></p> <p><b><u>The following in plate nailed timber roof truss construction</u></b></p> <p><u>The following is applicable in respect of roof trusses</u></p> <p>The references given in the descriptions are to the respective types of trusses detailed on the architect's drawings annexed to these bills of quantities/accompanying these bills of quantities for tender purposes</p> <p>Prices for rafters and trusses to include all "Hurricane" clips, steel M-runners and "Permfix" plates, screws, nails, wires, sundry material, etc (bracing, wallplates, purlins and gangboarding are measured seperately)</p> <p><u>Sawn softwood</u></p>			
1	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6	m	56
2	76 x 38mm wall plates	m	11
3	50 x 76mm Purlins in lengths exceeding 3,9m and not exceeding 6,6m	m	40
Carried Forward			R
<p>Section No. 5 Type - GRD4 Bill No. 5 Carpentry and Joinery</p>			



Brought Forward			R
<u>Sundries</u>			
4	Two coats creosote on sawn timbers	m2	10
5	6mm Diameter galvanised wire tie 3000mm girth wrapped around rafter and purlin with ends tied together	No	38
6	Hurricane clips	No	38
<b><u>EAVES, VERGES, ETC</u></b>			
<u>"Everite FC77" pressed fibre-cement</u>			
7	15 x 230mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	27
<b><u>DOORS, ETC</u></b>			
<u>Wrought meranti doors hung to steel frames</u>			
8	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	1
9	44mm Purpose made Framed batten door 915 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed (door raised by 120mm from bottom) (D2)	No	1
10	Custom Made Door, 44mm Framed batten door 813 x 1200mm high of Braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard, Including wooded frame fixed to the wall. (Custom Made Door for Grade R')	No	4
<b>Carried Forward to Summary of Section No. 5</b>			R
Section No. 5			
Type - GRD4			
Bill No. 5			
Carpentry and Joinery			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO. 6</u></b>			
<b><u>IRONMONGERY</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Finishes to ironmongery</u></b>			
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			
<b><u>CATCHES, CABIN HOOKS, ETC</u></b>			
<u>Approved</u>			
1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	2
<b><u>LOCKS</u></b>			
<b><u>"EN-SUITE" LOCKS</u></b>			
The following locks are to be suitable for master and grand master key operation			
<b>Carried Forward</b>			R
Section No. 5 Type - GRD4 Bill No. 6 Ironmongery			

Brought Forward			R
	<u>"Dorma"</u>		
2	Three lever mortice lockset	No	2
	<b><u>SUNDRIES</u></b>		
	<u>"Dorma"</u>		
3	38mm Diameter rubber door stop plugged	No	2
	<b><u>LETTERS, NAME PLATES, ETC</u></b>		
	<u>Union or similar approved</u>		
4	75 x 150mm Natural anodised aluminium plate with male, female or paraplegic symbol	No	3
	<b><u>BATHROOM FITTINGS</u></b>		
	<u>Kimberley-Clarkor Simlilar</u>		
5	Kimberly Clark SQ2 code 405607B white lockable toilet roll holder	No	5
	<u>Vaal Paragon or equal approved</u>		
6	32mm Type 8 side grab rail 900mm long plugged	No	1
7	32mm Type 8 back grab rail 800mm long plugged	No	1
<b>Carried Forward to Summary of Section No. 5</b>			R
Section No. 5			
Type - GRD4			
Bill No. 6			
Ironmongery			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 7</u></b>			
	<b><u>METALWORK</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and method to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Descriptions</u></b>			
	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			
	Metalwork described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
	<b><u>WELDED SCREENS, GATES, ETC</u></b>			
	<u>Steel gates and frames</u>			
1	Purpose made square hallow section mild steel security gate, size 813 x 2032mm High	No	2	
	<b><u>PRESSED STEEL DOOR FRAMES</u></b>			
	<u>1,2mm Double rebated frames suitable for half brick walls (with no paint finish)</u>			
2	Frame for door 813 x 2032mm high	No	2	
	<u>1,6mm Double rebated frames suitable for one brick walls</u>			
3	Frame for door 813 x 2032mm high	No	1	
4	Frame for door 915 x 2032mm high	No	1	
	<b>Carried Forward</b>		R	
	Section No. 5 Type - GRD4 Bill No. 7 Metalwork			

Section No. 5  
Type - GRD4  
Bill No. 7  
Metalwork

Item No		Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>				
<b><u>BILL NO. 8</u></b>				
<b><u>PLASTERING</u></b>				
<b><u>PREAMBLES</u></b>				
For preambles see " Specification of materials and methods to be used - PW 371"				
<b><u>SCREEDS</u></b>				
<u>Screeds steel trowelled on concrete</u>				
1	30mm thick on floors	m2	25	
<b><u>INTERNAL PLASTER</u></b>				
<u>Cement plaster on brickwork</u>				
2	On walls	m2	54	
3	On narrow widths	m2		
<b><u>FLOOR AND WALLS SEALERS</u></b>				
<u>Minimum two coats approved epoxy coat:</u>				
4	On screed	m2	38	
Carried Forward to Summary of Section No. 5				R
Section No. 5 Type - GRD4 Bill No. 8 Plastering				

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO. 9</u></b>			
<b><u>PLUMBING AND DRAINAGE</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>uPVC pipes and fittings</u></b>			
Soil, waste and vent pipes and fittings shall be solvent weld jointed			
<b><u>uPVC pressure pipes and fittings</u></b>			
Pipes for water supply shall be of the class stated			
Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings			
Pipes of 50mm diameter and greater shall have sockets and spigots with push in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints			
<b><u>Copper pipes</u></b>			
Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground			
<b>Carried Forward</b>			R
Section No. 5 Type - GRD4 Bill No. 9 Plumbing and Drainage (Provisional)			

	<b>Brought Forward</b>			R
	<p><b><u>Fixing of pipes</u></b></p> <p>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</p> <p><b><u>Reducing fittings</u></b></p> <p>Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained</p> <p><b><u>Wire gratings</u></b></p> <p>Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings</p> <p><b><u>Flush pans</u></b></p> <p>Flush pans shall have straight or side outlets and "P" or "S" traps as necessary</p> <p><b><u>Stainless steelbasins, sinks, wash troughs, urinals, etc.</u></b></p> <p>Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable</p> <p><b><u>Waste unions</u></b></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings</p> <p><b><u>SANITARY FITTINGS</u></b></p> <p><b><u>Vaal or similar approved</u></b></p>			
1	<p>"Vaal Potteries" Protea Din low level junior wash down suite (Code 750611) with Duranite 9 litre White Shire Manx cistern complete with all fittings, including flush pipe and concealed bracket fittings, heavy duty double flap solid white plastic seat, etc.</p>	No	4	
	<b>Carried Forward</b>			R
	<p>Section No. 5 Type - GRD4 Bill No. 9 Plumbing and Drainage (Provisional)</p>			



Brought Forward			R
2	510 x 405mm Wall mounted junior basin with one taphole, including integrated overflow attachment (code 8784ZO) and chainstay hole including floor mounted pedestal	No	4
<b><u>TAPS, VALVES, ETC</u></b>			
Manufactured by "Cobra Watertech" or other and approved			
3	32mm CP waste plastic plug and chain	No	4
4	15mm cobra 503-21B elbow action pillar cold water tap	No	4
<b><u>WASTE UNIONS ECT</u></b>			
<u>Manufactured by " cobra Watertech"</u>			
5	15mm "232/350CP" angle regulating valve with 350mm long service connection	No	4
6	15mm Stopcock	No	4
7	22mm Non-return valve	No	4
8	22mm 700RB high pressure float valve including ball	No	4
9	PBI.10RB 22mm vacuum breaker	No	4
<b><u>TRAPS ETC</u></b>			
10	32mm x 40mm bottle trap	No	3
<u>Pre-cast concrete wash trough</u>			
11	Supply and install pre-cast concrete double wash-trough, complete with all necessary pipework including soakaway size 1000 x 1000 x 1000mm covered with "bidim"	No	2
<b><u>FITTINGS</u></b>			
"Walker Crosweller" or Similar			
12	15mm chrome plated push button taps to wash troughs with internal flow control, strainer, no hold feature and water saving shut-off	No	4
Carried Forward			R
Section No. 5 Type - GRD4 Bill No. 9 Plumbing and Drainage (Provisional)			

Brought Forward			R
13	32mm CP waste plastic plug and chain	No	3
<b><u>DRAINAGE</u></b>			
<u>Upvc Pipes</u>			
14	110mm Upvc diameter pipe laid in ground not exceeding 1mm, but n.e 1.5m deep,including trenches.	m	40
15	50mm Upvc pipe	m	20
<u>Extra over Upvc pipes for fittings</u>			
16	110mm Junction with inspection eyes	No	3
17	110mm bend	No	12
18	110mm pan connector	No	9
19	110mm Junction	No	12
20	110mm x 50mm Reducer	No	9
21	50mm bend	No	8
22	50mm access bend	No	12
<u>PVC-U soil and vent pipes</u>			
23	110mm vent pipe	No	9
24	50mm vent pipe	No	9
25	15mm Service pipe 350mm girth	No	9
<b><u>WATER SUPPLY</u></b>			
<u>Class O copper pipe</u>			
26	15mm Pipes	m	20
27	22mm Pipes	m	20
<u>Extra over class O copper fittings</u>			
28	15mm fittings	No	30
Carried Forward			R
Section No. 5 Type - GRD4 Bill No. 9 Plumbing and Drainage (Provisional)			

Brought Forward			R
29	22mm fittings	No	30
30	Copper overflow and service pipes	No	30
	<u>Galvanised pipes and fittings</u>		
31	15mm Pipes	m	30
32	22mm Pipes	m	30
	<u>Extra over Galvanised pipes for fittings</u>		
33	15mm Fitting	No	30
34	22mm Fitting	No	30
35	15mm Service pipe 350mm girth	No	12
	<u>32mm Diameter Class 10 HDPE pipe</u>		
36	32mm HDPE Class 10 HDPE Pipes, including excavation in earth, from the existing connection point to the washing troughs	m	50
	<u>Testing</u>		
37	Testing water pipe system		Item
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Type - GRD4			
Bill No. 9			
Plumbing and Drainage (Provisional)			

[illegible]

Section No. 5  
Type - GRD4  
Bill No. 11  
Paintwork

SECTION SUMMARY - Type - GRD4			Page No	Amount
1	Foundation	94		
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5	Carpentry and Joinery	105		
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9	Plumbing and Drainage (Provisional)	115		
10	Glazing	116		
11	Paintwork	117		
Carried to Final Summary			R	
Section No. 5 Type - GRD4				

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.1</u></b>			
	<b><u>FOUNDATIONS (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Nature of ground</u></b>			
	<b><i>Classification of excavated material</i></b>			
	A soils investigation has been carried out on site by the Principal Agent and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured			
	<b><u>Filling (General)</u></b>			
	It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used			
	All filling obtained from a commercial source should comply to minimum G6 standard			
	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"			
	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			
	<b>Carried Forward</b>		R	
	Section No. 6 Type - FD3 Bill No. 1 Foundation			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>Backfilling described as:</p> <ul style="list-style-type: none"> <li>- <b>"filling in pipe trenches, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> <li>- <b>"filling behind retaining walls, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> </ul> <p><b><u>Filling in sub-layers, under floors, etc</u></b></p> <p>All filling in layers under surface beds, in sub-layers, to form earth mattresses, etc. shall be done with materials specified and according to methods prescribed by the SABS 1200ME Sub-base Specification</p> <p>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</p> <p>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 Bureau of Standards and be kept on site at all times</p> <p><b><u>CBR and indicator tests</u></b></p> <p>Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed</p> <p>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</p> <p>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</p> <p><b><u>Density tests</u></b></p> <p>It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 6 Type - FD3 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>



- **Filling under surface beds, aprons, channels, etc:**  
1 Test per 125m<sup>2</sup> plan area per each 150mm thick layer
- **Filling behind retaining walls:**  
1 Test per each 150mm thick layer per each 15m length of retaining wall

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

R

Section No. 6  
Type - FD3  
Bill No. 1  
Foundation

Brought Forward		R
<b><u>Measurement and payment</u></b>		
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		
<b><u>Mixing of concrete</u></b>		
No hand mixing of concrete will be allowed on site		
<b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b>		
The Contractor is referred to the next Bill No 2, Concrete, Formwork and Reinforcement, and Bill No 3, Masonry, 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		
<b><u>Demolitions</u></b>		
<u>Note:</u>		
Unless otherwise stated, all usable material from the demolitions should be kept safely and handed over to the school governing body or the school principal who shall sign for all material received.		
The builder should allow for the removal of all debris from site at all times and keeping the site clean at all times.		
<b><u>SITE CLEARANCE</u></b>		
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2 67
2	Stripping average 100mm thick layer of top soil and stockpiling on site	m2 67
<b><u>EXCAVATION, FILLING, ETC</u></b>		
Carried Forward		R
Section No. 6 Type - FD3 Bill No. 1 Foundation		

Brought Forward				R
	<u>Excavation in earth or compacted platforms not exceeding 2m deep</u>			
3	Trenches	m3	15	
4	For aprons thickening	m3	2	
	<u>Extra over trench and hole excavations in earth for excavation:</u>			
5	Soft rock	m3	4	
6	Hard rock	m3	2	
	<u>Extra over all excavations for carting away</u>			
7	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	25	
	<u>Risk of collapse of excavations</u>			
8	Sides of trench and hole excavations not exceeding 1,5m deep	m2	47	
	<u>Keeping excavations free of water</u>			
9	Keeping excavations free of water		Item	
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density</u>			
10	Under floors, steps, pavings, etc.	m3	8	
11	Backfilling to trenches, holes, etc.	m3	4	
	<u>Compaction of surfaces</u>			
12	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	23	
13	Compaction of ground surface to pits etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	25	
Carried Forward				R
Section No. 6 Type - FD3 Bill No. 1 Foundation				

Brought Forward			R
14	Compaction of ground surface to aprons etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	29
	<u>Prescribed density tests on filling</u>		
15	"Modified AASHTO Density" test	No	4
<b><u>SOIL POISONING</u></b>			
All soil poisoning and insecticide to be applied under a <i>five year</i> guarantee by an approved firm of Specialists. Soil insecticides shall comply with <i>SABS Specification 1165</i> . Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - <i>SABS Code of Practice 0124</i>			
Casting of concrete floors to start within 24 hours after the application of soil poisoning			
<i>Pest control applicators must provide :</i>			
1. Proof of pesticides and insecticides (data sheets)			
2. Toxicants must be registered with the Departement of Agriculture			
2. Proof that they are qualified to perform the work			
3. Five year guarantee certificate			
<u>Soil poisoning and insecticide</u>			
16	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	23
17	To bottoms and sides of trenches, etc	m2	23
18	To bottom of concrete aprons	m2	19
<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
<u>UNREINFORCED CONCRETE, ETC</u>			
<u>25MPa/19mm concrete</u>			
19	Strip footings	m3	5
Carried Forward			R
Section No. 6 Type - FD3 Bill No. 1 Foundation			

Brought Forward				R
20	Aprons cast in panels	m3	3	
21	Extra over concrete in surface beds for thickening 85mm deep the bottom including all excavation, backfilling etc.	m	33	
22	Thickening down apron on edge 110mm deep x 200mm wide	m	11	
<b><u>REINFORCED CONCRETE, ETC</u></b>				
<u>25MPa/19mm concrete</u>				
23	Slabs	m3	2	
<b><u>TEST CUBES</u></b>				
24	Allow for preparing a set of three test cubes each size 150x150x150mm, sending them to an approved testing laboratory for testing and paying all charges in connection therewith.	Sets	6	
<b><u>CONCRETE SUNDRIES</u></b>				
<u>Finishing top surfaces of concrete smooth with a steel trowel</u>				
25	Aprons and pavings to falls	m2	23	
26	Surface beds, slabs, etc.	m2	25	
<b><u>ROUGH FORMWORK (DEGREE OF ACCURACY III)</u></b>				
<u>Rough formwork to sides</u>				
27	Edges of surface beds not exceeding 300mm high or wide	m	66	
<b><u>REINFORCEMENT (PROVISIONAL)</u></b>				
<u>Mesh reinforcement</u>				
28	Ref 395 Mesh steel fabric reinforcement laid in concrete surface beds minimum 150mm along edges and ends (Measured net)	m2	23	
<b><u>BRICKWORK IN FOUNDATIONS</u></b>				
Carried Forward				R
Section No. 6 Type - FD3 Bill No. 1 Foundation				

Brought Forward			R
	<u>Brickwork of NFX bricks in class I mortar</u>		
29	One brick walls	m2	9
	<b><u>BRICKWORK SUNDRIES</u></b>		
	<u>Brickwork reinforcement</u>		
30	150mm Wide reinforcement built in horizontally	m	30
	<b><u>FACE BRICKWORK</u></b>		
	<u>Face Bricks (PC Amount R 5 500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>		
31	Extra over brickwork for face brickwork in foundation	m2	4
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Type - FD3			
Bill No. 1			
Foundation			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO. 2</u></b>			
<b><u>MASONRY</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Sizes in descriptions</u></b>			
Where sizes in descriptions are given in brick units, "one-brick" shall represent the length and "half-brick" the width of a brick			
<b><u>Face bricks</u></b>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<b><u>Pointing</u></b>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
<b><u>SUPERSTRUCTURE</u></b>			
<b><u>FACE BRICKWORK</u></b>			
<u>Face Bricks (PC Amount R 5,500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>			
1	Half brickwork for face brick walls pointed both sides	m2	21
2	One brickwork for face brick walls pointed both sides	m2	70
3	Extra over brickwork for face brickwork in beamfilling	m2	4
4	Fair raking and cutting	m	11
<b>Carried Forward</b>			R
Section No. 6 Type - FD3 Bill No. 2 Masonry			

Brought Forward			R
	<u>Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces</u>		
5	Extra over brickwork for brick-on-edge header course lintels pointed on two sides and 110mm soffit	m	8
6	Face brick-on-edge window sill 220mm wide pointed on two side and on top and set at a angle	m	6
7	Fair cutting and fitting around pipe not exceeding 100mm diameter.	m	6
<b><u>BRICKWORK SUNDRIES</u></b>			
	<u>Brickwork reinforcement</u>		
8	75mm Wide reinforcement built in horizontally	m	125
9	150mm Wide reinforcement built in horizontally	m	362
	<u>Turning pieces</u>		
10	110mm Wide turning piece to lintels etc	m	4
11	220mm Wide turning piece to lintels etc	m	7
	<u>Galvanised hoop iron cramps, ties, etc</u>		
12	6mm Diameter roof tie 2m girth bent double with one end fixed to timber and other built into brickwork	No	11
	<u>Prestressed fabricated lintels</u>		
13	Pair of 110 x 75mm Lintels in lengths exceeding 3m and not exceeding 4,5m	m	9
	<u>Ventillation bricks</u>		
14	Set of two 22 x 155mm high terra cotta clay vermin proof air bricks including making good reveals and gauze	No	8
<b>Carried Forward to Summary of Section No. 6</b>			R
Section No. 6			
Type - FD3			
Bill No. 2			
Masonry			



Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.3</u></b>			
	<b><u>WATERPROOFING</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>DAMP-PROOFING OF WALLS AND FLOORS</u></b>			
	<u>One layer of 375 micron "Consol Plastic Brikgrip DPC" embossed damp proof course</u>			
1	In walls	m2	5	
	<u>One layer of 250 micron waterproof sheeting and sealed at overlaps with pressure sensitive tape</u>			
2	Under surface beds	m2	25	
	<b><u>FLOOR AND WALLS SEALERS</u></b>			
	<u>Secomastic non setting mastic sealant applied cold with a hand pressure caulking gun and leave perfectly watertight:</u>			
3	Around steel windows and door frames.	m	12	
	<b>Carried Forward to Summary of Section No. 6</b>		R	
	Section No. 6 Type - FD3 Bill No. 3 Waterproofing			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO.4</u></b>			
<b><u>ROOF COVERINGS ETC</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>General</u>			
All roof coverings, etc, to be with a covering of Z275 galvanising			
The roof coverings shall be roll-formed in continuous lengths from certified steel complying with ASTM 446 Grade E (3t) and shall carry Agreement Certification			
All holes to be drilled and not punched			
Where described as with "Globalcoat" finish, all sheets, flashings, etc., shall be with "Globalcoat" silicone polyester paint for exterior use			
<u>Sizes</u>			
All items are measured net unless otherwise described			
<u>Flashings, trimming plates, etc</u>			
Prices to include for all cutting and waste and relevant fixing material, unless otherwise described			
All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable			
All items are unless otherwise described measured net			
<b><u>PROFILED METAL SHEETING AND ACCESSORIES</u></b>			
<b>Carried Forward</b>		R	
Section No. 6 Type - FD3 Bill No. 4 Roof Covering, ETC			

Brought Forward			R
<b><u>0.6mm "Kliplok" roof sheeting in chromadek finish fixed to timber purlins (elsewhere)</u></b>			
<b><u>NOTE:</u></b>			
A written guarantee stating that the roofs including the flashings, are guaranteed to be waterproof for a period of 12 months must be submitted and handed over to the Principal Agent			
1	Roof covering with pitch not exceeding 25 degrees	m2	36
<u>Sundries</u>			
2	12" Thermal resistance sisalation laid on purlins	m2	29
<b>Carried Forward to Summary of Section No. 6</b>			R
Section No. 6			
Type - FD3			
Bill No. 4			
Roof Covering, ETC			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.5</u></b>			
	<b><u>CARPENTRY AND JOINERY</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Pre-fabricated metal connected timber roof trusses</u>			
	All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction			
	<u>Timber</u>			
	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			
	<u>Bolts</u>			
	Bolts shall be in accordance with BS 4190 or SANS 135			
	<u>Shear plates, tooth connectors and split rings</u>			
	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"			
	<u>Washers</u>			
	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			
	<b>Carried Forward</b>		R	
	Section No. 6 Type - FD3 Bill No. 5 Carpentry and Joinery			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness</p> <p>3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness</p> <p><u>Metal connector plates</u></p> <p>Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel</p> <p>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</p> <p>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</p> <p><u>Truss construction</u></p> <p>Trusses shall be constructed in jigs specially designed to ensure the correct profile, overhangs and cambers</p> <p>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</p> <p><u>Truss design</u></p> <p>All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")</p> <p>The truss centres shall be less than or equal to that as described in this bill for each respective truss</p> <p><u>Truss spacing</u></p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 6 Type - FD3 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Truss pitch</u></p> <p>The truss pitch shall be as described in this bill for each respective truss type</p> <p><u>Truss loading</u></p> <p>Trusses shall be designed for a live load of 0,50kN/m<sup>2</sup> and dead load as specified under the sub-heading "Specific load specifications for roof trusses"</p> <p><u>Shop drawings, design and erection guarantee certificates</u></p> <p>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</p> <p><u>Dimensions</u></p> <p>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</p> <p><u>Erection</u></p> <p>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</p> <p><u>Design system</u></p> <p>The design system as documented in this bill is based on the "MiTek" system and all references given in the descriptions are related to specific type of trusses based on this design system</p> <p>However, Contractors are to note that any design system of similar quality may be used subject to the prior written approval of the Principal Agent</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 6 Type - FD3 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Specific specifications for roof trusses</u></p> <p>Unless otherwise described, the following specifications will apply:</p> <ol style="list-style-type: none"> <li>1 All trusses to be with a 17° pitch at approximately 1000mm centres</li> <li>2 The dead load consists of 0,6mm "Corrugated Iron Roof Truss" heavy industrial galvanised finish, 50 x 76mm purlins at approximately 1150mm centres, 6mm fibre-cement nailed-up ceilings on 50 x 38mm brandering at 400mm centres and 50mm glass fibre insulation blanket laid on top of ceilings</li> </ol> <p><u>Rates</u></p> <p>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, fabrication of trusses, checking the completed truss for quality, loading up, transporting to the site of the works and off loading, storing under cover and protecting from the weather, hoisting up in position and erection of the roof truss structure, necessary supervision, submission of all shop drawings, design and erection guarantee certificates, etc. as specified</p> <p><u>Particle board</u></p> <p>Particle board shall comply with the following specifications:</p> <ol style="list-style-type: none"> <li>a) SANS 1300 Particle board: exterior and flooring type</li> <li>b) SANS 1301 Particle board: interior type</li> </ol> <p><u>Joinery</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 6 Type - FD3 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

Brought Forward				R
Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes				
<u>Fixing</u>				
Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete				
<u>Decorative laminate finish</u>				
Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish				
Items described as with "Formica" on one side shall include a "CPL" treated brown backer on other side and "Vaposeal" sealer. All cut edges and exposed particle board to be sealed with one coat acrylic sealer and then with allche				
<b><u>ROOFS, ETC.</u></b>				
<b><u>The following in plate nailed timber roof truss construction</u></b>				
<u>The following is applicable in respect of roof trusses</u>				
The references given in the descriptions are to the respective types of trusses detailed on the architect's drawings annexed to these bills of quantities/accompanying these bills of quantities for tender purposes				
Prices for rafters and trusses to include all "Hurricane" clips, steel M-runners and "Permfix" plates, screws, nails, wires, sundry material, etc (bracing, wallplates, purlins and gangboarding are measured seperately)				
<u>Sawn softwood</u>				
1	38 x 114mm Rafters in lengths exceeding 3,9m ans not exceeding 6,6	m	33	
2	76 x 38mm wall plates	m	19	
3	50 x 76mm Purlins in lengths exceeding 3,9m and not exceeding 6,6m	m	42	
<b>Carried Forward</b>				R
Section No. 6 Type - FD3 Bill No. 5 Carpentry and Joinery				



Brought Forward			R
<u>Sundries</u>			
4	Two coats creosote on sawn timbers	m2	33
5	6mm Diameter galvanised wire tie 3000mm girth wrapped around rafter and purlin with ends tied together	No	11
6	Hurricane clips	No	18
<b><u>EAVES, VERGES, ETC</u></b>			
<u>"Everite FC77" pressed fibre-cement</u>			
7	15 x 230mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	22
<b><u>DOORS, ETC</u></b>			
<u>Wrought meranti doors hung to steel frames</u>			
8	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	1
9	44mm Purpose made Framed batten door 813 x 1882mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed (door raised by 120mm from bottom) (D2)	No	3
10	44mm Framed batten door 915 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D3)	No	1
<b>Carried Forward to Summary of Section No. 6</b>			R
Section No. 6			
Type - FD3			
Bill No. 5			
Carpentry and Joinery			

Item No		Quantity	Rate	Amount
	<p><b><u>SECTION NO.2</u></b></p> <p><b><u>BILL NO. 6</u></b></p> <p><b><u>IRONMONGERY</u></b></p> <p><b><u>PREAMBLES</u></b></p> <p>For preambles see " Specification of materials and methods to be used - PW 371"</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Finishes to ironmongery</u></b></p> <p>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</p> <p><b><u>CATCHES, CABIN HOOKS, ETC</u></b></p> <p><u>Approved</u></p> <p>1      150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged                  No                  3</p> <p><b><u>LOCKS</u></b></p> <p><b><u>"EN-SUITE" LOCKS</u></b></p> <p>The following locks are to be suitable for master and grand master key operation</p>			
	<b>Carried Forward</b>		R	
	Section No. 6 Type - FD3 Bill No. 6 Ironmongery			

Brought Forward			R
	<u>"Dorma"</u>		
2	Three lever mortice lockset	No	2
3	Indicator lockset	No	3
<b><u>SUNDRIES</u></b>			
	<u>"Dorma"</u>		
4	38mm Diameter rubber door stop plugged	No	2
<b><u>LETTERS, NAME PLATES, ETC</u></b>			
	<u>Union or similar approved</u>		
5	75 x 150mm Natural anodised aluminium plate with male or female symbol	No	1
<b><u>BATHROOM FITTINGS</u></b>			
	<u>Kimberley-Clarkor Simlilar</u>		
6	Kimberly Clark SQ2 code 405607B white lockable toilet roll holder	No	4
	<u>Vaal Paragon or equal approved</u>		
7	32mm Type 8 side grab rail 900mm long plugged	No	1
8	32mm Type 8 back grab rail 800mm long plugged	No	1
<b>Carried Forward to Summary of Section No. 6</b>			R
Section No. 6			
Type - FD3			
Bill No. 6			
Ironmongery			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 7</u></b>			
	<b><u>METALWORK</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and method to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Descriptions</u></b>			
	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			
	Metalwork described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
	<b><u>WELDED SCREENS, GATES, ETC</u></b>			
	<u>Steel gates and frames</u>			
1	Purpose made square hallow section mild steel security gate, size 813 x 2032mm High	No	1	
2	Purpose made square hallow section mild steel security gate, size 915 x 2032mm High	No	1	
	<b><u>PRESSED STEEL DOOR FRAMES</u></b>			
	<u>1,2mm Double rebated frames suitable for half brick walls (with no paint finish)</u>			
3	Frame for door 813 x 1882mm high	No	3	
	<u>1,6mm Double rebated frames suitable for one brick walls</u>			
4	Frame for door 813 x 2032mm high	No	1	
	<b>Carried Forward</b>		R	
	Section No. 6 Type - FD3 Bill No. 7 Metalwork			

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Section No. 6  
Type - FD3  
Bill No. 8  
Plastering

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 9</u></b>			
	<b><u>PLUMBING AND DRAINAGE</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>uPVC pipes and fittings</u></b>			
	Soil, waste and vent pipes and fittings shall be solvent weld jointed			
	<b><u>uPVC pressure pipes and fittings</u></b>			
	Pipes for water supply shall be of the class stated			
	Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings			
	Pipes of 50mm diameter and greater shall have sockets and spigots with push in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints			
	<b><u>Copper pipes</u></b>			
	Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground			
	<b>Carried Forward</b>		R	
	Section No. 6 Type - FD3 Bill No. 9 Plumbing and Drainage (Provisional)			

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>Fixing of pipes</u></b></p> <p>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</p> <p><b><u>Reducing fittings</u></b></p> <p>Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained</p> <p><b><u>Wire gratings</u></b></p> <p>Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings</p> <p><b><u>Flush pans</u></b></p> <p>Flush pans shall have straight or side outlets and "P" or "S" traps as necessary</p> <p><b><u>Stainless steelbasins, sinks, wash troughs, urinals, etc.</u></b></p> <p>Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable</p> <p><b><u>Waste unions</u></b></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings</p> <p><b><u>SANITARY FITTINGS</u></b></p> <p><u>Vaal or similar approved</u></p>	<p style="text-align: right;">R</p>
<p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 6 Type - FD3 Bill No. 9 Plumbing and Drainage (Provisional)</p>	<p style="text-align: right;">R</p>



Brought Forward			R
<b><u>White glazed fireclay or vitreous china coupling with SABS specification 497 in</u></b>			
1	"Vaal or similar approved Paraplegic vitreous china floor mounted coupling with SABS specification.	No	1
2	"Vaal or similar approved duct LL LYNX Cistern complete with pan and rubber flushpipe connector. Installation method will be instructed by Engineer on site.	No	3
3	"Vaal hibiscus" wash hand basin bolted to wall including all fittings and necessary pipework	No	2
<b><u>TAPS, VALVES, ETC</u></b>			
Manufactured by "Cobra Watertech" or other and approved			
4	32mm CP waste plastic plug and chain	No	4
5	15mm cobra 503-21B elbow action pillar cold water tap	No	4
<b><u>WASTE UNIONS ECT</u></b>			
<u>Manufactured by " cobra Watertech"</u>			
6	15mm "232/350CP" angle regulating valve with 350mm long service connection	No	4
7	15mm Stopcock	No	4
8	22mm Non-return valve	No	4
9	22mm 700RB high pressure float valve including ball	No	4
10	PBI.10RB 22mm vacuum breaker	No	4
<b><u>TRAPS ETC</u></b>			
11	32mm x 40mm bottle trap	No	2
Carried Forward			R
Section No. 6 Type - FD3 Bill No. 9 Plumbing and Drainage (Provisional)			

Brought Forward			R
	<u>Pre-cast concrete wash trough</u>		
12	Supply and install pre-cast concrete double wash-trough, complete with all necessary pipework including soakaway size 1000 x 1000 x 1000mm covered with "bidim"	No	1
	<b><u>FITTINGS</u></b>		
	"Walker Crosweller" or Similar		
13	15mm chrome plated push button taps to wash troughs with internal flow control, strainer, no hold feature and water saving shut-off	No	2
14	32mm CP waste plastic plug and chain	No	2
	"Kimberley - Clark" or Similar		
15	21 Litre Stainless-steel SHE-BIN plugged to wall with dimensions 505 x 280 x 180mm, fill volume size 12L, including hand operated lid.	No	4
	<b><u>DRAINAGE</u></b>		
	<u>Upvc Pipes</u>		
16	110mm Upvc diameter pipe laid in ground not exceeding 1m, but n.e 1.5m deep, including trenches.	m	40
17	50mm Upvc pipe	m	20
	<u>Extra over Upvc pipes for fittings</u>		
18	110mm Junction with inspection eyes	No	3
19	110mm bend	No	12
20	110mm pan connector	No	9
21	110mm Junction	No	12
22	110mm x 50mm Reducer	No	9
23	50mm bend	No	8
24	50mm access bend	No	12
	<b>Carried Forward</b>		R
	Section No. 6 Type - FD3 Bill No. 9 Plumbing and Drainage (Provisional)		

Brought Forward				R
	<u>PVC-U soil and vent pipes</u>			
25	110mm vent pipe	No	9	
26	50mm vent pipe	No	9	
27	15mm Service pipe 350mm girth	No	9	
	<b><u>WATER SUPPLY</u></b>			
	<u>Class O copper pipe</u>			
28	15mm Pipes	m	20	
29	22mm Pipes	m	20	
	<u>Extra over class O copper fittings</u>			
30	15mm fittings	No	30	
31	22mm fittings	No	30	
32	Copper overflow and service pipes	No	30	
	<u>Galvanised pipes and fittings</u>			
33	15mm Pipes	m	30	
34	22mm Pipes	m	30	
	<u>Extra over Galvanised pipes for fittings</u>			
35	15mm Fitting	No	30	
36	22mm Fitting	No	30	
37	15mm Service pipe 350mm girth	No	12	
	<u>32mm Diameter Class 10 HDPE pipe</u>			
38	32mm HDPE Class 10 HDPE Pipes, including excavation in earth, from the existing connection point to the washing troughs	m	50	
	<u>Testing</u>			
39	Testing water pipe system		Item	
	<b>Carried Forward to Summary of Section No. 6</b>			R
	Section No. 6			
	Type - FD3			
	Bill No. 9			
	Plumbing and Drainage (Provisional)			

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Section No. 6  
Type - FD3  
Bill No. 11  
Paintwork

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Section No. 6  
Type - FD3

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.1</u></b>			
	<b><u>FOUNDATIONS (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Nature of ground</u></b>			
	<b><i>Classification of excavated material</i></b>			
	A soils investigation has been carried out on site by the Principal Agent and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured			
	<b><u>Filling (General)</u></b>			
	It will be, at all times, required from the Contractor to apply and execute strict quality control on all filling material used			
	All filling obtained from a commercial source should comply to minimum G6 standard			
	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"			
	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			
	<b>Carried Forward</b>		R	
	Section No. 7 Type - SFD3 Bill No. 1 Foundation			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>Backfilling described as:</p> <ul style="list-style-type: none"> <li>- <b>"filling in pipe trenches, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> <li>- <b>"filling behind retaining walls, etc."</b>, all backfilling shall be done with approved backfilling compacted to 93% Mod. AASHTO density, unless otherwise described</li> </ul> <p><b><u>Filling in sub-layers, under floors, etc</u></b></p> <p>All filling in layers under surface beds, in sub-layers, to form earth mattresses, etc. shall be done with materials specified and according to methods prescribed by the SABS 1200ME Sub-base Specification</p> <p>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</p> <p>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 Bureau of Standards and be kept on site at all times</p> <p><b><u>CBR and indicator tests</u></b></p> <p>Density tests for monitoring filling shall be done at the minimum prescribed frequencies per each 150mm thick layer of filling placed</p> <p>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</p> <p>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</p> <p><b><u>Density tests</u></b></p> <p>It will be required from the Contractor to execute density tests for monitoring filling at the following minimum frequencies per each filling layer placed:</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 7 Type - SFD3 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p>



<p style="text-align: center;"><b>Brought Forward</b></p> <ul style="list-style-type: none"> <li>- <b>Filling under surface beds, aprons, channels, etc:</b> 1 Test per 125m<sup>2</sup> plan area per each 150mm thick layer</li> <li>- <b>Filling behind retaining walls:</b> 1 Test per each 150mm thick layer per each 15m length of retaining wall</li> </ul> <p>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</p> <p>A separte item has been measured for density tests in this Bill</p> <p>No additional claims in this regard will afterwards be entertained</p> <p><b><u>Carting away of excessive and/or unsuitable excavated material</u></b></p> <p>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</p> <p>The location of the intended dumping site will be subjected to the prior written approval of the Principal Agent</p> <p>The Contractor will also be liable to, upon completion, rehabilitate all those areas of the dumping site used for 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</p> <p>Tendered rates must make provision for the above-mentioned as no additional claims in this regard will afterwards be entertained</p> <p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 7 Type - SFD3 Bill No. 1 Foundation</p>	<p style="text-align: center;">R</p> <hr/> <p style="text-align: center;">R</p>
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<b>Brought Forward</b>			R
<b><u>Measurement and payment</u></b>			
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			
<b><u>Mixing of concrete</u></b>			
No hand mixing of concrete will be allowed on site			
<b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b>			
The Contractor is referred to the next Bill No 2, Concrete, Formwork and Reinforcement, and Bill No 3, Masonry, 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			
<b><u>Demolitions</u></b>			
<u>Note:</u>			
Unless otherwise stated, all usable material from the demolitions should be kept safely and handed over to the school governing body or the school principal who shall sign for all material received.			
The builder should allow for the removal of all debris from site at all times and keeping the site clean at all times.			
<b><u>SITE CLEARANCE</u></b>			
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2	67
2	Stripping average 100mm thick layer of top soil and stockpiling on site	m2	67
<b><u>EXCAVATION, FILLING, ETC</u></b>			
<b>Carried Forward</b>			R
Section No. 7 Type - SFD3 Bill No. 1 Foundation			

Brought Forward			R
	<u>Excavation in earth or compacted platforms not exceeding 2m deep</u>		
3	Trenches	m3	15
4	For aprons thickening	m3	2
	<u>Extra over trench and hole excavations in earth for excavation:</u>		
5	Soft rock	m3	4
6	Hard rock	m3	2
	<u>Extra over all excavations for carting away</u>		
7	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	25
	<u>Risk of collapse of excavations</u>		
8	Sides of trench and hole excavations not exceeding 1,5m deep	m2	47
	<u>Keeping excavations free of water</u>		
9	Keeping excavations free of water		Item
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density</u>		
10	Under floors, steps, pavings, etc.	m3	8
11	Backfilling to trenches, holes, etc.	m3	4
	<u>Compaction of surfaces</u>		
12	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	23
13	Compaction of ground surface to pits etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	25
Carried Forward			R
Section No. 7 Type - SFD3 Bill No. 1 Foundation			

	Brought Forward			R
14	Compaction of ground surface to aprons etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	29	
	<u>Prescribed density tests on filling</u>			
15	"Modified AASHTO Density" test	No	4	
	<b><u>SOIL POISONING</u></b>			
	All soil poisoning and insecticide to be applied under a <i>five year</i> guarantee by an approved firm of Specialists. Soil insecticides shall comply with <i>SABS Specification 1165</i> . Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - <i>SABS Code of Practice 0124</i>			
	Casting of concrete floors to start within 24 hours after the application of soil poisoning			
	<i>Pest control applicators must provide :</i>			
	1. Proof of pesticides and insecticides (data sheets)			
	2. Toxicants must be registered with the Departement of Agriculture			
	2. Proof that they are qualified to perform the work			
	3. Five year guarantee certificate			
	<u>Soil poisoning and insecticide</u>			
16	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	23	
17	To bottoms and sides of trenches, etc	m2	23	
18	To bottom of concrete aprons	m2	19	
	<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
	<u>UNREINFORCED CONCRETE, ETC</u>			
	<u>25MPa/19mm concrete</u>			
19	Strip footings	m3	5	
	<b>Carried Forward</b>			R
	Section No. 7			
	Type - SFD3			
	Bill No. 1			
	Foundation			

Brought Forward			R
20	Aprons cast in panels	m3	3
21	Extra over concrete in surface beds for thickening 85mm deep the bottom including all excavation, backfilling etc.	m	33
22	Thickening down apron on edge 110mm deep x 200mm wide	m	11
<b><u>REINFORCED CONCRETE, ETC</u></b>			
<u>25MPa/19mm concrete</u>			
23	Slabs	m3	2
<b><u>TEST CUBES</u></b>			
24	Allow for preparing a set of three test cubes each size 150x150x150mm, sending them to an approved testing laboratory for testing and paying all charges in connection therewith.	Sets	6
<b><u>CONCRETE SUNDRIES</u></b>			
<u>Finishing top surfaces of concrete smooth with a steel trowel</u>			
25	Aprons and pavings to falls	m2	23
26	Surface beds, slabs, etc.	m2	25
<b><u>ROUGH FORMWORK (DEGREE OF ACCURACY III)</u></b>			
<u>Rough formwork to sides</u>			
27	Edges of surface beds not exceeding 300mm high or wide	m	66
<b><u>REINFORCEMENT (PROVISIONAL)</u></b>			
<u>Mesh reinforcement</u>			
28	Ref 395 Mesh steel fabric reinforcement laid in concrete surface beds minimum 150mm along edges and ends (Measured net)	m2	23
<b><u>BRICKWORK IN FOUNDATIONS</u></b>			
Carried Forward			R
Section No. 7 Type - SFD3 Bill No. 1 Foundation			

Brought Forward			R
	<u>Brickwork of NFX bricks in class I mortar</u>		
29	One brick walls	m2	9
	<b><u>BRICKWORK SUNDRIES</u></b>		
	<u>Brickwork reinforcement</u>		
30	150mm Wide reinforcement built in horizontally	m	30
	<b><u>FACE BRICKWORK</u></b>		
	<u>Face Bricks (PC Amount R 5 500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>		
31	Extra over brickwork for face brickwork in foundation	m2	4
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Type - SFD3			
Bill No. 1			
Foundation			

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO. 2</u></b>			
<b><u>MASONRY</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>Sizes in descriptions</u></b>			
Where sizes in descriptions are given in brick units, "one-brick" shall represent the length and "half-brick" the width of a brick			
<b><u>Face bricks</u></b>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<b><u>Pointing</u></b>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
<b><u>SUPERSTRUCTURE</u></b>			
<b><u>FACE BRICKWORK</u></b>			
<u>Face Bricks (PC Amount R 5,500.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints</u>			
1	Half brickwork for face brick walls pointed both sides	m2	21
2	One brickwork for face brick walls pointed both sides	m2	70
3	Extra over brickwork for face brickwork in beamfilling	m2	4
4	Fair raking and cutting	m	11
<b>Carried Forward</b>			R
Section No. 7 Type - SFD3 Bill No. 2 Masonry			

Brought Forward			R
<u>Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces</u>			
5	Extra over brickwork for brick-on-edge header course lintels pointed on two sides and 110mm soffit	m	8
6	Face brick-on-edge window sill 220mm wide pointed on two side and on top and set at a angle	m	6
7	Fair cutting and fitting around pipe not exceeding 100mm diameter.	m	6
<b><u>BRICKWORK SUNDRIES</u></b>			
<u>Brickwork reinforcement</u>			
8	75mm Wide reinforcement built in horizontally	m	125
9	150mm Wide reinforcement built in horizontally	m	362
<u>Turning pieces</u>			
10	110mm Wide turning piece to lintels etc	m	4
11	220mm Wide turning piece to lintels etc	m	7
<u>Galvanised hoop iron cramps, ties, etc</u>			
12	6mm Diameter roof tie 2m girth bent double with one end fixed to timber and other built into brickwork	No	11
<u>Prestressed fabricated lintels</u>			
13	Pair of 110 x 75mm Lintels in lengths exceeding 3m and not exceeding 4,5m	m	9
<u>Ventillation bricks</u>			
14	Set of two 22 x 155mm high terra cotta clay vermin proof air bricks including making good reveals and gauze	No	8
<b>Carried Forward to Summary of Section No. 7</b>			R
Section No. 7			
Type - SFD3			
Bill No. 2			
Masonry			



Section No. 7  
Type - SFD3  
Bill No. 3  
Waterproofing

Item No	Quantity	Rate	Amount
<b><u>SECTION NO.2</u></b>			
<b><u>BILL NO.4</u></b>			
<b><u>ROOF COVERINGS ETC</u></b>			
<b><u>PREAMBLES</u></b>			
For preambles see " Specification of materials and methods to be used - PW 371"			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>General</u>			
All roof coverings, etc, to be with a covering of Z275 galvanising			
The roof coverings shall be roll-formed in continuous lengths from certified steel complying with ASTM 446 Grade E (3t) and shall carry Agreement Certification			
All holes to be drilled and not punched			
Where described as with "Globalcoat" finish, all sheets, flashings, etc., shall be with "Globalcoat" silicone polyester paint for exterior use			
<u>Sizes</u>			
All items are measured net unless otherwise described			
<u>Flashings, trimming plates, etc</u>			
Prices to include for all cutting and waste and relevant fixing material, unless otherwise described			
All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable			
All items are unless otherwise described measured net			
<b><u>PROFILED METAL SHEETING AND ACCESSORIES</u></b>			
<b>Carried Forward</b>		R	
Section No. 7 Type - SFD3 Bill No. 4 Roof Covering, ETC			

Brought Forward			R
<b><u>0.6mm "Kliplok" roof sheeting in chromadek finish fixed to timber purlins (elsewhere)</u></b>			
<b><u>NOTE:</u></b>			
A written guarantee stating that the roofs including the flashings, are guaranteed to be waterproof for a period of 12 months must be submitted and handed over to the Principal Agent			
1	Roof covering with pitch not exceeding 25 degrees	m2	36
<u>Sundries</u>			
2	12" Thermal resistance sisalation laid on purlins	m2	29
<b>Carried Forward to Summary of Section No. 7</b>			R
Section No. 7			
Type - SFD3			
Bill No. 4			
Roof Covering, ETC			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO.5</u></b>			
	<b><u>CARPENTRY AND JOINERY</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Pre-fabricated metal connected timber roof trusses</u>			
	All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction			
	<u>Timber</u>			
	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			
	<u>Bolts</u>			
	Bolts shall be in accordance with BS 4190 or SANS 135			
	<u>Shear plates, tooth connectors and split rings</u>			
	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"			
	<u>Washers</u>			
	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			
	<b>Carried Forward</b>		R	
	Section No. 7 Type - SFD3 Bill No. 5 Carpentry and Joinery			

<p style="text-align: center;"><b>Brought Forward</b></p> <p>2 Bolts up to 12mm diameter: Washers shall be minimum 36mm wide of minimum 4,00mm thickness</p> <p>3 Bolts up to 20mm diameter: Washers shall be minimum 60mm wide of minimum 5,00mm thickness</p> <p><u>Metal connector plates</u></p> <p>Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel</p> <p>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/m<sup>2</sup> commercial class hot dipped galvanising as per SANS 934 before stamping</p> <p>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</p> <p><u>Truss construction</u></p> <p>Trusses shall be constructed in jigs specially designed to ensure the correct profile, overhangs and cambers</p> <p>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</p> <p><u>Truss design</u></p> <p>All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")</p> <p>The truss centres shall be less than or equal to that as described in this bill for each respective truss</p> <p><u>Truss spacing</u></p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 7 Type - SFD3 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Truss pitch</u></p> <p>The truss pitch shall be as described in this bill for each respective truss type</p> <p><u>Truss loading</u></p> <p>Trusses shall be designed for a live load of 0,50kN/m<sup>2</sup> and dead load as specified under the sub-heading "Specific load specifications for roof trusses"</p> <p><u>Shop drawings, design and erection guarantee certificates</u></p> <p>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</p> <p><u>Dimensions</u></p> <p>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</p> <p><u>Erection</u></p> <p>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</p> <p><u>Design system</u></p> <p>The design system as documented in this bill is based on the "MiTek" system and all references given in the descriptions are related to specific type of trusses based on this design system</p> <p>However, Contractors are to note that any design system of similar quality may be used subject to the prior written approval of the Principal Agent</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 7 Type - SFD3 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p><u>Specific specifications for roof trusses</u></p> <p>Unless otherwise described, the following specifications will apply:</p> <ol style="list-style-type: none"> <li>1 All trusses to be with a 17° pitch at approximately 1000mm centres</li> <li>2 The dead load consists of 0,6mm "Corrugated Iron Roof Truss" heavy industrial galvanised finish, 50 x 76mm purlins at approximately 1150mm centres, 6mm fibre-cement nailed-up ceilings on 50 x 38mm brandering at 400mm centres and 50mm glass fibre insulation blanket laid on top of ceilings</li> </ol> <p><u>Rates</u></p> <p>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, fabrication of trusses, checking the completed truss for quality, loading up, transporting to the site of the works and off loading, storing under cover and protecting from the weather, hoisting up in position and erection of the roof truss structure, necessary supervision, submission of all shop drawings, design and erection guarantee certificates, etc. as specified</p> <p><u>Particle board</u></p> <p>Particle board shall comply with the following specifications:</p> <ol style="list-style-type: none"> <li>a) SANS 1300 Particle board: exterior and flooring type</li> <li>b) SANS 1301 Particle board: interior type</li> </ol> <p><u>Joinery</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 7 Type - SFD3 Bill No. 5 Carpentry and Joinery</p>	<p style="text-align: center;">R</p>

Brought Forward			R
<p>Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes</p> <p><u>Fixing</u></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete</p> <p><u>Decorative laminate finish</u></p> <p>Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish</p> <p>Items described as with "Formica" on one side shall include a "CPL" treated brown backer on other side and "Vaposeal" sealer. All cut edges and exposed particle board to be sealed with one coat acrylic sealer and then with allche</p> <p><b><u>ROOFS, ETC.</u></b></p> <p><b><u>The following in plate nailed timber roof truss construction</u></b></p> <p><u>The following is applicable in respect of roof trusses</u></p> <p>The references given in the descriptions are to the respective types of trusses detailed on the architect's drawings annexed to these bills of quantities/accompanying these bills of quantities for tender purposes</p> <p>Prices for rafters and trusses to include all "Hurricane" clips, steel M-runners and "Permfix" plates, screws, nails, wires, sundry material, etc (bracing, wallplates, purlins and gangboarding are measured seperately)</p> <p><u>Sawn softwood</u></p>			
1	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6	m	33
2	76 x 38mm wall plates	m	19
3	50 x 76mm Purlins in lengths exceeding 3,9m and not exceeding 6,6m	m	42
Carried Forward			R
<p>Section No. 7 Type - SFD3 Bill No. 5 Carpentry and Joinery</p>			



Brought Forward			R
<u>Sundries</u>			
4	Two coats creosote on sawn timbers	m2	33
5	6mm Diameter galvanised wire tie 3000mm girth wrapped around rafter and purlin with ends tied together	No	11
6	Hurricane clips	No	18
<b><u>EAVES, VERGES, ETC</u></b>			
<u>"Everite FC77" pressed fibre-cement</u>			
7	15 x 230mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	22
<b><u>DOORS, ETC</u></b>			
<u>Wrought meranti doors hung to steel frames</u>			
8	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	1
9	44mm Purpose made Framed batten door 813 x 1882mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed (door raised by 120mm from bottom) (D2)	No	3
10	44mm Framed batten door 915 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D3)	No	1
<b>Carried Forward to Summary of Section No. 7</b>			R
Section No. 7			
Type - SFD3			
Bill No. 5			
Carpentry and Joinery			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 6</u></b>			
	<b><u>IRONMONGERY</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Finishes to ironmongery</u></b>			
	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			
	<b><u>CATCHES, CABIN HOOKS, ETC</u></b>			
	<u>Approved</u>			
1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	3	
	<b><u>LOCKS</u></b>			
	<b><u>"EN-SUITE" LOCKS</u></b>			
	The following locks are to be suitable for master and grand master key operation			
	<b>Carried Forward</b>		R	
	Section No. 7 Type - SFD3 Bill No. 6 Ironmongery			

Brought Forward			R
	<u>"Dorma"</u>		
2	Three lever mortice lockset	No	2
3	Indicator lockset	No	3
<b><u>SUNDRIES</u></b>			
	<u>"Dorma"</u>		
4	38mm Diameter rubber door stop plugged	No	2
<b><u>LETTERS, NAME PLATES, ETC</u></b>			
	<u>Union or similar approved</u>		
5	75 x 150mm Natural anodised aluminium plate with male or female symbol	No	1
<b><u>BATHROOM FITTINGS</u></b>			
	<u>Kimberley-Clarkor Simlilar</u>		
6	Kimberly Clark SQ2 code 405607B white lockable toilet roll holder	No	4
	<u>Vaal Paragon or equal approved</u>		
7	32mm Type 8 side grab rail 900mm long plugged	No	1
8	32mm Type 8 back grab rail 800mm long plugged	No	1
<b>Carried Forward to Summary of Section No. 7</b>			R
Section No. 7			
Type - SFD3			
Bill No. 6			
Ironmongery			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 7</u></b>			
	<b><u>METALWORK</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and method to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Descriptions</u></b>			
	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			
	Metalwork described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
	<b><u>WELDED SCREENS, GATES, ETC</u></b>			
	<u>Steel gates and frames</u>			
1	Purpose made square hallow section mild steel security gate, size 813 x 2032mm High	No	1	
2	Purpose made square hallow section mild steel security gate, size 915 x 2032mm High	No	1	
	<b><u>PRESSED STEEL DOOR FRAMES</u></b>			
	<u>1,2mm Double rebated frames suitable for half brick walls (with no paint finish)</u>			
3	Frame for door 813 x 1882mm high	No	3	
	<u>1,6mm Double rebated frames suitable for one brick walls</u>			
4	Frame for door 813 x 2032mm high	No	1	
	<b>Carried Forward</b>		R	
	Section No. 7 Type - SFD3 Bill No. 7 Metalwork			

[illegible]

Section No. 7  
Type - SFD3  
Bill No. 8  
Plastering

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.2</u></b>			
	<b><u>BILL NO. 9</u></b>			
	<b><u>PLUMBING AND DRAINAGE</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>uPVC pipes and fittings</u></b>			
	Soil, waste and vent pipes and fittings shall be solvent weld jointed			
	<b><u>uPVC pressure pipes and fittings</u></b>			
	Pipes for water supply shall be of the class stated			
	Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings			
	Pipes of 50mm diameter and greater shall have sockets and spigots with push in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints			
	<b><u>Copper pipes</u></b>			
	Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground			
	<b>Carried Forward</b>		R	
	Section No. 7 Type - SFD3 Bill No. 9 Plumbing and Drainage (Provisional)			

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>Fixing of pipes</u></b></p> <p>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</p> <p><b><u>Reducing fittings</u></b></p> <p>Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained</p> <p><b><u>Wire gratings</u></b></p> <p>Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings</p> <p><b><u>Flush pans</u></b></p> <p>Flush pans shall have straight or side outlets and "P" or "S" traps as necessary</p> <p><b><u>Stainless steelbasins, sinks, wash troughs, urinals, etc.</u></b></p> <p>Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable</p> <p><b><u>Waste unions</u></b></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings</p> <p><b><u>SANITARY FITTINGS</u></b></p> <p><u>Vaal or similar approved</u></p>	<p style="text-align: right;">R</p>
<p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 7 Type - SFD3 Bill No. 9 Plumbing and Drainage (Provisional)</p>	<p style="text-align: right;">R</p>



Brought Forward			R
<b><u>White glazed fireclay or vitreous china coupling with SABS specification 497 in</u></b>			
1	"Vaal or similar approved Paraplegic vitreous china floor mounted coupling with SABS specification.	No	1
2	"Vaal or similar approved duct LL LYNX Cistern complete with pan and rubber flushpipe connector. Installation method will be instructed by Engineer on site.	No	3
3	"Vaal hibiscus" wash hand basin bolted to wall including all fittings and necessary pipework	No	2
<b><u>TAPS, VALVES, ETC</u></b>			
Manufactured by "Cobra Watertech" or other and approved			
4	32mm CP waste plastic plug and chain	No	4
5	15mm cobra 503-21B elbow action pillar cold water tap	No	4
<b><u>WASTE UNIONS ECT</u></b>			
<u>Manufactured by " cobra Watertech"</u>			
6	15mm "232/350CP" angle regulating valve with 350mm long service connection	No	4
7	15mm Stopcock	No	4
8	22mm Non-return valve	No	4
9	22mm 700RB high pressure float valve including ball	No	4
10	PBI.10RB 22mm vacuum breaker	No	4
<b><u>TRAPS ETC</u></b>			
11	32mm x 40mm bottle trap	No	2
Carried Forward			R
Section No. 7 Type - SFD3 Bill No. 9 Plumbing and Drainage (Provisional)			

Brought Forward			R
	<u>Pre-cast concrete wash trough</u>		
12	Supply and install pre-cast concrete double wash-trough, complete with all necessary pipework including soakaway size 1000 x 1000 x 1000mm covered with "bidim"	No	1
	<b><u>FITTINGS</u></b>		
	"Walker Crosweller" or Similar		
13	15mm chrome plated push button taps to wash troughs with internal flow control, strainer, no hold feature and water saving shut-off	No	2
14	32mm CP waste plastic plug and chain	No	2
	"Kimberley - Clark" or Similar		
15	21 Litre Stainless-steel SHE-BIN plugged to wall with dimensions 505 x 280 x 180mm, fill volume size 12L, including hand operated lid.	No	4
	<b><u>DRAINAGE</u></b>		
	<u>Upvc Pipes</u>		
16	110mm Upvc diameter pipe laid in ground not exceeding 1m, but n.e 1.5m deep, including trenches.	m	40
17	50mm Upvc pipe	m	20
	<u>Extra over Upvc pipes for fittings</u>		
18	110mm Junction with inspection eyes	No	3
19	110mm bend	No	12
20	110mm pan connector	No	9
21	110mm Junction	No	12
22	110mm x 50mm Reducer	No	9
23	50mm bend	No	8
24	50mm access bend	No	12
	<b>Carried Forward</b>		R
	Section No. 7 Type - SFD3 Bill No. 9 Plumbing and Drainage (Provisional)		

Brought Forward				R
<u>PVC-U soil and vent pipes</u>				
25	110mm vent pipe	No	9	
26	50mm vent pipe	No	9	
27	15mm Service pipe 350mm girth	No	9	
<b><u>WATER SUPPLY</u></b>				
<u>Class O copper pipe</u>				
28	15mm Pipes	m	20	
29	22mm Pipes	m	20	
<u>Extra over class O copper fittings</u>				
30	15mm fittings	No	30	
31	22mm fittings	No	30	
32	Copper overflow and service pipes	No	30	
<u>Galvanised pipes and fittings</u>				
33	15mm Pipes	m	30	
34	22mm Pipes	m	30	
<u>Extra over Galvanised pipes for fittings</u>				
35	15mm Fitting	No	30	
36	22mm Fitting	No	30	
37	15mm Service pipe 350mm girth	No	12	
<u>32mm Diameter Class 10 HDPE pipe</u>				
38	32mm HDPE Class 10 HDPE Pipes, including excavation in earth, from the existing connection point to the washing troughs	m	50	
<u>Testing</u>				
39	Testing water pipe system		Item	
<b>Carried Forward to Summary of Section No. 7</b>				R
Section No. 7				
Type - SFD3				
Bill No. 9				
Plumbing and Drainage (Provisional)				

[illegible]

Section No. 7  
Type - SFD3  
Bill No. 11  
Paintwork

Bill No	SECTION SUMMARY - Type - SFD3	Page No	Amount
1	Foundation	158	
2	Masonry	160	
3	Waterproofing	161	
4	Roof Covering, ETC	163	
5	Carpentry and Joinery	169	
6	Ironmongery	171	
7	Metalwork	173	
8	Plastering	174	
9	Plumbing and Drainage (Provisional)	179	
10	Glazing	180	
11	Paintwork	181	
Carried to Final Summary			R
Section No. 7 Type - SFD3			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO.3</u></b>			
	<b><u>BILL NO. 1</u></b>			
	<b><u>WALKWAYS - PAVING, ETC (PROVISIONAL)</u></b>			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>NOTE:</u></b> For preambles see "Specifications of materials and methods to be used - PW 371"			
	<b><u>SITE CLEARANCE</u></b>			
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2	1,026	
2	Stripping average 100mm thick layer of top soil and stockpiling on site	m2	1,026	
	<b><u>EXCAVATION, FILLING, ETC</u></b>			
	<u>Excavation in earth or compacted platforms not exceeding 2m deep</u>			
3	Trenches	m3	103	
	<u>Keeping excavations free of water</u>			
4	Keeping excavations free of water		Item	
	<u>Compaction of surfaces</u>			
5	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	316	
	<b>Carried Forward</b>			
	Section No. 8			
	External Works			
	Bill No. 1			
	Walkways - Paving			
			R	

Brought Forward			R
<b><u>SOIL POISONING</u></b>			
All soil poisoning and insecticide to be applied under a <i>five year</i> guarantee by an approved firm of Specialists. Soil insecticides shall comply with <i>SABS Specification 1165</i> . Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - <i>SABS Code of Practice 0124</i>			
Casting of concrete floors to start within 24 hours after the application of soil poisoning			
<i>Pest control applicators must provide :</i>			
1. Proof of pesticides and insecticides (data sheets)			
2. Toxicants must be registered with the Departement of Agriculture			
2. Proof that they are qualified to perform the work			
3. Five year guarantee certificate			
<u>Soil poisoning and insecticide</u>			
6	To bottoms and sides of trenches, etc.	m2	228
7	Under pavement	m2	316
<u>Supply and laying of 60mm Thick 35MPa concrete interlocking block paving of 200 x 80mm grey paving blocks in accordance with SANS 1058, laid to falls on and including 20mm thick sand layer with joints filled in with sand, compacted with a vibration compactor</u>			
8	Paving to 1.5m walkways areas etc to falls	m2	316
9	Extra over for straight edge blocks Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing	m	460
10	75 x 250mm High kerbs (SANS 927 fig 11) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc	m	460
11	One layer 250 micron green polyethylene waterproof sheeting	m2	342
<b>Carried Forward to Summary of Section No. 8</b>			R
Section No. 8			
External Works			
Bill No. 1			
Walkways - Paving			



Item No		Quantity	Rate	Amount
	<b><u>SECTION NO. 3</u></b>			
	<b><u>BILL NO. 2</u></b>			
	<b><u>FENCING, ETC (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 3</u></b>			
	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			
	<b><u>GENERAL SPECIFICATION FOR SECURITY FENCING</u></b>			
	<b><u>General</u></b>			
	The Contractor shall supply, deliver and erect fencing where shown on the drawings or as directed by the Principal Agent to the specifications as described hereunder			
	Pegs indicating the extent of the fence and the route thereof will be placed by the Principal Agent. Alternatively a drawing indicating the pegs, detailed measurements and directions of the fence will be provided by the Principal Agent			
	The Contractor shall be entirely responsible for maintaining a true and straight line between these pegs and all deviations there from shall be rectified by the Contractor at his own expense			
	<b>Carried Forward</b>		R	
	Section No. 8 External Works Bill No. 2 Fencing			

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>Materials</u></b></p> <p>All materials to be used for this work shall be new, of sound quality and suitable for their intended purposes. The use of second hand/grade material will not be permitted</p> <p><b><u>Clearing the fence line</u></b></p> <p>Although the clearing of the line fence is measured elsewhere under "general site clearance", it will be regarded the Contractor's responsibility to ensure that the ground surface along the fence line is at all times throughout the contract period kept and maintained cleared for a width of not less than 1m wide on each side of the fence and shall include for the digging up and removal of all rubbish, debris, vegetation, shrubs, bush, trees not exceeding 200mm diameter girth, etc., including levelling of the ground to ensure that the maximum and minimum clearances (as specified hereinafter) between the bottom strand and the ground is not exceeded</p> <p>All excessive surface irregularities shall be graded so that the fence will follow the general contour of the ground</p> <p>The cleared ground shall be kept clean and maintained throughout the construction period</p> <p><b><u>Concrete</u></b></p> <p>Concrete bases shall be placed in neatly formed excavations and shall be well rammed around posts and stays. The top of concrete bases shall be at a level of 25mm below ground level</p> <p><b><u>Mixing of concrete</u></b></p> <p>No hand mixing of concrete will be allowed on site</p> <p><b><u>Galvanised</u></b></p> <p>All references to "galvanised" shall mean <b><i>hot dipped galvanised</i></b> to the relevant specified SABS specification</p> <p><b><u>Wire mesh</u></b></p> <p>Wire mesh to be in accordance with SANS 1373</p>	<p style="text-align: right;">R</p>
<p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 8 External Works Bill No. 2 Fencing</p>	<p style="text-align: right;">R</p>

<p style="text-align: center;"><b>Brought Forward</b></p> <p>Wire mesh shall be of type, height and wire diameter as specified and tied to each straining wire with of 2mm diameter galvanised mild steel binding wire</p> <p>Vertical ends of wire mesh shall be tied to each straining post with 2mm diameter galvanized mild steel binding wire taken around the post and through each weld mesh opening</p> <p>All wire mesh shall be in long strips. The use of short and off-cut lengths will not be permitted</p> <p><b><u>Wire (General)</u></b></p> <p>All wire to be galvanised in accordance with SANS 675</p> <p><b><u>Straining wires</u></b></p> <p>All wire to be galvanised in accordance with SANS 675 and of type as specified</p> <p>Straining wires shall be tied to 10mm diameter straining eye bolts at one end with other end four times wrapped around and tied to straining, corner, draw, end and gate posts</p> <p><b><u>Barbed wires</u></b></p> <p>All barbed wire to be galvanised in accordance with SANS 675 and of type as specified</p> <p>Barbed wires shall be tied to eyebolts at one end with other end four times wrapped around and tied to straining, corner, draw, end and gate posts</p> <p><b><u>Bolts, etc</u></b></p> <p>All bolts, nuts and washers shall be of galvanised mild steel</p> <p><b><u>Eyebolts</u></b></p> <p>Eyebolts for fixing straining wires to straining, corner, draw, end and gate posts shall be 12mm diameter and 300mm long overall of galvanised mild steel, with one end threaded, complete with nut and washer</p>	<p style="text-align: center;">R</p>
<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 8 External Works Bill No. 2 Fencing</p>	<p style="text-align: center;">R</p>

<p style="text-align: right;"><b>Brought Forward</b></p> <p><b><u>Posts, standards, stays, etc</u></b></p> <p>All posts, stays and standards, etc. to:</p> <ul style="list-style-type: none"> <li>a) be of galvanised round mild steel tubular section in accordance with SANS 763;</li> <li>b) have a 2mm thick domed pressed steel end caps welded to top ends of posts;</li> <li>c) have a base plate with size and thickness as specified welded to bottom ends of posts;</li> <li>d) have holes drilled for wires in correct positions as specified</li> </ul> <p><b><u>Gates</u></b></p> <p>All gates to:</p> <ul style="list-style-type: none"> <li>a) be of galvanised round mild steel tubular section in accordance with SANS 763;</li> <li>b) be with all joints welded all round the construction at intersections;</li> <li>c) descriptions of gates shall be deemed to include all necessary hinges, washers, bolts, locking bolts, plates and chains, etc</li> </ul> <p><b><u>Tendered rates</u></b></p> <p>Tendered rates shall include for the supply and delivery of all materials, labour, erection of fence, all earthwork activities, concrete, shuttering, tools, plant, paintwork and anything else necessary to complete the fence</p> <p>No additional claims in this regard will afterwards be entertained</p> <p><b><u>Concrete bases</u></b></p> <p>All posts and stays shall be embedded in 15MPa/19mm concrete bases of not less than the following dimensions:</p> <ul style="list-style-type: none"> <li>a) Strainer, corner, draw, end and gate posts: 400 x 400 x 900mm deep</li> <li>b) Stays: 300 x 300 x 450mm deep</li> </ul>	<p style="text-align: right;">R</p>
<p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 8 External Works Bill No. 2 Fencing</p>	<p style="text-align: right;">R</p>

Brought Forward			R
<b><u>Palisade Steel security fencing as per architect's drawing</u></b>			
1	Steel Palisade Fencing-Panels 3 x 1.8m high. Fence Bearers: 40 x 40 x 2mm angle iron placed at 300mm from top of paling and 300 from bottom of paling. (35mm from ground level). This to be welded flash with the back of the post. Palings "Devil fork" - 21 palings per panel. 30 x 30 x 2mm steel angle iron paling 1.8m high. Palings to be inserted and firmly welded to the bearers at 133mm centre to centre. Top of the paling to provide Devil Fork" effect and the bottom will have a dove tail. Posts - 76 x 76 x 2mm steel square tubing with closing pyramid caps on top. Post must have 2.4m high. Including 400 x 400 x 600mm depth to be casted in concrete footing as per engineer.	m	600
2	Double Gate - Steel Palisade Single Swing Gate size 4 m x wide x 1.8m high. 40 x 40 x 2mm angle iron palings welded to a minimum 50 x 25 x 1.6mm rectangular tubing bearer frame. Palings to be placed at 133mm apart from each other centre to centre including 600mm concrete footings.	No	1
<b><u>ON METAL</u></b>			
<u>Spot priming defects in pre-primed surfaces with one coat red oxide zinc chromate primer, one coat universal undercoat and two coats high gloss enamel paint on steel. The colour of the Gloss enamel paint shall be Traffic Green unless directed otherwise by the Limpopo Department of Education (not school)</u>			
3	On gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	6
<b>Carried Forward to Summary of Section No. 8</b>			R
Section No. 8 External Works Bill No. 2 Fencing			

Item No		Quantity	Rate	Amount
	<b><u>SECTION NO. 3</u></b>			
	<b><u>BILL NO. 3</u></b>			
	<b><u>WATER TANK, ETC (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	<u>Water Tanks as per DWA Standards.</u>			
1	10 000 Litre polyethylene water tank (Jo Jo make or equivalent). (2980mm high x 2 200mm diameter). Tank complete with 50 x 40 DN nylon bushes sealed into all inlets and outlets. Include for anchorage onto tank stand platform with 4mm diameter galvanized steel wire (bloudraad). (2 Strands/Anchor)	No	6	
	<u>Fabricated steel tank stand with 6m long legs, constructed complete as per details on drawing for 10kl tank</u>			
	<b><u>SITE CLEARANCE</u></b>			
2	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2	112	
3	Stripping average 100mm thick layer of top soil and stockpiling on site	m2	112	
	<b><u>EXCAVATION, FILLING, ETC</u></b>			
	<u>Excavation in earth or compacted platforms not exceeding 2m deep</u>			
4	Trenches	m3	20	
	<b><u>UNREINFORCED CONCRETE, ETC</u></b>			
	<u>25MPa/19mm concrete</u>			
5	Concrete footings	m3	22	
	<b>Carried Forward</b>			
	Section No. 8 External Works Bill No. 3 Water Tank		R	

Brought Forward			R
6	Fabricated steel tank stand with 6m long legs, constructed complete as per details on drawing for 10kl tank	No	6
<u>Outlet and overflow Pipe Schedule</u>			
7	a) 1½" to 50mm MALE ELBOW (Plasson)	No	7
8	b) 50mm Ø HDPE PIPE CLASS 10	No	7
9	b) 50mm Ø HDPE PIPE CLASS 10	m	42
10	c) 50mm Ø PLASSON ELBOW	No	7
11	d) 50mm Ø MALE ADAPTER (Plasson)	No	7
12	f) 50mm Ø x 3000 GMS STAND PIPE	m	21
13	g) 50mm Ø BRASS BALL VALVE (COBRA)	No	7
14	h) 50mm Ø GMS NIPPLE	No	7
15	i) 50mm Ø GMS UNION	No	7
16	k) 50mm Ø GMS PIPE 6000 LONG	No	7
17	l) 50mm Ø GMS ELBOW F/F	No	7
18	m) 50mm Ø GMS STAND PIPE 300 long (400mm long in sandy conditions)	No	7
19	n) 50mm Ø GMS STAND PIPE 700 long	No	7
20	o) 50mm Ø GMS SOCKET	No	7
21	p) 50mm Ø GMS STAND PIPE 150mm	No	7
22	Connect to reticulation	No	7
<u>Inlet pipe schedule (pump)</u>			
23	a) 1½ "TO 40mm MALE ELBOW (Plasson)	No	7
24	b) 40mm Ø HDPE PIPE CLASS 10	m	42
25	c) 40mm Ø PLASSON ELBOW	No	7
Carried Forward			R
Section No. 8 External Works Bill No. 3 Water Tank			

Brought Forward			R
26	d) 40mm Ø MALE ADAPTER (Plasson)	No	7
27	k) 40mm Ø GMS PIPE 6000 LONG	No	7
28	l) 40mm Ø GMS ELBOW F/F	No	7
29	m) 40mm Ø GMS STAND PIPE 300 long (400mm long in sandy conditions)	No	7
30	o) 40mm Ø Galvanised socket	No	7
31	p) 40mm Ø Galvanised standpipe 150 mm long	No	7
<u>Inlet pipe schedule (School)</u>			
32	a) 1½" to 40mm MALE ELBOW (Plasson)	No	7
33	b) 40mm Ø HDPE PIPE CLASS 10	m	42
34	c) 40mm Ø PLASSON ELBOW	No	7
35	d) 40mm Ø MALE ADAPTER (Plasson)	No	7
36	f) 40mm Ø x 3000 GMS STAND PIPE	m	42
37	g) 40mm Ø BRASS BALL VALVE (COBRA)	No	7
38	h) 40mm Ø GMS NIPPLE	No	7
39	i) 40mm Ø GMS UNION	No	7
40	k) 40mm Ø GMS PIPE 6000 LONG	No	7
41	l) 40mm Ø GMS ELBOW F/F	No	7
42	m) 40mm Ø GMS STAND PIPE 300 long (400mm long in sandy conditions)	No	7
43	n) 40mm Ø GMS STAND PIPE 700 long	No	7
44	o) 40mm Ø GMS SOCKET	No	7
45	p) 12 mm Ø X 50mm long S/S bolt and nut	No	7
46	q) 40mm Ø full face gasket (table D)	No	7
47	r) 40mm Ø Brass Gate Valve (COBRA)	No	7
Carried Forward			R
Section No. 8 External Works Bill No. 3 Water Tank			



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Item No		Quantity	Rate	Amount
	<b><u>SECTION NO. 3</u></b>			
	<b><u>BILL NO. 4</u></b>			
	<b><u>STORMWATER, SOIL DRAINAGE AND WATER SUPPLY, ETC (PROVISIONAL)</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles see "Specification of materials and methods to be used - PW371			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers			
	Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers			
	Concrete pipes			
	Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings			
	uPVC pipes, etc			
	Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid			
	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			
	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			
	<b>Carried Forward</b>			
	Section No. 8 External Works Bill No. 4 Stormwater, Soil Drainage and Water Supply		R	

	<p style="text-align: center;"><b>Brought Forward</b></p> <p>other fittings and bushes or reducers he may do so in the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained</p> <p>Exposed concrete surfaces</p> <p>Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chamber, etc shall be finished smooth with plaster</p> <p>Excavations</p> <p>No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling</p> <p>"Soft rock" and "hard rock" shall be as defined in "Earthworks"</p> <p>Laying, backfilling, bedding, etc of pipes</p> <p>Pipes shall be laid and beeded and trenches shall be carefully backfilled in accordance with manufacturers' instructions</p> <p>Where no manufacturerers' instructions exist pipes shaa be laid in accordance with clauses 5.1 and 5.2 of each of the following:</p> <p>SABS 1200 L: Medium pressure pipelines LD: Sewers LE: Stormwater drainage Pipe trenches, etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB: Bedding (Pipes) Unless otherwise described bedding of rigid pipes shall be class B bedding</p> <p><b><u>STORMWATER DRAINAGE</u></b></p> <p><b><u>Site Clearance</u></b></p> <p>1 Clear and grub up vegetation up to 1m wide for pipelines in areas not cleared</p>	<p style="text-align: center;"><b>Carried Forward</b></p> <p>Section No. 8 External Works Bill No. 4 Stormwater, Soil Drainage and Water Supply</p>	<p style="text-align: center;">R</p>	<p style="text-align: center;">R</p>
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Brought Forward			R
<b><u>Trench Excavation</u></b>			
Excavate in all materials for trenches (including intermediate material), backfill and compact to 95% MOD AASHTO Density (100 % if sand) including disposal of surplus materials as directed for:			
<u>V Drain</u>			
<u>15Mpa Unreinforced</u>			
Concrete in Retaining wall trench & Apron/V drain	m3	48	
<u>Manholes</u>			
Construct precast concrete manholes (1.5m ND) complete as details on drawing			
Over	and	up to	
1.5m		2.0m	No 2
2.0m		3.0m	No 1
<u>Connection to septic tank</u>			
Connection to septic tank, manholes and chambers complete including labour and materials to complete connections			
			SUM
<b><u>WATER RETICULATION</u></b>			
<u>Site Clearance</u>			
Clear and grub up vegetation up to 1m wide for pipelines in areas not cleared	m	200	
<b><u>Trench Excavation</u></b>			
Excavate in all materials for trenches (including intermediate material), backfill and compact to 95% MOD AASHTO Density (100 % if sand) including disposal of surplus materials as directed for:			
Water mains up to 110mm diameter for depths			
Over	and	up to	
Carried Forward			R
Section No. 8 External Works Bill No. 4 Stormwater, Soil Drainage and Water Supply			

Brought Forward				R
7	0m	1m	m	200
	<u>Bedding</u>			
8	Selected granular materials		m3	9
9	Selected fill material		m3	9
	<u>Pipework</u>			
	Supply, lay, joint, bed (bedding for flexible pipes) test and disinfect pipes complete with couplings:			
10	40 DN Class 10		m	200
	<u>Pipe Specials</u>			
	Extra-over items D7 for supplying, laying and bedding of specials complete with couplings for:			
	Class 10			
11	40 mm OD 45 deg		No	25
12	40 mm OD 90 deg		No	20
	Tees p.e (FBE coated)			
13	40mm diameter		No	25
	<u>Standpipes</u>			
14	Construct standpipes as per drawing:		No	8
	Connection to elevated water tank			
	<u>Connect to water pipelines including all labour and materials to complete the connections</u>			
15	110mm diameter			SUM
<b>Carried Forward to Summary of Section No. 8</b>				R
Section No. 8				
External Works				
Bill No. 4				
Stormwater, Soil Drainage and Water Supply				

Item No		Unit	Quantity	Rate	Amount
	<b><u>SECTION NO.6</u></b>				
	<b><u>BILL NO.5</u></b>				
	<b><u>BOREHOLE (PROVISIONAL)</u></b>				
	<b><u>PREAMBLE</u></b>				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	<b><u>BOREHOLE SITTING</u></b>				
1	Site Assesment			SUM	
2	Desk Study			SUM	
3	Siting (minimum of three targets)			SUM	
4	Reporting signed by Geohydrologist			SUM	
	<b><u>BOREHOLE DRILLING</u></b>				
	<u>Establishment, plant set-up, inter-borehole moves and de-establishment</u>				
5	Site Establishment	No	1		
6	Mobilisation and set up of plant to/at first borehole	No	1		
7	De-establishment from Site, of the given drilling batch	No	2		
	<u>Drilling: unconsolidated and consolidated sediments and igneous and metamorphic rocks</u>				
	<u>Rotary air percussion</u>				
8	165 mm diameter	m	195		
9	254 mm diameter	m	24		
	<u>Odex drilling, including supply, delivery and installation of at least 6 mm sidewall Odex casing</u>				
10	165 mm diameter	m	195		
	<b>Carried Forward</b>			R	
	Section No. 8 External Works Bill No. 5 Borehole				

	Brought Forward			R	
11	254 mm diameter	m	24		
	<u>Casing, including supply, delivery and installation, but not including reaming</u>				
	<u>Steel casing (plain)</u>				
12	165 mm (state wall thickness here as 3 mm)	m	12		
	<u>Steel casing (slotted)</u>				
13	<u>165 mm (state wall thickness here as 4 mm)</u>	m	6		
	<u>Casing shoes</u>				
14	To fit 165 mm diameter steel casing	m	12		
	<u>Reaming of boreholes</u>				
15	152 / 165 mm to 203 / 219 mm diameter	m	12		
16	Recovery of steel casing		Item		
17	Formation stabiliser, including supply, delivery and installation		Item		
18	Concrete collar, complete per borehole	No	1		
19	Normal Sanitary seal, complete per borehole		Item		
20	Bentonite sanitary seal		Item		
21	Borehole disinfection, complete per borehole	No	1		
22	Borehole protection, complete per borehole	No	1		
23	Borehole marking, complete per borehole	No	2		
24	Site finishing, complete per borehole	No	2		
25	Data recording and reporting, complete per borehole	No	2		
26	Gravel Pack	No	1		
27	Standing time rate	Hrs	2.00		
28	Borehole development	Hrs	4.00		
	Carried Forward			R	
	Section No. 8				
	External Works				
	Bill No. 5				
	Borehole				

	<b>Brought Forward</b>			R	
	<b><u>BOREHOLE TESTING</u></b>				
29	Site establishment			SUM	
30	De-Establishment			SUM	
31	Yield Testing of existing borehole (24 Hours) recommendations, DWA	Hrs	24.00		
32	Yield Testing of existing borehole (24 Hours) recommendations, DWA			SUM	
33	Data capturing of the following: Existing pump type, pump model name and number, discharge (Q) and Pumping Head, Borehole depth, Water rest level, GPS coordinates, Borehole Number			SUM	
34	Signed Geohydrological report/Technical Report compiled by a qualified and registered personnel (DWA Requirements)	Hrs	1.00		
35	Steel borehole cover (sealing of boreholes) per borehole	No	1		
36	Borehole marking per borehole	No	1		
37	Site cleaning/ finishing per borehole	No	1		
	<b><u>BOREHOLE EQUIPPING</u></b>				
	<u>Submersible pumpset and appurtenant fittings</u>				
38	Pump Element(Q=1.2l/sec @ 18 hours per day, H=100m-120m)	No	1		
39	40 DN 'Plasson' compression male adapters	No	1		
40	40mm Class 10 HDPE Type IV riser column	m	145		
41	25mm Class 6 HDPE Type IV borehole dipper tube strapped to riser column at 1.5m centres with 280mm x 7.8mm cable ties and protruding 100mm through borehole cover plate with stop end.	m	145		
42	40mm pressed steel base plate with 26mm diameter hole drilled for dipper tube	No	1		
43	40 DN MGI barrel nipple	No	1		
	<b>Carried Forward</b>			R	
	Section No. 8 External Works Bill No. 5 Borehole				



Brought Forward				R
44	40 DN x 90° MGI female elbow	No	1	
45	40 x 25 DN MGI reducing socket	No	1	
46	25 DN 'Invensys' / 'Kent' domestic water meter (refer to plan HSD1001)	No	1	
47	40 x 25 DN MGI reducing bush	No	1	
48	40mm cobra brass Ball valve	No	1	
49	40 DN x 600mm long galvanised steel pipe piece (threaded both ends)	No	1	
50	Orifice plate (3mm-6mm), manufactured from 304 stainless steel	No	1	
51	25mm Ø PLASSON STOP END FOR DIP TUBE	No	1	
52	4-core submersible electric cable size 4mm <sup>2</sup> (incl. cable ends)	m	145	
53	4mm <sup>2</sup> 4-core armoured PVC SWA PVC 1000V cable (incl. cable ends) and 2.5mm <sup>2</sup> bare copper earth wire complete with danger tape.	m	175	
54	Pratley no.1 cable joint kit for submersible conditions	No	2	
55	7mm diameter Poly Propylene safety Rope	m	145	
56	Watertight CCG box	No	1	
57	Info plate as per data sheet installed in lockable manhole	No	1	
58	Lockable steel manhole complete, cast into concrete, as detailed on	No	1	
59	50mm Brass "key-alike" lock with hardened shackle, complete with 2 keys per set for lockable manhole (thus 2 locks and 4 key-alike keys)			SUM
<b><u>ELECTRICAL PUMP CONTROL</u></b>				
<b><u>ELECTRICAL PUMP CONTROL PANEL</u></b>				
Section No. 8 External Works Bill No. 5 Borehole				
Carried Forward				R

Brought Forward			R
<u>Three Phase Automatic Control Panel</u>			
60	Pump Control Box (655mm high x 540mm wide x 250mm deep)	No	1
61	Motor Scope 0 – 5,6Kw Three Phase Trio Panel	No	1
62	60 Amp T/Pole Isolator ABB 5Ka	No	1
63	60 Amp S/Pole Earth Leakage ABB 5Ka	No	1
64	20 Amp T/Pole Circuit Breaker ABB 3Ka	No	1
65	25 Amp S/Pole C/B ABB 5Ka	No	1
66	Surge arrestor ABB	No	1
67	Wire and accessories:		SUM
68	Pin Lugs 4mm2 Yellow	No	1
69	Pin Lugs 2,5mm2 Blue	No	1
70	Pin Lugs 1,5mm2 Red	m	1
71	Round Lugs 4mm2 Yellow	No	1
72	Cradles	No	1
73	Runlock Straps	No	1
<u>Terminals:</u>			
74	Terminals 10mm Phunix	No	1
75	Terminals Ends Phunix	No	1
76	Terminal Rail	No	1
77	Terminal Stoppers	No	1
78	Self Trapping Screws	No	1
<u>Labels:</u>			
79	In case of emergency	No	1
Carried Forward			R
Section No. 8 External Works Bill No. 5 Borehole			

Brought Forward			R
80	Mains	No	1
81	Pump	No	1
82	Earth Leakage	No	1
83	Plug	No	1
84	Surge Arrestor	No	1
85	Glue	No	1
<u>Control gear:</u>			
86	1 x Float switch	No	1
87	4 x Galvanised Pipes	No	1
88	4 x 4 Socket outlet	No	1
89	Labour to wire control box		SUM
90	COC (Electircal & Mechamical) Certificate After commissioning		SUM
Carried Forward to Summary of Section No. 8			R
Section No. 8 External Works Bill No. 5 Borehole			

## Section No. 8

### External Works

Section No	FINAL SUMMARY	Page No	Amount
1	Preliminaries and Generals	14	
2	Alterations	21	
3	Type - M4	53	
4	Type - SM2	86	
5	Type - GRD4	118	
6	Type - FD3	150	
7	Type - SFD3	182	
8	External Works	204	
	SUB TOTAL (A)		R
	Provide 10% (Ten Percent) on Sub-total (A) as contingency to be deducted in whole or in part if not required		R
	SUB TOTAL (B)		R
	Provision for Value-Added Tax VAT @ 15%		R
	<b>Note:</b> Tenderers must submit their tenders on the official form supplied for this purpose.		
	<b>Carried to Form of Tender</b>		R