PROVINCIAL ADMINISTRATION OF KWAZULU-NATAL
DEPARTMENT OF PUBLIC WORKS

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

BILLS OF QUANTITIES

with GCC for Construction Works - Second Edition 2010

CONTRACTUAL SECTION

ONE VOLUME APPROACH

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

Engineer/Principal Agent
Architronic Architects
P.O. Box 19393
Dormerton
Durban
4091
0312013933 - Tel Number
0312013930 - Fax Number
marvinm@architronic.co.za

Employer:
Head: Public Works
KZN Department of Public Works
Private Bag X 9041
PIETERMARITZBURG
3200
Tel Number: 033 - 8971300
Fax Number: 033 - 8971399

Region:
Regional Manager
KZN Department of Public Works
X54336
Mayville
4091
Tel Number: 031-203 2210
Fax Number: 031-261 5044

Tender Number: **ZNTD05328W**
CIDB Grading: **4GB OR HIGHER**
ECDP Number:

Project Code: **069027**
Document Date: **As Per Tender Advert**

Contracting Party: _____
CIDB Registration number: _____
Central Suppliers Database Registration Number: _____

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

THE TENDER

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IMPORTANT NOTICE TO TENDERERS

Any reference to words Tender or Tenderder herein and/or in any other documentation shall be construed to have the same meaning as the words Tender or Tenderer. These forms are for internal and external use for the KZN Department of Public Works, Provincial Administration of KwaZulu-Natal.

"Quality" shall mean totality of features and characteristics of a product or service that bears on the ability of the product or service to satisfy stated or implied needs.

No alternative Tenders will be accepted.

The Total (Including Value Added Tax) on the Final Summary of the Bill of Quantities must be carried to the "Offer" part only of the Form of Offer and Acceptance - T2.21

"Enterprise" shall mean the legal Tendering Entity or Tenderer who, on acceptance of the Offer, would become the contractor"

Multiple awards of bids will be limited (unless by exception, due to circumstances) in order to spread the work amongst a large number of successful bidders and to minimize the risk to the Department. Multiple awards shall be limited to the ceiling value of the applicable CIDB grading of the recommended bidder, unless the previous contracts awarded, are more than 60% completed in terms of the actual scope of the contract and that the time expended is within the allocated timelines of the contract period of the contract. This is with specific reference to the activities based on the construction programme and concise demonstration has been given that the bidder has the capability and resources to complete the project successfully.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

THE CONTRACT

KWAZULU-NATAL PROVINCE
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eThekwini Region: Empungeni primary school: Storm Damage Phase 16

C1 - AGREEMENT AND CONTRACT DATA

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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eThekwini Region: Empungeni primary school: Storm Damage Phase 16

FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE

Tender No - ZNTD05328W

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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eThekwini Region: Empungeni primary school: Storm Damage Phase 16

C.1.1 - FORM OF OFFER AND ACCEPTANCE

THE OFFER AND ACCEPTANCE FORM IS BOUND INTO **SECTION 1** (See end of Returnable Documents) OF THIS DOCUMENT AS PART OF THE RETURNABLE DOCUMENTS. ONCE A CONTRACT IS CONCLUDED WITH A SUCCESSFUL TENDERER, THIS PAGE WILL BE REPLACED WITH THE FILLED AND SIGNED OFFER AND SIGN ACCEPTANCE BY THE EMPLOYER AND IT WILL BECOME PART OF THE CONTRACT.

PLEASE SUBMIT THE OFFER AND ACCEPTANCE FORM WITH THE OTHER RETURNABLE DOCUMENTS.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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eThekwini Region: Empungeni primary school: Storm Damage Phase 16

C1.2 - CONTRACT DATA

C 1.2 CONTRACT DATA:
with GCC for Construction Works - Second Edition 2010

CONTRACT DATA FOR:

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

Tender no: **ZNTD05328W**

The General Conditions of Contract are the clauses contained in the General Conditions of Contract (2010) (Second Edition) published by the South African Institution of Civil Engineering. Copies of these conditions of contract may be obtained through most regional offices of the South African Institution of Civil Engineering, telephone number 011 805 5947 or by visiting their website at www.saice.org.za.

CONTRACT SPECIFIC DATA
The following contract specific data are applicable to this contract:

CONTRACT VARIABLES

This schedule contains all variables specific to this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of this **agreement.**

Spaces requiring information must be filled in, shown as 'not applicable' or deleted but not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the schedule. Key cross reference clauses are italicised in *[ ]* brackets.
The Engineer/Principal Agent, in accordance with Clause 1.1.1.16, shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties as described in Clause 3.1.2.

Part 1: CONTRACT DATA PROVIDED BY THE EMPLOYER:

PRE-TENDER INFORMATION

CONTRACTING AND OTHER PARTIES

[1.1.1.15] **Employer:**

Head: Public Works (KZN Department of Public Works: Province of KwaZulu-Natal)

Postal address:
Private Bag X 9041
PIETERMARITZBURG
3200

Tel: ***033 - 8971399*** Fax: ***033 - 8971300***

[1.2.1.2] Physical address:
191 Prince Alfred Street
PIETERMARITZBURG
3200

[1.1.1.16] **Employers Agent 1**
Architronic Architects

Agent's service:
Architect

Postal address:
P.O. Box 19393
Durban
4091

Tel: ***0312013933*** Fax: ***0312013930***

Employers Agent 2
GMTA

Agent's service:
Quantity Surveyors

Postal address:
P.O Box 50614
Durban
4062

Tel: ***031 309 2958*** Fax: ***031 309 2985***

Employers Agent 3
[Agents Name]

Agent's service:
[Identify Agent's Service, eg. Engineer]

Postal address:
[P.O. Box number]
[Name of town]
[Code]

Tel: ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***

Employers Agent 4
[Agents Name]

Agent's service:
[Identify Agent's Service, eg. Engineer]

Postal address:
[P.O. Box number]
[Name of town]
[Code]

Tel: ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***

	Employers Agent 5 ***[Agents Name]*** ***Agent's*** service: ***[Identify Agent's Service, eg. Engineer]*** Postal address: ***[P.O. Box number]*** ***[Name of town]*** ***[Code]*** Tel: insert ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***
	Employers Agent 6 ***[Agents Name]*** ***Agent's*** service: ***[Identify Agent's Service, eg. Engineer]*** Postal address: ***[P.O. Box number]*** ***[Name of town]*** ***[Code]*** Tel: insert ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***
	Employers Agent 7 ***[Agents Name]*** ***Agent's*** service: ***[Identify Agent's Service, eg. Engineer]*** Postal address: ***[P.O. Box number]*** ***[Name of town]*** ***[Code]*** Tel: insert ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***
	Employers Agent 8 ***[Agents Name]*** ***Agent's*** service: ***[Identify Agent's Service, eg. Engineer]*** Postal address: ***[P.O. Box number]*** ***[Name of town]*** ***[Code]*** Tel: insert ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***
	PART 1: DATA PROVIDED BY THE EMPLOYER
[1.1.1.13]	**Defects Liability Period** The defects liability period is: **A time measured from the date of the Certificate of Completion.** Defects Liability Period is 12 Months for the whole of the Works
	Latent Defect Period
[5.16.3]	The latent defect period is: 5 years after the Final Approval Certificate
	Documentation required before Commencement of the Works:
[5.3.1]	The documentation required before commencement with the Works execution are;
[4.3]	Health and Safety Plan: The Contractor shall deliver his Health and Safety Plan of the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
[5.6]	Initial Programme: The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.
[6.2]	Guarantee: The Contractor shall deliver his chosen Guarantee (security) for this Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
[8.6]	Insurance: The Contractor shall deliver his insurance for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Cash flow by contractor: The Contractor shall deliver his Cash flow for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Priced Bill of Quantity: The Contractor shall deliver his Priced Bill of Quantity with his initial tender submission.
	Programme: The Contractor is required to submit his Programme of Works in terms of Clause 5.6.1 and 5.3.1 and the Principal Agent is required to approve this within 7 days in terms of Clause 5.6.3
	Other requirements:
[5.3.2]	The time to submit the documentation required before commencement with Works execution is: 14 calendar days

	Non-Working days
[5.8.1]	Non-Working days: **Sundays** Special non- working days: **All Nationally Recognized Public Holidays and the year end break**
[5.8.1]	First Year end break - commences: ***15-Dec-23*** ends on: ***08-Jan-24*** Second Year end break - commences: ***N/A*** ends on: ***N/A*** Third Year end break - commences: ***N/A*** ends on: ***N/A*** Fourth Year end break - commences: ***N/A*** ends on: ***N/A***
	Engineer/Principal Agent to consult with Employer
[3.1.3]	The Engineer shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties.
	Security
[6.2.1]	The time to deliver the deed of guarantee is Prior to site hand over in terms of clause 5.3.1 and 5.3.2.
[6.2.1]	Please see CONTRACT DATA - below to select Guarantee Option
	Commencement Date
	Commencement date means the date of Site Hand over that should not occur prior to the tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance.
	*The **Agreement comes into effect** on the date when;* *The tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any)* *The agreement ("this document") consists of;* *1. Agreement and Conditions of Contract.* *2. Form of Offer and Acceptance.* *3. Contract Data.* *4. Scope of Works.* *5. Site Information.* *6. Drawings & documents referred to in the **1 to 4 above.*** *(See Form of Offer and Acceptance)*
[5.3.1]	The contractor shall commence executing the Works within 7 calendar days from the Commencement Date.
[5.4.1]	***Possession of the site*** will be given within 10 calendar days after the **contractor** has fulfilled the conditions (4.3, 5.6, 6.2, 8.6) and received the notification from the Employer of Site Hand Over where the contractor will receive one fully signed copy of the Form of Offer and Acceptance from the **employer.**
[5.6.1]	The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.
	CONTRACT DETAILS
[1.1.1.33]	***Works*** description: Refer to document C3 – Scope of Work.
[1.1.1.30]	***Site*** description: Refer to document C4 – Site Information.
	Specific options that are applicable to a **State** organ only Where so :
[6.10.6.2]	*1)* Interest rate legislation: ***(a)*** in respect of interest owed by the **employer**, the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and ***(b)*** in respect of interest owed to the **employer**, the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999), will apply
	2) Lateral support insurance to be effected by the contractor: — *Yes* / *No X*
	3) Payment will be made for materials and goods — *Yes X* / *No*
	4) Dispute resolution by litigation — *Yes* / *No X*
	5) Extended **defects** liability period applicable to the following elements: — ***All works (12 months)***
[8.6.1.1.2]	The Value of material, supplied by the Employer, and not included in the Contract Price, is: ***R0,00***
[8.6.1.1.3]	The amount to cover Professional Fees, not included in the Contract Price, for repairing damage and loss to be included in the insurance: ***30% of the Contract Price***
[8.6.1.3]	The limit for indemnity for liable insurance is: ***Unlimited***
[6.5.1.2.3]	The percentage allowance to cover overhead charges for contractor and subcontractors, is: ***33,30%***
[1.1.1.14]	**Practical Completion Date** The Practical Completion date is: **8 Months after contractual commencement date**
	For the **works** as a whole: The whole of the works shall be completed within: ***8*** *Months (which shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods).*
[5.5.1]	The date for **practical completion** shall be ***To be determined***
[5.13.1]	The penalty per calendar day shall be : ***0.04% of the Contract Price, rounded to the nearest R10***

	***For the* works** in **sections:**
	***The date for* practical completion** from the **commencement date** and the **penalty** per **calendar day:**
	Portion 1:
[5.5.1]	***N/A***
[5.13.1]	***N/A***
	Portion 2:
[5.5.1]	***N/A***
[5.13.1]	***N/A***
	Portion 3:
[5.5.1]	***N/A***
[5.13.1]	***N/A***
	Portion 4:
[5.5.1]	***N/A***
[5.13.1]	***N/A***
	Portion 5:
[5.5.1]	***N/A***
[5.13.1]	***N/A***
	Portion 6:
[5.5.1]	***N/A***
[5.13.1]	***N/A***
[1.3.2]	***The* law** applicable to this **agreement** shall be that of the: **Republic of South Africa**
[6.10.1.5]	The percentage advance on materials not yet built into the Permanent Works is: ***80,00%***
[6.10.3]	Percentage retention on amounts due to contractor is: ***The Percentage retention on the amount due to the contractor is 5% to a limit of 5% of the contract sum.***
	Maximum retention is: ***5,00%*** *of the Contract Price*
[6.8.1]	Notwithstanding anything to the contrary contained in the General conditions of Contract and Preliminaries, this contract could only, when the construction period exceeds 6 months **and** the contract exceeds R1,000,000.00, be subject to a Contract Price Adjustment Factor.
[6.8.2] *[6.8.3]*	Clause 6.8.2 the last part of the sentence saying *"calculated according to the formula and the conditions set out in the Contract Price Adjustment Schedule."* must be replaced by *"calculated according to the Contract Price Adjustment Provisions (CPAP) Indices Application Manual for use with P0151 indices (Revised 1 January 2013)" as published by Statistics South Africa. The Contract Price Adjustment Provision (CPAP) will be subject to the most recently released indices by Statistic South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Head: Public Works will not accept the submission by Tenderers of lists of additional items."*
[6.8.2] *[6.8.3]*	Where this contract is a Lump Sum contract, the contract will only be subject to Contract Price Adjustment Provisions (CPAP)(Revised 1 January 2013) where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings only.
[5.14.5]	***The following clause must be added to clause 5.14.5:***
	[5.14.5.6] The employers agent shall submit the **final account** within 3 calendar months to the principal agent.
[10.5]	The determinations of disputes shall be by ARBITRATION ONLY.
[10.5.3]	The number of Adjudication Board Members to be appointed is: **One**
[10.9.1]	Replace the last part of the clause with the following: *"..on the application of either party, by the Chairman, or his nominee of the Association of Arbitrators."*
	Where* CPAP** is applicable, the **contract sum** will be adjusted in accordance with the Contract Price Adjustment Provisions (**CPAP**) as set out in the **CPAP** Indices Application Manual as published by Statistics South Africa, dated 1 January 2013 and any amendments thereto: 1) Glass etc. measured in specialist section Metalwork, will be adjusted in terms of the index for that work group unless specifically stated otherwise in the bills of quantities. 2) In case of uninterruptible power supplies, elevators, escalators and hoists, generating sets, motor-alternator sets and intercommunication systems shall be adjusted in accordance with Work Group 170. 3) Further to clause 3.4.6 of the CPAP Indices Application Manual, the listing of additional items for exclusion by Tenderer's, will not be permitted. ***Alternative Indices: **Not Applicable**
	Details of changes made to the General Conditions of Contract for construction works (2010) Second Edition
	Clause
[1.1]	*[1.1.1.5]* **COMMENCEMENT DATE – means the** actual date of Site Hand over that should not occur prior to the Tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance.
	[5.12.2.2] **ABNORMAL CLIMATIC CONDITIONS** - means conditions over and above what could reasonably be expected for the specific locality where the Works are being executed and include inter alia excessive rain, heat, cold, wind and any other climatic condition that would not normally be experienced during the season that the Works are executed in that area. The South African Weather Service's (http://www.weathersa.co.za) 10 year average climatic conditions statistics would be what could be reasonably expected for the specific locality where the Works are executed.
	[6.2.1] **CONSTRUCTION GUARANTEE – means an on demand guarantee at call obtained by the contractor** from an institution approved by the **employer** in terms of the **employer's** construction guarantee form as selected in the Offer and Acceptance Form and the **contract data.**
	CONSTRUCTION PERIOD – means the period commencing on the **commencement date** and ending on the date of **due completion date.** This period will be deemed to commence on actual site hand over date to the contractor and end on the date of practical completion and shall include all annual industrial holiday periods, Sundays and public holidays.
	CORRUPT PRACTICE – means the offer, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
	FINAL ACCOUNT - The document prepared by the principal agent, which reflects the contract value of the works at final approval or termination.
	FRAUDULENT PRACTICE – means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practise among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.

	INTEREST – the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be in terms of the legislation of the Republic of South Africa, and in particular: (a) in respect of interest owed by the **employer,** the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and (b) in respect of interest owed to the employer, the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999), will apply

	[1.1.1.16]	**ENGINEER/PRINCIPAL AGENT –** means the person or entity appointed by the **Employer** and named in the **Contract Data** as the **Engineer /Principal Agent** to act as agent of the **Employer.** In the event of an Engineer/**Principal Agent** not being appointed, then all the duties and obligations of an Engineer/**Principal Agent** as detailed in the **Contract** shall be fulfilled by a representative of the **Employer** as named in the **Contract Data. (Hereafter referred to as Engineer)**
	[1.1.1.21]	**GENERAL ITEMS** - or preliminaries means items stipulated in the Pricing Data relating to general obligations, site services, facilities and/or items that cover elements of the cost of the work which are not considered as proportional to the quantities of the Permanent Works.
	[4.4.1]	Add the following to the clause 4.4.1: *"The Contract shall only use subcontractors who are duly registered with the CIDB and who has an ACTIVE status at the time of submitting the tender"*
	[6.2.1]	Refer to Offer and Acceptance form for the various options that the contractor may choose from in providing a form of **Guarantee** under "GUARANTEE OPTIONS".
	[6.10.6.2]	Replace *"at the prime overdraft rate, as charged by the Contractor's Bank,"* with *"..at the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975). "* Omit *",on all overdue payments from the date on which the same should have been paid..." and replace with " only after 30 calendar days from receiving written notice from the Contractor that the amount is overdue,.."*
	SPECIAL CONDITIONS OF CONTRACT	
[5.12.3]	Omit clause 5.12.3 and add the following: *"5.12.3. If an extension of time is granted, the Contractor shall be paid such additional time-related General Items, including for special non-working days, if applicable as are appropriate regarding to any other compensation which may already have been granted in respect of the circumstances concerned. The reasons for extension of time that would invoke payment of time related General Items are inter alia;* *5.12.3.1 Failure to give possession of the site to the contractor.* *5.12.3.2 Making good physical loss and repairing damage to the works where the contractor is not at risk.* *5.12.3.3 Contract instructions not occasioned by default by the contractor.* *5.12.3.4 Failure to issue construction information timeously or the late issue of a contract instruction following a request from the contractor.* *5.12.3.5 Late acceptance by the principal agent of a design undertaken by a selected subcontractor where the contractor's obligations have been met.* *5.12.3.6 Suspension or cancellation termination invoked by a nominated or selected n/s subcontractor due to default by the employer or the principal agent.* *5.12.3.7 Insolvency of a nominated subcontractor.* *5.12.3.8 A direct contractor.* *5.12.3.9 Opening up and testing of work and materials and goods where such work is according to in accordance with the contract documents.* *5.12.3.10 The execution of additional work for which the quantity included in the bills of quantities is not sufficiently accurate.* *5.12.3.11 Late or failure to supply materials and goods for which the employer is responsible.* *5.12.3.12 Suspension of the works."*	
[5.14.5.1]	Omit entire clause 5.14.5.1	
[5.16.4]	Add the following new clause *"5.16.4. Upon the issue of a Final Approval Certificate, unless otherwise provided in the Contract:* *5.16.4.1. The performance Guarantee (if any) shall be returned within 14 days to the guarantor in terms of Clause 7."*	
[6.2.2]	Replace the following *"..it shall be deemed that the Contractor has selected a security of ten percent retention of the value of the Works."* with *"..it shall be deemed that the Contractor has selected a security of a bank or insurance guarantee of 5% of the value of the Works and a payment reduction of 5% of the value certified in the payment certificate excluding value added tax."*	
[6.2.3]	Add to clause 6.2.3 the following *"The Contractor shall provide proof of paid-up premium payments to accompany his payment certificate as proof that his performance guarantee has not expired yet. The Contractor will not receive payment without proof of the validity of their performance*	
[9.3.2.2]	Omit *"without prejudice to the exercise of any lien the Contractor may have acquired over the Employer's property."*	
	Duties and functions of the **Engineer** requiring the specific approval of the **Employer** BEFORE execution of any part of these duties are as follows:	
	(a)	Determinations of contractors claims for extension of time (revision of the contract completion date). All claims for extension of time shall be submitted by the **Engineer,** together with the **Engineer's** recommendations, to the **Employer** for determination. Omit "Engineer" in clause 42.2 and replace with "Employer".
	(b)	Drawings, instructions or communications of any kind requiring variations of the works and involving Extra's shall NOT be given effect by the **Contractor** UNTIL BOTH the "Official Variation Order" and the "Financial Request for Variation Order and Additional Funds" form, as issued by the Department of Public Works, have been approved and signed by the **Employer.**
	(c)	Insurance policies to be approved by the **Employer** within 21 days of the date of the **Commencement** of the Works.
	(d)	Any notice of disagreement raised by the **Contractor** or written Dispute Notice given by the **Contractor** to the **Engineer** shall be submitted by the **Engineer,** together with the **Engineer's** recommendations, to the **Employer** for determination.
	(e)	The issue of the certificate of practical completion, certificate of completion and the final approval certificate shall be signed and submitted by the **Engineer,** to the **Employer** for final approval and signature. The certificates shall not be considered as officially issued until signed by the **Employer.**
	MANAGING PROJECT DURATION	
	(a)	The Contractor shall co-ordinate his programme with all other contractors whose work may precede or be executed simultaneously to his own. The Contractor will be called upon to plan and control the project using the Project Evaluation and Review Technique (PERT) or other approved Critical Path Method (CPM) network analysis of his events and activities and those of the dub-contractors in his employ and must co-ordinate his planning with any other contractor employed on the project. A fortnightly project control report will be expected from the Contractor in writing, evaluating any gains or delays against the critical path and he should allow for all costs involved in planning reviewing and updating the programme to the satisfaction of the Principal Agent against this item.
	(b)	Activity-and total float shall belong to the Employer.
	(c)	The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date. It is a condition of this contact that, the contractor submit to the Engineer/principal agent a detailed CPM Programme which shall be to the approval of the Engineer/principal agent. In this regard tenderers are advised to consult with the Engineer/Principal Agent as to the format and requirements of the programme as no claim whatsoever will entertained should the programme fail to meet the requirements of the Engineer/Principal Agent. Failure to submit the programme within the stipulated time may result in the contractor being held in breach of contract. The approved programme will form the basis of time management of the project and extension of time will not be guaranteed unless the Contractor has strictly complied with this provision. The programme shall make allowance for rain and the number of rain days allowed within the critical path shall be on the provisions of the clause dealing with inclement weather and claiming for delays in performance in this bill. Allowance for the above must be made under this item as no claims for failing to comply with this precondition will later be entertained.

INCLEMENT WEATHER AND CLAIMS FOR DELAYS IN PERFORMANCE

(a) The Contract Sum includes a monthly allowance of 3 working days inclement weather during which rainfall exceeds 10mm per day for months as indicated in the Scope of Works. These days shall be reflected on the critical path of the Contractor's programme as specified in MANAGING PROJECT DURATION above.

(b) Claims for delays in performance due to inclement weather shall be calculated separately for each calendar month and for the project as a whole. Delays or gains to the critical path shall be reflected in all revisions of the programme. An extension of time will only be granted where the following conditions are met:

(i) The criteria to be used for WORK stoppages shall be for safety hazards or poor quality of work.
(ii) The Employer's site representative or the Employer's Principal Agent, if the site representative is not available shall be notified when the Contractor stops the work and intends to claim performance delays. The Employer representative shall inspect the situation together with the Contractor and give an immediate decision.

1. The stoppage claimed must cause a delay in the Completion Date of work. If the critical activities can proceed and a non-critical activity is delayed due to inclement weather no claims for delay shall be granted.
2. No claims for stoppages less than 2(two) hours per day shall be considered.
3. Claims granted for more than 2 (two) hours, but less than 10 (ten) hour (lunch included) day, shall be added together and expressed as full days.
4. All claims shall be submitted in writing to the Principal Agent within one working day of the actual stoppage.
5. The total delay in performance granted to the Contractor expressed in days shall be added to the contractual Completion Date of each section of the Works. The contractual penalty clause shall only come into effect after this newly arrived date.
6. Total delays (in hours) will be rounded up or down to the nearest integer for the calculation of Working Days. The total hours (including lunch) per Working Day shall be 10 unless otherwise indicated on the Contractor's programme.
7. Where the programmed delays for inclement weather exceed the actual delays incurred the Completion Date(s) will not be adjusted.
8. Where the project includes builder's holidays the programmed durations for inclement weather shall be adjusted pro-rate to the actual Working Days.
9. The total of all monthly delays due to inclement weather shall be calculated in accordance with the example given below:

Description		Months					Total
		Sept	Oct	Nov	Dec	Jan	
		Hours	Hours	Hours	Hours	Hours	Hours
Programmed	Rain days	0	30	30	15	15	90
Actual	Rain days	16	22	35	15	18	106
Difference		-16	8	-5	0	-3	-16
8 hrs/day*						Estimated Extension of time - in working days	2

See point 5.2 in the Scope of Works for the specific days the tenderer must allow for in this contract.

Tender no:	ZNTD05328W	Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR:

POST-TENDER INFORMATION

Note: All information for this section requires consultation with the **Contractor**. The **Engineer/Principal Agent** shall not pre-select any of the alternatives available to the **Contractor.**

1 CONTRACT DETAILS

[1.1.1.9] **Contractor Name:**

[1.2.1.2] Postal address:

Tel no Fax no

Tax / VAT Registration No: e-mail

Physical address:

[1.1.1.10] The accepted **contract price** inclusive of **tax** is R :

[Amount in words]

Payment Of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)

The preliminaries amounts shall be paid in terms of:

***Alternative A**	**Yes**
****Alternative B**	**N/A**

** Assessed by the Engineer/Principal Agent as an amount prorated to the value of the Work duly executed in the same ratio as the Preliminaries bears to the Contract Price excluding VAT, Preliminary amount, Contingencies and any CPAP.*

*** Calculated from the priced Bill of Quantity/Lump Sum document. The Contractor and the Engineer/Principal Agent shall agree on a division of the priced Preliminaries items into: initial establishment charge, monthly charge and final disestablishment charge.*

If the Contractor and the Engineer/Principal Agent can not agree, within 10 Working Days from the Commencement Date, on such a division then the Engineer/Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;

10% of the General Items/Preliminaries amount shall not be varied

15% of the General Items/Preliminaries shall only be varied in proportion of the Contract Price to the Contract Sum

75% of the General Items/Preliminaries shall be varied in proportion to the revised Construction Period compared with the initial Construction Period.

Adjustment of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)

Alternative A

For the adjustment of Preliminaries both the Contract Sum and the Contract Value (including tax) shall exclude the amount of Preliminaries, all Contingency Sum(s) and any provision for Cost Price Adjustment Provisions:-

- An amount which shall not be varied.

- An amount varied in proportion to the contract value as compared to the Contract Sum.

- An amount varied in proportion to the Construction Period as compared to the initial Construction Period (excluding revisions to the Construction Period to which the Contractor is not entitled) to adjustment of the Contract Value in terms of the agreement.

The Contractor shall provide a breakdown of charges (including tax) within 15 working days of the date of acceptance of tender and, where applicable, an apportionment of Preliminaries per section

If the Contractor and the Principal Agent cannot agree, within ten (10) Working Days from the Commencement Date, on such a division then the Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;

10% of the amount shall not be varied

15% varied in proportion of the Contract Value to the Contract Sum

75% varied in proportion to the revised Construction period compared with the initial Construction Period

Sectional Completion : Subdivision of Preliminaries Costs

For the adjustment of preliminaries for sections of the work the value of fixed, value, and time related amounts of the preliminaries for each section is required. The contractor is to provide such information within fifteen (15) working days of taking possession of the site, failing which the categorised preliminaries amounts shall be prorated to the value of each section.

The above shall apply equally for projects where sectional completion was not contemplated at tender stage but subsequently occurred on an adhoc basis during construction of the works as agreed between the client and the employer. The original priced categorised amounts for fixed, value, and time related amounts shall be prorated to the value of each section.

When an extension of time has been granted in terms of the GCC and the preliminaries require to be adjusted accordingly, the pertinent sectional (subdivided) categorised preliminaries amounts shall be utilised, where applicable and not the overall preliminary amounts.

Where sectional completion is required in terms of the agreement, the Contractor shall provide the Principal Agent with the division of the above categorized amounts into sections. Should the Contractor fail to provide such information within the period stipulated the categorized amounts shall be prorated to the value of each section.

YES *yes / no*

or

Alternative B

The Contractor shall within 15 working days of the date of possession of the site provide the Principal Agent with a detailed breakdown of Preliminaries amounts for the works as a whole, or per section where applicable, including administrative and supervisory staff charges and for the use of construction equipment in terms of the programme.

NO *yes / no*

The contractor is informed that only option 'A' shall apply

2 DOCUMENTS

Contract documents marked and annexed hereto:

Priced Bills of Quantities: **Yes** **No**

Lump Sum document: : **Yes** **No**

Guarantee Options:

Not applicable

2.2 DESIGN BRIEF

Not applicable — **YES or NO**

2.3 DRAWINGS — **YES or NO**

See list of drawings/Annexure's attached to this document. — **YES or NO**

2.4 DESIGN PROCEDURES — **YES or NO**

Not applicable

Contract drawings: **Yes** **No**
Other documents:

	Waiver of the Contractors lien or right of continuing possession is required.	YES	

GUARANTEE OPTIONS

The Tenderer agrees to provide a bank or insurance guarantee in accordance with clause 6.2.3 of the Conditions of the GCC2010 Contract within the period stated in the Contract Data. This guarantee shall be for a sum equal to an amount stated in the Contract Data.

Guarantees submitted must be issued by either an Insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act No 94 of 1990, on the pro-forma referred to above. No alterations or amendments of the wording of the pro-forma will be accepted.

(a) the tenderer accepts that in respect of contracts up to R1 million, a payment reduction of 5% of the contact value will be applicable and will be reduced by the Employer in terms of the applicable conditions of contract.

(b) In respect of contracts above R1 million, the Tenderer offers to provide security as indicated below: select one option

(i) cash deposit of 10 % of the Contract Price	
(ii) bank or insurance Performance Guarantee of 10 % of the Contract Price	
(iii) cash deposit of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)	
(iv) bank or insurance guarantee of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)	

NOTE: Where the Tenderer has not selected one of the guarantee options above, the default option will be as if the Tenderer has selected a security of a bank or insurance guarantee of 5% of the value of the Works and a payment reduction of 5% of the value certified in the payment certificate excluding value added tax. - See GCC2010 clause 6.2.2 as amended in Contract Data.

3 SIGNATURES OF THE CONTRACTING PARTIES

Thus done and signed at.....on .....of.....20.....

Name of signatory — for and behalf of the **Employer** who by signature hereof

Capacity of signatory — as Witness.

Thus done and signed at.....on .....of.....20.....

Name of signatory — for and behalf of the **Contractor** who by signature hereof

Capacity of signatory — as Witness.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

C1.3 - FORM OF GUARANTEE

C1.3 PERFORMANCE GUARANTEE - GCC FOR CONSTRUCTION WORKS (2nd Edition - 2010)

Head: Public Works
KZN Department of Public Works:
Private Bag X 9041
PIETERMARITZBURG
3200

Sir,

ON DEMAND PERFORMANCE GUARANTEE

Tender Number ZNTD05328W	Project Code 069027

For use with the General Conditions of Contract for Construction Works, Second Edition, 2010.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: _____

Physical Address: _____

"Employer" means: The Provincial Administration of KwaZulu-Natal in its Department of Public Works

"Contractor" means: _____

"Engineer" means: _____

"Works" means: **eThekwini Region: Empungeni primary school: Storm Damage Phase 16**

"Site" means: _____

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of: _____

Amount in Words:

"Guaranteed Sum" means: The maximum aggregate amount of: 10% _____
Of Contract Sum

Amount in Words: _____

"Expiry Date" means: _____

CONTRACT DETAILS

Engineer Issues: Interim Payment Certificates, Final Payment Certificates and the Certificate Completion of the Works as defined in the Contract.

PERFORMANCE GUARANTEE

1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2 The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3 The Guarantor hereby acknowledges that:

3,1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3,2 its obligation under the Performance Guarantee is restricted to the payment of money.

4 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4,1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4,2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4,3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum Certified in 4.

5 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5,1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5,2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and

5,3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7 Where the Guarantor has made payments in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Payment Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8 Payment by the Guarantor in terms of 4 or 5 shall be made with seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9 Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.

10 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

11 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

12 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

13 This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

14 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Court Act No 32 of 1944, as amended, to this jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at _____

Date _____

Guarantor's signatory (1) _____

Capacity _____

Guarantor's signatory (2) _____

Capacity _____

Witness signatory (1) _____

Witness signatory (2) _____

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

PART C2 - PRICING DATA

C2.1 PRICING INSTRUCTIONS GCC FOR CONSTRUCTION WORKS (Second Edition 2010)			
Project title:	eThekwini Region: Empungeni primary school: Storm Damage Phase 16		
Tender no:	ZNTD05328W	Project Code:	069027

C2.1 Pricing Instructions

Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")

The adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories by insertion of "F", "V", "T" as the case may be against the price in the "rate" column immediately preceding the "amount" column, where "F" denotes a fixed amount (amount not varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount variable in proportion to time.

1 **MASSES AND MEASURING UNITS**

These shall be in accordance with the Measuring Units and National Measuring Standards Act No. 76 of 1973 and amendments thereto.

The pages of each of these documents are numbered consecutively and before the Tenderer submits his tender he should check the number of pages, and if any are found missing or duplicated, or the figures or writing indistinct, or the documents contain any obvious error, he should apply to the Head : Public Works AT ONCE and have same rectified as no liability whatsoever will be admitted by the Administration in respect of errors in Tender due to the foregoing.

2 **PRICES FOR VARIATIONS**

Where prices or quotations for variations are submitted by the Contractor during the currency of the Contract, it is to be clearly understood that these are for the purpose of consideration by the Head : Public Works and that there is no assumption of acceptance. The Contractor will be notified of acceptance of prices or quotations either by insertion of the amount on the variation order or by written intimation.

3 **SCALE**

The scale to which the Drawings are made is only to be made use of when no figured dimensions are given either on the Drawings or in the tender documents and the figured dimensions are always to be followed though they may not coincide with the scale of the Drawings, but dimensions where possible are to be taken from the buildings.

4 **PROVISIONAL ITEMS**

All items described as "Provisional" shall be used as directed by the Employer and measured and valued or paid for.

No work for which "Provisional" items are allowed shall be commenced without written instructions from the Head : Public Works.

5	**TIMELY ORDERING OF MATERIALS** The Contractor is warned to place all orders for materials or special articles as early as possible, as he will be held solely responsible for any delay in the delivery of such goods. Nevertheless this tender is conditional upon no liability being attached to the Contractor if delivery of materials is rendered impossible by reason of any act of the Government.
6	**ELECTRICAL LIGHTING, POWER AND WATER** The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Employer. The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed. Tenderers are advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.
7	**IMPORT PERMITS, DUTIES AND SURCHARGES.** All tenders by means of which imported products are being called for, must use the rate of exchange 14 days prior to the closing date indicated in the tender documents. If this day falls on a weekend or public holiday, the next working day must be used. Furthermore, Tenderers must submit documentary proof (in the form of a certified copy) from their bank or legally recognised financial institution, clearly indicating what the rate of exchange was 14 days prior to the closing date, as mentioned above. Together with this, the Tenderer must confirm that the tender price relating to an imported product, was based on the rate of exchange 14 days prior to the closing date as mentioned above.
8	**STANDARD SYSTEM OF MEASUREMENT WHERE BILLS OF QUANTITIES FORM PART OF THE TENDER DOCUMENTS** The work executed under this Contract has been measured in accordance with the; **Standard System of Measuring Builders Work (7th Edition)** including all amendments unless descriptions of items indicate a deviation and it shall be understood that the system of measurement which is herein adopted is the only system of measurement which will be recognised in connection with this contract. Any contradictions to this system of measurement contained in the "Model Preambles for Trades 2008" shall be disregarded (unless same have been accommodated in the system of measurement) but applicable rates shall be included for all requirements stated and not measured separately in compliance with this system.
9	**PRICING OF ROCK EXCAVATIONS** It is a condition of this tender that should the tenderer elect to price the Rock Excavation included in this tender, the rates must be market related and should be identically priced for the same classification of excavations and not vary for similar billed items in the different sections.

10 BROAD BASED BLACK ECONOMIC EMPOWERMENT

1. It is the deliberate policy of the Provincial Administration of KwaZulu-Natal to foster and to encourage the economic empowerment of Black South Africans. This policy will be implemented without prescription and without prejudicing the principles and the integrity of the Provincial Administration of KwaZulu-Natal. Subject to these constraints and also subject to good business practise and commercial consideration, it is therefore considered appropriate that the Provincial Administration of KwaZulu-Natal should encourage business relationships with companies which actively pursue Affirmative Action and Black Economic Empowerment Programmes.
2. In responding to this tender you are therefore encouraged to devote attention to these two subjects of Affirmative Action and Economic Empowerment. In addition, in considering the appointment of sub-contractors, you are requested to extend the spirit of these policies.
3. The foregoing enunciations of this policy are not intended to be prescriptive nor to preclude any individual or operation from responding to this tender.

11 REGISTRATION ON THE CENTRAL SUPPLIERS DATABASE

1. In terms of the Public Finance Management Act (PFMA), 1999 (Act No 1 of 1999) Section 38 (1) (a) (iii) and 51 (1) (iii) and Section 76 (4) of PFMA National Treasury developed a single platform, The Central Supplier Database (CSD) for the registration of prospective suppliers including the varification functionality of key supplier information.
2. Prospective suppliers will be able to self - register on the CSD website: www.csd.gov.za
3. Once the supplier information has been varified with external data sources by National Treasury a unique supplier number and security code will be allocated and communicated to the supplier. Suppliers will be required to keep their data updated regularly and should confirm at least once a year that their data is still current and updated.
4. Suppliers can provide their CSD supplier number and unique security code to organs of state to view their varified CSD information.
5. Tenderers are required to fill in clearly, legibly, in bold print and black ink their CSD supplier number in the space hereunder:

Name of Supplier	
Central Supplier Database (CSD) Supplier Number:	

12 TAX CLEARANCE REQUIREMENTS

It is a condition of tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Tenderder's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance, during the project, which is required to process your payment certificates.

1. In order to meet this requirement tenderers are required to apply via e-filing at any SARS branch office nationally. The Tax Complance Status (TCS) requirements are also applicable to foreign Tenderders / individuals who wish to submit Tenders.
2. SARS will then furnish the Tenderder with a Tax Compliance Status (TCS) PIN that will be valid for a period of 1 (one) year from the date of approval.
3. In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN.
4. Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za.

	5 Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.	
	6 Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.	
	Security PIN Number	
	Company / Entity Tax Reference Number	

13 BILLS OF QUANTITIES/LUMP SUM DOCUMENT

The Bills of Quantities document forms part of and must be read and priced in conjunction with all the other documents forming part of the contract documents, the Standard Conditions of Tender, Conditions of Contract, Standard Preambles to all Trades, Specifications, Drawings and all other relevant documentation.

14 VALUE ADDED TAX

The tender price must include for Value Added Tax (VAT). All rates, provisional sums, etc. in the Bills of Quantities must however be net (exclusive of VAT) with VAT calculated and added to the Total Value thereof in the Final Summary.

15 FIXED PRICE CONTRACT

Should the Bills of Quantities/Lump Sum Document be a fixed price contract, the following clause must be inserted in the Pricing Instructions:

Tenderers are to take note that the contract price adjustments are not applicable to this contract. Tenderers should therefore make provision in the Contract Sum, schedule of rates, etc. for possible price increases during the contract period, as no claims in this regard shall be entertained.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

C2.2 - Preliminaries for GCC for Construction works - 2nd Edition 2010

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

BILL NO. 1
C2 .2 PRELIMINARY AND GENERAL

	NOTES	UNIT	QUANTITY	RATE	AMOUNT
i)	The agreement is to be the General Conditions of Contract for Works of Civil Engineering Construction (2010) (Second Edition) , published by the S. A. Institution Of Civil Engineering.				
ii)	The Preliminaries are to be the Construction and management requirements for works contracts - Part 1: General engineering and construction works (SANS 1921-1: 2004 Edition 1) prepared by Standards South Africa and shall be deemed to be incorporated herein.				
iii)	Tenderers are referred to the abovementioned documents for the full intent and meaning of each clause thereof (hereinafter referred to by heading and clause number only) for which such allowance must be made as may be considered necessary.				
iv)	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.				
v)	Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable").				
vi)	Adjustment of the preliminaries: each item priced, is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time.				
vii)	Time (T) related Preliminaries will only be adjusted for omissions or additions, issued by the Employer, or delays caused by the Employer, for which variation and extension of time has been granted. ***See Contract Data*** .				
	SECTION A: GENERAL CONDITIONS OF CONTRACT				
A1	General (clause 1) F:..... V:..... T:.....	Item			
A2	Basis of Contract (clause 2) F:..... V:..... T:.....	Item			
A3	Engineer (clause 3) F:..... V:..... T:.....	Item			
A4	Contractor's General Obligation (clause 4) F:..... V:..... T:.....	Item			
A5	Time and Related Matters (clause 5) - As referred to in the Contract Data under Special Condition of Contract. The Contract Period shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
A6	Payment and Related Matters (clause 6) F:..... V:..... T:.....	Item			
A7	Quality and Related Matters (clause 7) F:..... V:..... T:.....	Item			
A8	Risk and Related Matters (clause 8) F:..... V:..... T:.....	Item			
A9	Termination of Contract (clause 9) F:..... V:..... T:.....	Item			
A10	Claims and Disputes (clause 10) F:..... V:..... T:.....	Item			
	SECTION B: SANS 1921-1:2004 (Edition 1): CONSTRUCTION AND MANAGEMENT REQUIREMENTS FOR WORKS CONTRACTS: PART 1 **Refer to the SCOPE OF WORK for detail requirements:**				
B1	Scope F:..... V:..... T:.....	Item			
B2	Normative references F:..... V:..... T:.....	Item			
B3	Definitions F:..... V:..... T:.....	Item			
B4	Requirements for construction and management F:..... V:..... T:.....	Item			
B4.1	General F:..... V:..... T:.....	Item			
B4.2	Responsibilities for design and construction F:..... V:..... T:.....	Item			
B4.3	Planning, programme and method statements F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
B4.4	Quality assurance F:..... V:..... T:.....	Item			
B4.5	Setting out F:..... V:..... T:.....	Item			
B4.6	Management and disposal of water F:..... V:..... T:.....	Item			
B4.7	Blasting F:..... V:..... T:.....	Item			
B4.8	Works adjacent to services and structures F:..... V:..... T:.....	Item			
B4.9	Management of the Works and site F:..... V:..... T:.....	Item			
B4.10	Earthworks F:..... V:..... T:.....	Item			
B4.11	Testing F:..... V:..... T:.....	Item			
B4.12	Materials, samples and fabrication drawings F:..... V:..... T:.....	Item			
B4.13	Equipment F:..... V:..... T:.....	Item			
B4.14	Site establishment F:..... V:..... T:.....	Item			
B4.15	Survey control F:..... V:..... T:.....	Item			
B4.16	Temporary works F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
B4.17	Existing services F:..... V:..... T:.....	Item			
B4.18	Health and safety F:..... V:..... T:.....	Item			
B4.19	Environmental requirements F:..... V:..... T:.....	Item			
B4.20	Alterations, additions, extensions and modifications to existing works F:..... V:..... T:.....	Item			
B4.21	Inspection of adjoining structures, services, buildings and property F:..... V:..... T:.....	Item			
B4.22	Attendance on nominated and selected subcontractors F:..... V:..... T:.....	Item			
	SECTION C: SCOPE OF WORK in accordance with SANS 10403 *(The reference to Clauses refer to Table B.1 of SANS 1921-1:2004)*				
C1	Certification by recognised bodies - CLAUSE 4.4 F:..... V:..... T:.....	Item			
C2	Agrément certificates - CLAUSE 4.5 F:..... V:..... T:.....	N/A			
C3	Other services and facilities - CLAUSE 4.8 F:..... V:..... T:.....	Item			
C4	Recording of weather - CLAUSE 5.2 F:..... V:..... T:.....	Item			
C5	Management meetings - CLAUSE 5.3 F:..... V:..... T:.....	Item			
C6	Daily records CLAUSE 5.6 F:..... V:..... T:.....	Item			
C7	Bond and guarantees - CLAUSE 5.7 F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
C8	Permits - CLAUSE 5.9 F:..... V:..... T:.....	Item			
C9	Proof of compliance with the law - CLAUSE 5.10 F:..... V:..... T:.....	Item			
	SECTION D: SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 (Table A.1)				
D1	Requirements for drawings, information and calculations for which the contractor is responsible CLAUSE 4.1.7 F:..... V:..... T:.....	Item			
D2	The responsibility strategy assigned to the contractor for the works CLAUSE 4.2.1 F:..... V:..... T:.....	Item			
D3	The planning, programme and method statements - CLAUSE 4.3 F:..... V:..... T:.....	Item			
D4	Samples of materials, workmanship and finishes - CLAUSE 4.12.1 F:..... V:..... T:.....	Item			
D5	Fabrication drawings that the contractor is to provide and deliver to the employer - CLAUSE 4.12.2 F:..... V:..... T:.....	Item			
D6	Office for the foreman CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D7	Telephone - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D8	Office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D9	Telephone in office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D10	Sheds - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
D11	Provision and erection of signboards - CLAUSE 4.14.6 F:..... V:..... T:.....	Item			
D12	Termination, diversion or maintenance of existing services - CLAUSE4.17.1 F:..... V:..... T:.....	Item			
D13	Services which are known to exist - CLAUSE 4.17.3 F:..... V:..... T:.....	Item			
D14	Detection apparatus - CLAUSE 4.17.4 F:..... V:..... T:.....	Item			
D15	Additional health and safety requirements - CLAUSE 4.18 F:..... V:..... T:.....	Item			
	SECTION E: SPECIFIC PRELIMINARIES Section E contains Specific Preliminary items which apply to this contract except where "N/A" (Not Applicable) appears against the item.				
E1	**PROPRIETARY BRANDED PRODUCTS** The contractor shall take delivery of, handle, store, use apply and/or fix all proprietary branded products in strict accordance with the manufacturers' instruction after consultation with the manufacturer's authorised representative. F:..... V:..... T:.....	Item			
E2	**OVERTIME** 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 Engineer/Principal Agent has specifically authorised in writing, prior to the execution thereof, that costs for such overtime are to be borne by the Employer. F:..... V:..... T:.....	Item			
E3	**AS BUILT DRAWINGS** The position of construction breaks and the extent of individual concrete pours are to be recorded by the Contractor on the Structural Engineer's drawings and are to be submitted to the Engineer/Principal Agent and the Structural Engineer for their records. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

	SECTION E: SPECIFIC PRELIMINARIES	UNIT	QUANTITY	RATE	AMOUNT
E4	**SITE INSTRUCTIONS** Site Instructions issued on site are to be recorded in triplicate in a Site Instruction book which is to be maintained on site by the Contractor. F:..... V:..... T:.....	Item			
E5	**LABOUR RECORD** At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all sub-contractors on the works each day. F:..... V:..... T:..... *Note: In the event that the contractor fails to satisfy the requirements of this specification, the Employer (Head: Public Works) may apply any of the sanctions provided in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required report has not been submitted.*	Item			
E6	**PLANT RECORD** At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works. F:..... V:..... T:.....	Item			
E7	**NON CESSION OF MONIES** The Contractor shall not cede nor assign his rights or claims to any monies due or to become due under this contract. F:..... V:..... T:.....	Item			
E8	**SECTIONAL COMPLETION** When it is required that the contract be executed in sections or portions, the tenderer shall allow for all costs in this regard as no claim for additional costs will be entertained. F:..... V:..... T:.....	Item			
E9	**LOCAL LABOUR** It is a general requirement of this contract that persons normally resident in the locality of the works (Local Labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate Labour not be available within the locality, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ Local Labour. The Contractor shall identify the local community leaders with the purpose of negotiating with them regarding the utilization of Local Labour in the construction process. In this regard, the Contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth. The Contractor shall, in general, maximize the involvement of the local community. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E10	**IMPORT PERMITS AND DUTIES** The responsibility for obtaining the necessary import permits shall rest with the successful Tenderer. No foreign exchange will be arranged or provided by the Administration. Tenderers are to allow in their tenders and pay the ordinary levy imposed on imported items in terms of item 196.10 of Part 8 of Schedule No. 1 of the Customs and Excise Act, 1964 with effect from 1 October 1989. F:..... V:..... T:.....	Item			
E11	**CONTRACT PRICE ADJUSTMENT PROVISIONS (CPAP)** Notwithstanding anything to the contrary contained in the GCC for Construction Works 2010 2nd Edition, this Contract shall only when the Construction Period exceeds 6 months and the Contract sum exceeds R1,000,000,00 be subject to the Contract Price Adjustment Provisions Indices Application Manual for use with P0151 indices (CPAP) (Revised 1 January 2013) as published by Statistics South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Head: Public Works ***will not accept the submission by Tenderers of lists of additional items.*** Where this contract is a Lump Sum contract, the contract will be subject to Contract Price Adjustment Provisions (CPAP) only where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings. F:..... V:..... T:.....	Item			
E12	**EPWP CONDITIONS AND SPECIFICATIONS** **12.1 EMPLOYMENT TARGETS** E12.1 a Employment Targets The contractor needs to provide a realistic estimate on the number of jobs that the project has the potential to create throughout the project duration as the project will be implemented using labour intensive construction methods on elements where it is economical and feasible for this construction method. No of jobs to be created = ... *[Contractor to fill in an estimated number]* F:..... V:..... T:.....	Item			
	E12.1 b Employment requirements Tenderers are advised that this contract will be subject to the Expanded Public Works Program (EPWP) aimed at alleviating and reducing unemployment. Tenderers must allow for any costs for the employement of unskilled labour as per the requirements of the EPWP program; 1. 55% of unskilled labour to be women 2. 55% of unskilled labour to be youth aged between 18 and 35 years 3. 2% of unskilled labour to be people living with disability 4. 100% Unskilled labour utilised must reside within the boundries of the Municipality Ward where this contract is executed, with preference to the local community closest or at the walking distance to the contract site. Wherever possible local skilled tradesmen are to be employed on this contract with the view to maximize utilization of local resources. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	E12.1 c Labour rate and payment intervals The contractor should ensure that labour rate paid to unskilled local labour is commensurate to the daily task. When determining the rate, consideration should be given to that EPWP beneficiaries are mostly bread winners in their families, as the program intends alleviating poverty. There should also be consideration that the labour rate promotes creation of expanded number of jobs created and person days of work. Contractors should make endeavours to ensure that labourers, particularly unskilled are remunerated on fortnight basis and prior notification be made should there be a shortfall on their wages. The labour rate for local unskilled shall also be determined in consideration of the location of the project, i.e. for projects implemented in urbanized municipalities will not be the same as that for rural municipalities.				
	F:..... V:..... T:.....	Item			
	12.2 LABOUR INTENSIVE CONSTRUCTION METHOD E12.2 a Labour Intensive Construction (LIC) method On site there must a person(s) having competency in managing and implementing LIC methods. *Foreman @ NQF Level 4 the Unit Standard on Implementing LIC methods on site. *Site Agent/ Managers @ NQF level 5 the Unit Standard on Manage Labour-Intensive Skills Programme both must be CETA accredited				
	F:..... V:..... T:.....	Item			
	E12.2 b Labour Intensive Construction Method Those parts of the contract to be constructed using Labour Intensive methods will be marked in the BoQ with letter LI (indicating Labour Intensive) against every item so designated. Such works will only be constructed using method so indicated. Reference to be made to Guidelines for the implementation of Labour Intensive Infrastructure projects under EPWP. "Scope of Work in Respect of Work Relating to the Expanded Public Works Programme (EPWP)"				
	F:..... V:..... T:.....	Item			
	E12.3 RECORD KEEPING 12.3.1 Every employer must keep in the project site office the following minutes of site progress minutes; contractors' monthly site progress reports; accurately recorded attendance register; proof of payment as means to verify authenticity of data in the EPWP Beneficiary form submitted with payment certificates. Copies of submitted EPWP beneficiary data forms should also be kept in the site office.				
	F:..... V:..... T:.....	Item			
	12.3.2 The employer must keep this record for a period of at least three (3) years after the completion of the project in his/her office as the project site office would have been relocated. This should be safely kept for job creation data verifications and periodical audits on projects conducted by National and Provincial Department of Public Works after one (1) or two (2) quarters of submitting captured EPWP Data to the National EPWP coordinating Department.				
	F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	E12.4 EPWP REPORTING as per EPWP DATA FORM At the end of each month as part of site progress report and to be attached to every contractors' progress payment certificate; the contractor shall provide the principal agent & Public Works with a written records, as per EPWP data form; which will be reflecting, beneficiaries full name & surname; ID No and job description of labour employed by main contractor and sub-contractors on site. At the end of each month the contractor must submit the following documents to be attached to the Progress payment certificate: 1. EPWP monthly data collection form 2. Worker monthly payment upload 3. Worker monthly proof of payment i.e 3.1 Acknowledgement of receipt of payment or 3.2 Payslips 3.3 Bank statement highlighted the workers paid 4. Worker monthly training form 5. Monthly attendance register 6. Certified copies of ID's (once off) 7. ID size photos (once off) 8. Proof of UIF 9. Proof of COIDA F:..... V:..... T:.....	Item			
	E12.5 EPWP PROMOTION <u>12.5.1 EPWP signage board</u> EPWP Program at the project level shall always be promoted through have the projects signage board that embrace EPWP logo at the bottom, correct measurement for this signage board will be provided by the project leader during the site handing over meeting. the standard "HELVETIVA MEDUIM " letters are to be used . Professional title to be 10 mm above line . Line thickness to be 8 mm thick . Space between bottom of the line and bottom of the lettering below the line has to be 100 mm. Letter sizes are as follows : Helvetica meduim 100 mm black upper case to be for project name and owner . Helvetica meduim 75mm black upper case only to be used for professional titles.Project name and owner shall be black lettering on white background.board sizes are as follows : Board to be minomum 2000mm from ground level and to be constructed from reinforced formed chromadek panels minimum 0,6mm thick chromadek. The contractor is responsible for ensuring that the project board remains neatly and safely erected for the full duration including maintenance period,after which the project board and post are to be dismantled and handed to the client in good order. F:..... V:..... T:.....	Item			
	<u>12.5.2 Branding of labour apparel</u> Contractor & Sub-contractors' labourers shall be provided with EPWP branded Personal Protective Equipment (PPE), reflector vest with EPWP wording at the back is an ideal and cost effective means of promoting program on site. The contractor is then advised to price for both item 17.5.1 and 17.5.2 F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

	E12.6 COMMUNITY LIAISON OFFICER (CLO) UTILISATION OF A COMMUNITY LIAISON OFFICER In addition to the requirements of Clause E9, contained in this document; The Contractor shall allow for and pay any and all costs necessary for the engagement of the services of a Community Liaison Officer (CLO) for the full duration of this contract In the interest of providing a sound service to both the community and the Contractor, a CLO may only manage one project at a given time. A CLO will be identified by the local structures of the ward areas and appointed following fair and transparent interviewing process, to be conducted in the presence of local structures and the contractor representative, in order to assist the Contractor in the procurement of any local labour, etc. required for this project. The Contractor is to liaise with the CLO and afford him any assistance needed in ensuring sound working relations with the local community. **Key Responsibilities of the CLO are envisaged to include and not necessary be limited to:** 1. Assisting local leadership in conducting skills and resources audit which facilitates sourcing labour from within the ward or targeted areas for employment, as required by contractor. 2. Assisting in sourcing labour-only domestic sub-contractors and the procurement of materials from local resources, as required by the contractor. 3. Assisting the contractor by identifying areas of potential conflict and or threats to the project or to stakeholders in the project and recommend appropriate action to the contractor. 4. Assisting contractor and stakeholders in the project in the resolution of any conflict which may arise. 5. Establishing and ensuring that sufficient and open communication channels between the contractor and the work force are maintained. 6. Establish and ensuring that efficient and open communication channels between the contractor and the community are maintained 7. Identifying and reporting to the Contractor regarding issues where communication between stakeholder is necessary, recommend courses of action and facilitate such communications				
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	8. Assisting the Contractor and the work force in the establishment of grievance procedures and necessary recommenda-tion to the Contractor regarding the grievances and solution thereto. 9. Attending to site meetings and project implementation meetings as required by the Contractor and prepare periodic reports as may be required by the Contractor from time to time. 10. Attending to such other duties which are consistent with the functions of a CLO, as may be required by the Contractor from time to time. Tenderers are to price twice the rate of unskilled local labour rate against this item for any and all costs arising out of compliance with the foregoing and in the event of a Tenderer failing to price against this item or making inadequate financial provision against this item for compliance as aforesaid, then no claim for costs or additional cost incurred will be entertained by the Head: Works F:..... V:..... T:.....	Item			
	E12.7 SKILLS DEVELOPMENT ON SITE Contractor in conforming to the object of EPWP that its beneficiaries need to be capacitated with skills that will render them employable in the future. It is then the responsibility of the Contractor that mandatory life skills are provided to 100% of workforce on site and on the job training to labourers from whom the potential for further development has been identified. The latter is not mandatory to all as it covers technical skills. Contractor should also make provision for the possibility that there might be local youth that will need to be placed on the project with an intention to be provided support towards improving their level of competency and productivity. Contractor shall also provide all necessary on-the-job training to targeted labour to enable such labour to master and advance on techniques required to undertake the work in accordance with requirements of the contract in a manner that does not compromise workers health and safety. F:..... V:..... T:.....	Item			
	E12.8 LABOUR ONLY Sub Contracting for local emerging enterprises Tenderer's are advised that this contract is subject to the Expanded Public Works Programme (EPWP) and the following criteria will apply: <u>African Equity Ownership</u> a) The Tenderer is to allow for 5% of the total value of works to be undertaken by a Priority Population Group. This percentage excludes the costs of employing local unskilled labour. The allocation of this percentage from the Project, the screening of people, the selection of skills, will be for the Contractor to adjudicate. b) The Priority Population Group consists of women, youth and disabled people. c) The Contractor is to give first option for prospective PPG's from the surrounding areas of the Project. Should there be insufficient suitable people fitting the criteria of PPG's, the Contractor may hire people from further afield. This is to be done only after consultation with the Department of Works EPWP Co-ordinator and the Community Liaison Officer (CLO). d) A Mentor is to be employed by the Contractor, in consultation with the Department of Works for the purposes of quality control and liaison between the Contractor and the selected PPG's on site. The mentor will be responsible for ensuring an acceptable level of quality workmanship and that such work carried out by the PPG's is executed within the time frames stipulated. In so far as possible, the Contractor is encouraged to expand the PPG's skills, knowledge and performance levels. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	TENDERER'S TO NOTE CONDITIONS a) The contract to be entered into between the Contractor and the PPG's will be a LABOUR ONLY sub-contract. b) The Contractor will be responsible for ensuring that all materials for use by the PPG's in the works are to be on site timeously. The Contractor shall liaise with The Mentor and PPG to determine the nature and extent of materials required and the lead time necessary. c) The Contractor shall be responsible for the overall programming of the Works and he is to allow for monitoring the PPG's programme and progress. d) In conjunction with the Mentor, he is to allow for the supervision and mentoring (where necessary) of the PPG to ensure quality and adherence to standard building practice e) The Contractor is to allow for extra storage facilities on site for the PPG's tools and equipment. f) Basic tools shall be provided by the PPG's and where these are not available; the Contractor will supply him with the necessary tools and equipment and deduct the costs thereof from the interim claims made by the PPG g) Work requiring specialized tools will be provided free of chargeby the Contractor with the provision that these be returned upon completion of the Work. CO-ORDINATION The Contractor is to co-ordinate the work of all the PPG's, Sub-Contractors and Nominated Sub- Contractors appointed direct by the Employer in such a manner and at all times as will suit the building programme and he is to allow adequate access, for the PPG's, where required, to carry out their work in an efficient manner as no claims for extras in this connection will be entertained. F:..... V:..... T:.....	Item			
	ATTENDANCE The Contractor may allow for attendance upon the PPG's concerned to execute the work. The Contractor is to allow the PPG's the use of any scaffolding belonging to him while it remains so erected on the site. Where scaffolding is necessary for the use by any PPG and the Contractor has not erected any for his own use or has removed same after his own use, the Contractor shall supply sufficient scaffolding to the PPG to be erected and dismantled by the PPG and returned to the Contractor. This attendance upon PPG's to execute the work is to include for the scaffolding provisions as aforesaid and, in addition, is to include for co-operating to the fullest extent with all the parties, attending on off-loading materials, providing suitable storage for tools and materials used by the PPG's, use of general facilities such as latrines, etc., supply and cost of power, lighting, water and the like. F:..... V:..... T:.....	Item			
	E12.9 EPWP CONTRACT FOR LABOUR It is compulsory that shortly after the contractor and or sub contractor has appointed local labour, the employment contract should be signed by both parties, prior to commencement with works on site. The employment contract forms part of the Ministerial Determination or from the regional EPWP officials. Each contract will lapse at the end of each financial year therefore requiring the Contractor to do a renewal of each contract should the need of employment still exist for that particular labourer. F:..... V:..... T:.....				
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	E12.10 EPWP SCOPE of WORK **Note:** Contractors are to price any item on the Bill of Quantities having below, bearing in mind that they are regarded as main sources of job creation, whether sub contracted or undertaken by the main contractor. Elements on the scope of work where application of Labour Intensive Construction methods as will indicated with letters (LI) are regarded feasible are as follows; i) Excavating trenches for foundations and any other civil works with the depth not more than 1.5 m ii) All masonry works which include concrete mixing on site; brickwork; plastering; screed works; jointing; etc. iii) Painting, Plumbing, Ironmongery; roof cladding; glazing; tilling; carpentry; flooring; waterproofing; etc. F:..... V:..... T:.....	Item			
	Note: It is a general requirement of this contract that persons normally resident in the ward of the works (local labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate labour not be available within the ward, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ local labour (Local Sub-contractor(s); Skilled; Semi-Skilled and Unskilled). The contractor shall in consultation with the local community leaders with the purpose of negotiating with them regarding the utilization of local resources in the construction process. In this regard, the contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth as well as families declared as most indigent by War on Poverty/ Sukuma Sakhe program profiling process. The contractor should aim, in general, to maximise the involvement of the local community, however workers from other communities should not exceed 20% of all persons working on the project, where local employees possess skills at level of competency that meet contractors requirements. <u>Payment for the labour-intensive component of the works</u> Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict. <u>Linkage of payment for labour-intensive component of works to submission of project data</u> The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the Employer. The contractor's invoices shall not be paid until all pending labour information has been submitted. <u>Applicable labour laws</u> The current Ministerial Determination (also downloadable at <u>www.epwp.gov.za</u>) Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice , shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled or semi-skilled workers. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E13	**HIV/AIDS AWARENESS** Tenderers are to price against the following items for compliance with the SPECIFICATION FOR HIV/AIDS AWARENESS bound into this document (The clauses referred to are those of the Specification for HIV/AIDS)				
E13.1	Provide and maintain a condom dispenser in terms of Clause 5.1a) F:..... V:..... T:.....	Item			
E13.2	Provide and maintain HIV/AIDS awareness posters terms of Clause 5.1b) F:..... V:..... T:.....	Item			
E13.3	HIV /Aids Awareness Programme on Site for not less than 90% of workers inclusive of all direct and indirect costs; Engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme in terms of Clause 5.2.1a) F:..... V:..... T:.....	Item			
E13.4	Arrange for workers to attend the HIV Awareness Programme in terms of Clause 5.2.1b) F:..... V:..... T:.....	Item			
E13.5	**Reporting** Prepare and attach to claims for payment a brief report in terms of Clause 5.3 (see also HIV/STI Compliance Report included with this document). F:..... V:..... T:..... ***Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Public Works) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required reports has not been submitted.***	Item			
E14	**OCCUPATIONAL HEALTH AND SAFETY ACT NO. 85 OF 1993** Tenderers are to allow for costs in providing a project specific ' Construction Phase Safety, Health and Environmental Plan' in accordance with "Section 2 - Specification Data associated with SANS 1921-1:2004" clause C4.18 in "Part C3 - Scope of Work" F:..... V:..... T:.....	Item			
E15	**NOTICE BOARD, SITE OFFICE, ETC.** Tenderers are to allow for the provision and removal of a project notice board and a site office in accordance with the Principal Agent's requirements. F:..... V:..... T:.....	Item			
E16	**IMPORTED MATERIALS AND EQUIPMENT** Where imported items are listed in the tender documents, the tenderer shall provide all information called for, failing which the price of any such item, material or equipment shall be excluded from currency fluctuations. (***Refer to T2.14 - Schedule of Imported Materials and Equipment***. F:..... V:..... T:.....	Item			
E17	**CONTRACT DOCUMENTS** The drawings issues with these Tender documents do not comprise the complete set but serves as a guide only for tendering purposes and for indicating the scope of works to enable the Tenderer to acquaint him with the nature and extent of the works and the manner in which they are to be executed. Should any part of the drawings not be clearly legible to the Tenderer he shall, before submitting his Tender, obtain clarification in writing from the principal agent. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E18	**GENERAL PREAMBLES** The Document Preambles will be the "ASAQS Model Preambles for Trades – 2008" and is obtainable from the various Regional Office's of the Department of Public Works and shall be read in conjunction with the Bills of Quantities and be referred to for the full descriptions of work to be done and materials to be used. F:..... V:..... T:.....	Item			
E19	**TRADE NAMES** Wherever a Trade Name for any product has been described in the Bills of Quantities the Tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the Principal Agent being obtained prior to the closing date for submission of Tenders. F:..... V:..... T:.....	Item			
E20	**EXISTING PREMISES OCCUPIED** Refer to Scope of Works Part C3 of this Tender Document for information on the occupation of existing buildings. F:..... V:..... T:.....	Item			
E21	**INACCURATE AND DEFECTIVE WORK EXECUTED UNDER PREVIOUS CONTRACT** The contractor shall, after taking possession of the site and before commencing the work, check all levels, liners, profiles and the like and satisfy himself as to the dimensional accuracy of all work executed under the previous contract which may affect his work. Should any inaccurate or defective work be found, the contractor shall immediately notify the principal agent in writing requesting his instructions with regard thereto and afford every facility to those rectifying such inaccurate or defective work. F:..... V:..... T:.....	Item			
E22	**VIEWING THE SITE IN SECURITY AREAS** If the site is situated in a security area and the Tenderder must arrange with the Authorities to obtain permission to enter the site for Tenderding purposes. F:..... V:..... T:.....	Item			
E23	**COMMENCEMENT OF WORKS IN SECURITY AREAS** If the works falls within a security area, the contractor must arrange with the Authorities and give the necessary notices before commencement of the works. Should the contractor fail to make such arrangements, admission to the site may be refused and any additional costs will be for the contractor's account. F:..... V:..... T:.....	Item			
E24	**ENTRANCE PERMITS TO SECURITY AREAS** If the works fall within a security area, the contractor shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under control of the Authority. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E25	**SECURITY CHECK OF PERSONNEL** The principal agent may require the contractor to have his personnel and workmen, or a certain number of them, security classified. In the event of the principal agent requesting the removal of a person or persons from the works for security reasons, the contractor shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the works and the site and/or to any document or information relating to the works. F:..... V:..... T:.....	Item			
E26	**PROHIBITION ON TAKING PHOTOGRAPHS** In terms of article 119 of the Defence Act, 44 of 1957, it is prohibited to sketch or to take photographs of any military site or installation or any building or civil works thereon or to be in possession of a camera or other apparatus used for taking photographs, except when authorised thereto by or on behalf of the Minister. The same prohibition is also applicable to all Correctional Institutions in terms of article 44.1(e) of the Correctional Services Act 8 of 1959. F:..... V:..... T:.....	Item			
E27	Management of Water Water for Construction purposes must be obtained from alternative water sources (i.e. supply other than water that is produced and distributed by a regulated water service authority from a licenced water treatment works for human consumption), eg dams, rivers, boreholes, springs, rainwater harvesting, recycled sewerage water,etc. The alternative water source shall not be of an inferior quality / standard than that required for construction purposes. The client reserves the rigfht through his agents to test such supplies or request certificates confirming the grade and nature of the water supply. Relevant knowledge of the respective area will be an advantage.				
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SECTION 1

SUMMARY – PRELIMINARY & GENERAL

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	13	R	
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Section No. 1
Preliminary & General
Summary

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

PART C2.3 BILL OF QUANTITIES (BUILDERS WORK)

Item No		Quantity	Rate	Amount

BILL NO. 1

ALTERATIONS (PROVISIONAL)

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Works Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

View site:

Before submitting his tender the contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained

Damage to existing finishes:

The Contractor will be held responsible for all damage, however caused, to existing finishes and fittings etc. and he must make good all damage at his own expense to the approval of the Principal Agent

Carried to Collection R

Bill No. 1
Alterations (Provisional)

Breaking down, demolition and alteration activities and tasks, hacking off of existing plaster, etc. is to be executed with care so as to prevent damage to remaining floor and wall surfaces and finishes (where these are to be retained). Tenders will be deemed to include allowance for any necessary protection of existing surfaces and structures as may be necessary to effect the above, as the cost of repairing damage to existing surfaces and structures will be solely for the Contractors account

Responsibility for site:

The contractor is to note that upon possession of the site by himself, and extending until practical completion is achieved, he is solely responsible for the site, site security, general upkeep and cleaning of the site and all other responsibilities in maintaining a construction site in conformance with but not limited to, the Construction Regulations 2003, all local by-laws, all user client regulations, and all Client regulations and procedures. Tenderers are therefore urged to study all available material and to investigate fully the site and areas contiguous to the site, in order to determine the range and extent of responsibility. No additional monetary and/or time claims will be entertained in respect of the above

Explosives :

No explosives whatsoever may be used for demolition purposes unless otherwise stated

General:

The contract shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining classroom blocks and their students. He shall provide proper protection and provide, erect and remove when directed, any temporary tapaulins that may be necessary during the progress of the works, or to the satisfaction of the principal agent

Water supply pipes and other piping that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the principal agent

Carried to Collection R

Bill No. 1
Alterations (Provisional)

Prices for taking out of doors, windows, etc. shall include for removal of all beads, architraves, ironmongery, etc

Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc. and making good floor and wall finishes to match existing

With regard to building up of openings in existing walls, cement screeds and pavings, granolithic, tops of walls, etc., shall be levelled and prepared for raising of brickwork

Making good of finishes shall include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary

The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc.)

Removal of materials:

Where removal is included in the heading, sub-heading or item description, prices shall be deemed to include for the necessary costs in removal and appropriate disposal of materials including but not limited to labour, transportation and disposal costs. No further claims in this regard will be entertained

Removal of asbestos material:

All preparatory work, alterations, etc., to existing asbestos cement roof sheeting, gutters, rainwater pipes, etc., is to be carried out strictly by an approved and certified specialist company and in accordance with statutory requirements (Occupational Health and Safety Act, 1993 - Asbestos Regulations 2001) and all necessary precautions must be taken when working with and disposing of asbestos cement products and the disposing of waste water resulting from cleaning operations, etc

Carried to Collection

R

Bill No. 1
Alterations (Provisional)

The following shall apply in respect of asbestos removal:

The removal of asbestos shall be carried out by a certified entity, registered in accordance with the Occupational Health and Safety Act 1993 and the Asbestos Regulation 2001. Asbestos in all forms/building elements that is to be removed, shall be carried out in strict accordance with aforementioned regulation, and a certificate issued by the entity as contemplated in the above, shall be provided per block for the removal thereof, where the term block shall in this context refer to any single, free standing building structure, regardless of size or purpose. Corresponding disposal certificates shall be issued by the facility at which the asbestos is disposed off, with said facility to, prior to the disposal of any asbestos material provide satisfactory proof that the facility is duly registered and fully compliant in terms of the act, to receive the asbestos material. Under no circumtances is the contractor nor any of his duly authorised representatives to sell and/or give away asbestos material to any member/s of the school community, the community in general or the public at large. Should this be found to be occuring, the contractor will be held responsible contractually and may further be prosecuted criminally. The cost for complying with the above, and all requirements of regulation as reflected above is to be priced for in the items for removal of asbestos material. No further claims in this regard will therefore be entertained

In achieving compliance in respect of asbestos removal, and in order to promote and ensure safety of the environment for school users, the contractor will be required to appoint and maintain the presence of an Approved Inspection Authority to monitor and report on asbestos removal and to certify all aspects related to same including method, volume removed, volume disposed of, etc.

Provision for same has been made in these bills of quantities.

The contractor is to note that should he fail to appoint an independent AIA, any and all consequent delays and damages will be for his own account.

Carried to Collection R

Bill No. 1
Alterations (Provisional)

TEMPORARY BARRIERS, SCREENS, ETC

Temporary parkhome units

Provide temporary parkhomes on site for educational facilities during the construction phase as herewith measured, including levelling, positioning on site and connection to an electrical supply including issuing compliance certificates

Parkhomes are to be standard classroom size minimum 7 x 7m or nearest size

1	Provision of parkhome for a period of 8 months A:0 B:0 C:0 D:0 E:0 F:0 G:0 H:0 I:0 J:3	No	3	
2	Provision of two tier steps for 8 months A:0 B:0 C:0 D:0 E:0 F:0 G:0 H:0 I:0 J:3	No	3	
3	Provision of electrical compliance certificates for parkhomes A:0 B:0 C:0 D:0 E:0 F:0 G:0 H:0 I:0 J:3	No	3	
4	Transport to and from site of parkhomes as per distance between supplier and site per return trip A:0 B:0 C:0 D:0 E:0 F:0 G:0 H:0 I:0 J:3	TRIP	3	

Carried to Collection R

Bill No. 1
Alterations (Provisional)

TEMPORARY ROOF PROTECTION

The Contractor will be held responsible for all damage, howsoever caused, to finishes inside rooms where the existing roof coverings have been removed and he must make good all damage at his own expense to the approval of the Employer

5	Supply and install temporary waterproofing and weatherproof protection to buildings in the form of uPVC underlay or tarpaulin where roofing and related items have been removed during construction whereby exposing buildings, including the relocation of the protection to various blocks within the works as area. The contractor to allow for maintenance of the waterproofing during periods of exposure to classrooms as well the reuse and reallocation to the blocks as per the contracts construction programme. All double handling will be deemed to be included in the rates based on the contractor's tender stage construction programme	m2	559	
	A : 0 B : 226 C : 226 D : 35 E : 32 F : 20 G : 19 H : 0 I : 0 J : 0			

REMOVAL OF EXISTING WORK

Taking out and removing doors, windows, etc., including thresholds, sills, etc. (building up openings and making good finishes elsewhere)

6	Timber single door and frame size 900 x 2100mm high	No	12	
	A : 5 B : 0 C : 2 D : 2 E : 1 F : 1 G : 1 H : 0 I : 0 J : 0			

Note: Tenderers are referred to the foregoing supplementary preambles within this trade when pricing the following item (removal of asbestos)

Taking down and removal of Asbestos by Specialist

7	Asbestos roof sheets, including timber purlins, etc.	m2	362	
	A : 0 B : 0 C : 193 D : 60 E : 48 F : 31 G : 30 H : 0 I : 0 J : 0			

Carried to Collection R

Bill No. 1
Alterations (Provisional)

	If the item below is not priced, it is deemed to form part of the Occupational Health and Safety cost in the preliminaries		
8	Issue of certificate of compliance by registered AIA appointed by the main contractor's appointed specialist asbestos disposal and removal subcontractor, for the safe removal of asbestos containing products before the work on site commences		Item
	Taking down and removing roofs, floors, panelling, ceilings, partitions, etc		
9	Chromadek roof sheets including all fixings A : 32 B : 0 C : 0 D : 216 E : 67 F : 67 G : 67 H : 0 I : 0 J : 0	m2	450
10	Double pitched timber roof truss with clear span between walls 7 000mm - 8 000mm long and approximately 1 600mm high A : 0 B : 0 C : 5 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	5
11	Fascias boards fixed to ends of rafters including galvanised steel H-profile joint strips, etc, A : 80 B : 0 C : 34 D : 8 E : 13 F : 8 G : 8 H : 0 I : 0 J : 0	m	151
12	Barge boards fixed to ends of rafters including galvanised steel H-profile joint strips, etc, A : 22 B : 0 C : 22 D : 14 E : 15 F : 15 G : 15 H : 0 I : 0 J : 0	m	105
13	Gypsum plasterboard ceilings including cornices, timber brandering, etc A : 245 B : 0 C : 98 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	343
	Carried to Collection		R

Bill No. 1
Alterations (Provisional)

14	125 x 75mm uPVC Eaves gutters and rainwater pipes A : 80 B : 0 C : 34 D : 8 E : 13 F : 8 G : 8 H : 0 I : 0 J : 0	m	151	
	Taking out and removing glass and mirrors			
15	Glass from steel windows including cleaning out rebates and preparing for new glass A : 15 B : 0 C : 6 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	21	
	Taking up and removing vinyl floor coverings, carpeting, etc			
16	Vinyl tile floor covering including preparing screed for new vinyl floor covering A : 245 B : 0 C : 0 D : 35 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	280	
	Taking out and removing ironmongery			
17	Make good existing glazed steel window approximately 900mm x 1200mm high including sanding down thoroughly, applying metal primer and two coats gloss enamel paint, replacing broken glazing, overhauling, adjusting and servicing existing ironmongery to leave complete unit in a perfect condition A : 6 B : 0 C : 3 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	9	
18	Remove existing chalkboards approximately 4800 x 1200mm high, including fixings, etc. and cart off site A : 5 B : 0 C : 2 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	7	
19	Remove existing pinning board approximately 1800 x 2800mm high, including fixings, etc. and cart off site A : 5 B : 0 C : 2 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	7	
	Carried to Collection			R
	Bill No. 1 Alterations (Provisional)			

	Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screeds, plaster, etc			
20	25mm Screed from floors A : 245 B : 0 C : 98 D : 52 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	395	
	Taking out and removing piping, sanitary fittings, etc including disconnecting piping from fittings and making good floor and wall finishes (making good tiling and paintwork elsewhere)			
21	Vitreous china wash hand basin A : 0 B : 0 C : 0 D : 0 E : 2 F : 1 G : 1 H : 0 I : 0 J : 0	No	4	
22	Vitreous china WC pan with cistern A : 0 B : 0 C : 0 D : 0 E : 2 F : 2 G : 2 H : 0 I : 0 J : 0	No	6	
	MAKING GOOD OF FINISHES ETC			
23	Remove 100mm width of plaster on either side of crack, rake out crack: 6mm X 6mm deep, clean out all loose material and repair crack using Prostruct 506 Flexicoat polymer modified cementitious coating or similar approved, to Manufacturer's specification A : 20 B : 0 C : 8 D : 12 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	40	
	Carried to Collection			R

Bill No. 1
Alterations (Provisional)

Making good existing Roof trusses

Repairs to Bottom Chord

24 Make good existing timber roof truss in position, of tie beam span approximately 8 000mm - 9 400mm between walls and approximately 1 600mm high at apex, including carefully cutting out and removing sections of damaged 76 x 114mm bottom chord, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all bottom chord fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer — No — 7

A : 2 B : 0 C : 5 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

Repairs to rafters

25 Make good existing timber roof truss in position, of tie beam span approximately 8 000mm - 9 400mm between walls and approximately 1 600mm high at apex, including carefully cutting out and removing sections of damaged 76 x 114mm rafters, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all rafter fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition including reinstating in position as approved by the Engineer — No — 8

A : 3 B : 0 C : 5 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

Carried to Collection R

Bill No. 1
Alterations (Provisional)

Repairs to king post

26 Make good existing timber roof truss in position, of tie beam span approximately 8 000mm - 9 400mm between walls and approximately 1 200mm high at apex, including carefully cutting out and removing sections of damaged 76 x 76mm king post, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all king post fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer — No — 3

A:1 B:0 C:2 D:0
E:0 F:0 G:0 H:0
I:0 J:0

Repairs to Bracings

27 Make good existing timber roof truss in position, of tie beam span approximately 8 000mm - 9 400mm between walls and approximately 1 200mm high at apex, including carefully cutting out and removing sections of damaged 76 x 52mm bracings and intermediate posts and supports, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all king post fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer — No — 6

A:4 B:0 C:2 D:0
E:0 F:0 G:0 H:0
I:0 J:0

Carried to Collection — R

Bill No. 1
Alterations (Provisional)

Repairs to Queen posts

28 Make good existing timber roof truss in position, of tie beam span approximately 8 000mm - 9 400mm between walls and approximately 1 200mm high at apex, including carefully cutting out and removing sections of damaged 76 x 52mm queen posts and/or intermediate and diagonal bracing and/or supports, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all queen posts and intermediate and diagonal bracing and supports fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer — No — 3

A : 1 B : 0 C : 2 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

Making good untinted granolithic

29 Floors in patches — m2 — 12

A : 12 B : 0 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

Making good internal cement plaster

30 Walls in patches — m2 — 426

A : 230 B : 0 C : 84 D : 35
E : 27 F : 25 G : 25 H : 0
I : 0 J : 0

Making good external cement plaster

31 Walls in patches — m2 — 260

A : 121 B : 0 C : 50 D : 15
E : 33 F : 25 G : 16 H : 0
I : 0 J : 0

Carried to Collection R

Bill No. 1
Alterations (Provisional)

Bill No. 1

Alterations (Provisional)

COLLECTION

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Bill No. 1
Alterations (Provisional)

Item No		Quantity	Rate	Amount

BILL NO. 2

EARTHWORKS (PROVISIONAL)

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

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SUPPLEMENTARY PREAMBLES

Nature of ground

The nature of the ground is assumed to be loose sandy material, therefore 'earth', but possibly interspersed with 'soft rock' or 'hard rock'

Excavation for working space in rock

Notwithstanding clause 11 page 8 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as 'extra over' bulk excavation or trench and hole excavation as the case may be

Carting away of excavated material

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

Carried to Collection R

Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material

Testing

Prices for filling are to include for all necessary density tests in accordance with SANS 10400

EXCAVATION, FILLING, ETC OTHER THAN BULK

Excavation in earth not exceeding 2m deep

1	Reduced levels under floors					m3	33
	A : 0	B : 33	C : 0	D : 0			
	E : 0	F : 0	G : 0	H : 0			
	I : 0	J : 0					
2	Trenches					m3	32
	A : 0	B : 32	C : 0	D : 0			
	E : 0	F : 0	G : 0	H : 0			
	I : 0	J : 0					

Extra over trench and hole excavations in earth for excavation in

3	Soft rock					m3	10
	A : 0	B : 10	C : 0	D : 0			
	E : 0	F : 0	G : 0	H : 0			
	I : 0	J : 0					
4	Hard rock					m3	5
	A : 0	B : 5	C : 0	D : 0			
	E : 0	F : 0	G : 0	H : 0			
	I : 0	J : 0					

Carried to Collection R

Bill No. 2
Earthworks (Provisional)

	Extra over all excavations for carting away			
5	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor A : 0 B : 61 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	61	
	Risk of collapse of excavations			
6	Sides of trench and hole excavations not exceeding 1,5m deep A : 0 B : 93 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	93	
	Keeping excavations free of water			
7	Keeping excavations free of all water other than subterranean water		Item	
	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density			
8	Backfilling to trenches, holes, etc A : 0 B : 15 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	15	
9	Over site A : 0 B : 5 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	5	
	Earth filling supplied by the contractor compacted to 98% Mod AASHTO density			
10	G5 material under floors A : 0 B : 24 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	24	

Carried to Collection R

Bill No. 2
Earthworks (Provisional)

Coarse river sand filling supplied by the contractor

11	Under floors etc A : 0 B : 8 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	8		

Compaction of surfaces

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 95% Mod AASHTO density A : 0 B : 163 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	163		
13	Compaction of trench surface including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density A : 0 B : 36 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	36		

Prescribed density tests on filling

14	"Modified AASHTO Density" test A : 0 B : 6 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	6		

SOIL POISONING

Soil insecticide

15	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming A : 0 B : 163 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	163		

Carried to Collection R

Bill No. 2
Earthworks (Provisional)

16	To bottoms and sides of trenches etc A : 0 B : 129 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	129	
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Bill No. 2
Earthworks (Provisional)

Bill No. 2

Earthworks (Provisional)

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Bill No. 2
Earthworks (Provisional)

Item No		Quantity	Rate	Amount

BILL NO. 3

CONCRETE, FORMWORK AND REINFORCEMENT

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
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SUPPLEMENTARY PREAMBLES

Cost of tests

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

Carried to Collection R

Bill No. 3
Concrete, Formwork and Reinforcement

Formwork

Descriptions of formwork shall be deemed to include use and waste only (except where described as 'left in' or 'permanent'), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself

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

Formwork to soffits of slabs, beams, etc. shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks

UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

10MPa/19mm concrete

1	Surface blinding under footings and bases A : 0 B : 2 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	2			
	Carried to Collection			R		

Bill No. 3
Concrete, Formwork and Reinforcement

REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

25MPa/19mm concrete

2	Surface beds and thickenings, etc cast in panels on waterproofing A : 0 B : 24 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	24	
3	Strip footings A : 0 B : 11 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m3	11	

TEST BLOCKS

4	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional) A : 0 B : 3 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	Sets	3	

CONCRETE SUNDRIES

Finishing top surfaces of concrete smooth with a power float

5	Surface beds, slabs, etc to falls A : 0 B : 163 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	163	

MOVEMENT JOINTS ETC

Two sheets of masonite with smooth surfaces as slip joints between horizontal concrete and brick surfaces including cement mortar bed

6	Not exceeding 300mm wide A : 0 B : 19 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	19	

Carried to Collection R

Bill No. 3
Concrete, Formwork and Reinforcement

	Expansion joints with bitumen impregnated softboard between vertical concrete and brick surfaces			
7	12mm Joints not exceeding 300mm high A : 0 B : 65 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	65	
	Saw cut joints			
8	5 x 30mm Saw cut joints in top of concrete A : 0 B : 65 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	65	
	REINFORCEMENT (PROVISIONAL)			
	Mild steel and high tensile steel reinforcement			
9	Various diameters to concrete slabs & beams, staircase, columns and foundations A : 0.00 B : 2.50 C : 0.00 D : 0.00 E : 0.00 F : 0.00 G : 0.00 H : 0.00 I : 0.00 J : 0.00	t	2.50	
	Fabric reinforcement			
10	Type 193 fabric reinforcement in concrete surface beds, slabs, etc A : 0 B : 163 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	163	
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Bill No. 3
Concrete, Formwork and Reinforcement

Bill No. 3

Concrete, Formwork and Reinforcement

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Bill No. 3
Concrete, Formwork and Reinforcement

Item No		Quantity	Rate	Amount

BILL NO. 4

MASONRY

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

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SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

BRICKWORK

Sizes in description:

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

Hollow walls:

Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole

Carried to Collection R

Bill No. 4
Masonry

Bagged and sealed walls:

Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating

Face bricks:

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

Pointing:

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

FOUNDATIONS (PROVISIONAL)

Brickwork of NFX bricks (14 MPa nominal compressive strength) in class I mortar

1	One brick walls of two half brick skins bagged and sealed A : 0 B : 31 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	31			

SUPERSTRUCTURE

Brickwork of NFX bricks in class II mortar

2	Half brick walls A : 0 B : 22 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	22			
3	Half brick walls in beamfilling A : 0 B : 12 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	12			

Carried to Collection R

Bill No. 4
Masonry

4	One brick walls of two half brick skins bagged and sealed A : 0 B : 144 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	144	
	BRICKWORK SUNDRIES			
	Brickwork reinforcement			
5	75mm Wide reinforcement built in horizontally A : 0 B : 169 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	169	
6	150mm Wide reinforcement built in horizontally A : 0 B : 1173 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	1 173	
	Prestressed fabricated lintels			
7	110 x 75mm Lintels in lengths not exceeding 3m A : 0 B : 58 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	58	
	Turning pieces			
8	110mm Wide turning piece to lintels etc A : 0 B : 22 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	22	
	Galvanised hoop iron cramps, ties, etc			
9	30 x 1,6mm Roof tie 1,5m long with one end fixed to timber and other end built into brickwork A : 0 B : 26 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	26	
	Carried to Collection			R
	Bill No. 4 Masonry			

	Air bricks etc		
10	229 x 152mm Clay terracota vermin proof air brick A : 0 B : 8 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	8
	FACE BRICKWORK		
	"Corobrik Silvergey Travertine FBX" or equally approved face bricks pointed with recessed horizontal and vertical joints		
11	Extra over brickwork for face brickwork A : 0 B : 144 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	144
12	Extra over brickwork for face brickwork in foundations (Provisional) A : 0 B : 12 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	12
13	Extra over brickwork for face brickwork in beamfilling A : 0 B : 6 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	6
14	Half brick walls pointed on both sides A : 0 B : 10 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	10
15	Extra over brickwork for brick-on-edge header course lintel A : 0 B : 24 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	24
16	Fair raking cutting A : 0 B : 22 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	22
	Carried to Collection		R
	Bill No. 4 Masonry		

Brick-on-edge header course copings, sills, etc of "Corobrik Firelight Travertine FBX" or equally approved face bricks pointed with recessed joints on all exposed faces

17 110mm Wide sill set sloping and slightly projecting — m — 19

A : 0 B : 19 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

NUTEC-CEMENT/FIBRE-CEMENT WINDOW SILLS

Natural grey sills in single lengths bedded in class I mortar including metal fixing lugs etc

18 15 x 150mm Wide sills set flat and slightly projecting — m — 19

A : 0 B : 19 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

Carried to Collection R

Bill No. 4
Masonry

Bill No. 4

Masonry

COLLECTION

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Bill No. 4
Masonry

Item No			Quantity	Rate	Amount
	BILL NO. 5				
	WATERPROOFING				
	Key: **Location Description**				
	A Block A (5 classroom) B Block B (New 2 classroom) C Block C (2 classroom) D Block D (Principal office) E Block E (Ablution) F Block F (Ablution) G Block G (Ablution) H Block H (To be demolished) I General J External works				
	Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural and Structural Works Information before pricing this Bill of Quantities				
	SUPPLEMENTARY PREAMBLES				
	Proprietary items or materials				
	Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent				
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" or equally approved embossed damp proof course				
1	In walls A : 0 B : 13 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	13		
	Carried to Collection				R
	Bill No. 5 Waterproofing				

2	In walls under sills A : 0 B : 4 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0 **One layer of 250 micron "Consol Plastics Gunplas USB Green" or equally approved waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"**	m2	4	
3	Under surface beds A : 0 B : 163 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	163	
	JOINT SEALANTS ETC **Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc**			
4	5 x 10mm In saw cut joints in floors A : 0 B : 65 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	65	
	Carried to Collection			R

Bill No. 5
Waterproofing

Bill No. 5

Waterproofing

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Bill No. 5
Waterproofing

Item No		Quantity	Rate	Amount

BILL NO. 6

ROOF COVERINGS ETC

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Sheeting:

The roof sheeting shall be 0.58mm thick full hard IBR profile galvanised mild steel or other approved roof sheets, roll formed in continuous lengths and cut to length by a pneumatic cut-off process. A certificate verifying compliance to all current SANS codes in respect to galvanised sheeting shall be issued by the manufacturer

Finishing of sheets:

The paint finish shall be colour plus on one side and standard grey finish on the other side

Carried to Collection R

Bill No. 6
Roof Coverings

Fixing of sheets:

The roof sheeting shall be laid in long lengths, narrow flutes outermost, with single flute sidelaps facing away from prevailing wind. All sheets shall be secured to timber purlins utilising approved roofing screws in strict accordance to the manufacturers instructions. Sheeting is to be drilled and not punched, with side laps filled with approved Mastic sealant. Sheeting is to protrude a minimum of 50mm from ends of rafters

Flashings:

Flashings shall be approved by the manufacturer and fixed to the sheeting with approved fixings. Prior to flashings being fixed, all troughs at the apex shall be stop-ended to the full depth of the sheet in order to prevent any penetration of wind driven water. The trough shall be lipped at the eaves end to form a drip. Flashing flanges shall be notched to the sheet profile where necessary. Care shall be taken to ensure that no sheeting or flashing will be cut with abrasive disc on roof surface in order to prevent steel spatter from penetrating colour coated areas

Erection:

Every precaution shall be taken to prevent damage to roof sheets during all stages of construction. Duck boards should be used when necessary to protect the sheeting from damage. Sheeting which has become deformed or damaged in any way, shall be replaced, at no additional cost to the contract

Safety:

The contractor shall exercise special care when handling long length sheeting, particularly in windy conditions. Should work be interrupted for any reason, all loose sheeting and incomplete sections must be adequately secured against possible movement by wind and gravity

Carried to Collection

R

Bill No. 6
Roof Coverings

Guarantee:

The manufacturer shall comply with ISO9002 Quality Management System. Sheeting shall be laid in strict accordance with manufacturers specifications by an approved contractor. A written and approved five (5) year guarantee of site workmanship and water tightness shall be issued after final inspection of roof sheets by the manufacturer

TROUGHED METAL SHEETING AND ACCESSORIES

0.58mm Thick galvanized "Colorbond" IBR profile metal sheeting or equal approved sheeting, colour to the determined on site, fixed to timber purlins with and including approved roofing screws with 19mm round galvanised washers and rubber gasket (timber purlins measured elsewhere) and fixed strictly in accordance with the manufacturer's instructions

1	Roof covering with pitch not exceeding 25 degrees A : 0 B : 179 C : 179 D : 60 E : 47 F : 31 G : 30 H : 0 I : 0 J : 0	m2	527	
2	Ridge capping 462mm girth A : 0 B : 16 C : 16 D : 4 E : 8 F : 5 G : 4 H : 0 I : 0 J : 0	m	53	
3	Hot dip galvanised metal polyclosures to under ridge capping and eaves A : 0 B : 32 C : 32 D : 8 E : 16 F : 5 G : 4 H : 0 I : 0 J : 0	m	97	
4	Sondor IBR pattern polyclosure under ridge capping and eaves A : 0 B : 38 C : 32 D : 8 E : 16 F : 9 G : 4 H : 0 I : 0 J : 0	m	108	

Carried to Collection R

Bill No. 6
Roof Coverings

5	Extra over roof sheet for fixing every crown at eaves A : 0 B : 22 C : 22 D : 8 E : 16 F : 9 G : 8 H : 0 I : 0 J : 0	m	86	
6	Extra over for fixing every crown at ridge A : 0 B : 32 C : 32 D : 17 E : 17 F : 17 G : 16 H : 0 I : 0 J : 0	m	130	
	ROOF AND WALL INSULATION			
	"Super Sisalation Heavy Industrial Grade 430" or equally approved - Double sided reflective foil laminate incorporating layers of kraft paper and reinforcing scrim, laminated together with low density polyethylene (293gsm)			
7	Insulation laid taut over timber rafters (at approximately 1200mm centres) and fixed concurrent with tiling battens, purlins, etc A : 0 B : 154 C : 154 D : 94 E : 30 F : 30 G 30 H : 0 I : 0 J : 0	m2	490	
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Bill No. 6
Roof Coverings

Bill No. 6

Roof Coverings

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Bill No. 6
Roof Coverings

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BILL NO. 7

CARPENTRY AND JOINERY

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Fixing:

Items described as 'nailed' shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete

Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as 'bolted', the bolts have been given elsewhere

Joinery:

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

Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts

Carried to Collection R

Bill No. 7
Carpentry and Joinery

Decorative thermosetting plastic laminate covering:

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Prefabricated plate nailed timber roof truss contruction:

NOTE: The following is applicable in respect of roof trusses:

The Contractor shall allow for all items deemed necessary for the proper design, fabrication and erection of the roof trusses, bracing, etc.

The materials and design of the roof construction shall be in accordance with the relevant edition of the South African National Standards (SANS) and the Standard Building Regulations (SBR)

The design of trusses and permanent bracing shall be carried out under the control of a registered professional engineer who shall provide the requisite certificate of stability on completion of the roof contruction. All calculations and drawing, including a key plan of each building showing the position of each type of member shall be submitted timeously to the consulting Structural Engineer for his approval before fabrication is commenced

Prices are to include for the provision of adequate temporary bracing during construction to the approval of the Departmental Engineer

The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the architect and/or the site before fabrication commences

Trusses must be designed in accordance with the environmental conditions of the area

The following roof trusses are to a pitch not exceeding 25 degrees (unless otherwise stated) spaced at approximately 1200mm centres and are to receive 0,58mm thick IBR profile roof sheets on timber purlins and a nailed up ceiling under

Carried to Collection R

Bill No. 7
Carpentry and Joinery

Pretreatment of timber:

This service falls within the areas defined in the National Building Regulations for Treatment of Timber against insect pest affecting softwood fixed permanently in all buildings

The Regulations require that timber be treated in terms of the relevant SANS. Tenderers are to make allowance in their rates

Prefabricated roof trusses, etc:

All timber roof trusses including nail-plated trusses and bolted trusses with lapped members must comply with SANS

Prices for roof trusses are to include for all temporary bracing and supports and for all necessary top and bottom chord bracing, wind bracing and runners where required and overhanging ends are to be wrot faced all round

Plate nailed timber roof truss construction:

The following is applicable in respect of roof trusses: Trusses are at maximum 1200mm centres. Roof covering is 0,58mm thick IBR profile roof sheets on timber purlins. Ceilings are plasterboard on softwood brandering. The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the Architect and/or the site before design or fabrication commences

PREFABRICATED ROOF TRUSSES, ETC.

The following in plate nailed timber roof trusses with pitch not exceeding 25 degrees from an approved supplier, delivered to site, hoisted into position, fixed and braced on timber wall plates to SABS 0243:

Prefabricated plate nailed timber roof truss construction

The following is applicable in respect of roof trusses:

Carried to Collection

R

Bill No. 7
Carpentry and Joinery

	Trusses are at maximum 1200mm centres Roof covering is "Chromadek" 0.58mm thick ISQ230 or equally approved, Z275 spelter galvanised steel sheeting on purlins. The references given in the descriptions are to the respective types of trusses. The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the architect and/or the site before design or fabrication commences		
1	Design, supply and install roof truss system size complete and in accordance with SANS, including cross battens at hips, valleys, longitudinal bracing, etc. all in accordance with the specifications to building size approximately 16 000mm x 12 000mm on plan and with a clear span between walls approximately 7 500mm (approximate on flat 192m2) (17.5 degree pitch) A : 0 B : 1 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	1
2	Double pitch roof truss with a clear span of 9 300mm rising 1 700mm to apex with a eaves overhang of 600mm on both sides overall including wall plates, trusses, jack rafters, permanent bracing and 38 x 38mm battens at centres for roof covering A : 0 B : 0 C : 10 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	10
3	Provide manufacture and installation certificates (TR1 and TR2), to be supplied by the contractor and approved by the Consulting Structural Engineer after manufacture and installation respectively		Item
	ROOFS ETC		
	Sawn softwood		
4	38 x 114mm Wall plates A : 0 B : 32 C : 32 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	64
5	38 x 114mm Longitudinal bracing A : 0 B : 56 C : 42 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	98
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Bill No. 7
Carpentry and Joinery

6	50 x 76mm Purlins A : 148 B : 256 C : 256 D : 72 E : 13 F : 8 G : 8 H : 0 I : 0 J : 0	m	761	
7	76 x 76mm Splayed purlins A : 0 B : 32 C : 32 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	64	
	Sundries			
8	75 x 287mm wrought saligna beams bolted to steel post (post elsewhere measured) A : 0 B : 16 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	16	
9	Wrought faces on sawn timbers A : 0 B : 8 C : 6 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	14	
10	Two coats creosote on sawn timbers A : 0 B : 21 C : 15 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	36	
11	600mm Long wrought end to 38 x 114mm sawn timber and splayed cut A : 0 B : 36 C : 30 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	66	
12	"Teco" or equally approved hurricane clips A : 0 B : 672 C : 480 D : 32 E : 32 F : 32 G : 32 H : 0 I : 0 J : 0	No	1 280	
13	2.5mm Diameter galvanised wire tie 400mm girth wrapped around rafter and purlin with ends tied together A : 0 B : 168 C : 240 D : 16 E : 6 F : 6 G : 6 H : 0 I : 0 J : 0	No	442	
	Carried to Collection			R

Bill No. 7
Carpentry and Joinery

EAVES, VERGES, ETC

"Everite Flexit" or equally approved pressed nutec-cement

14	12 x 220mm Fascias boards fixed to ends of rafters including galvanised steel H-profile joint strips A : 80 B : 32 C : 32 D : 8 E : 13 F : 8 G : 8 H : 0 I : 0 J : 0	m	181		
15	12 x 80 x 220mm Angle section barge boards fixed to ends of rafters including galvanised steel H-profile joint strips A : 22 B : 22 C : 11 D : 24 E : 22 F : 22 G : 22 H : 0 I : 0 J : 0	m	147		

DOORS ETC

Wrought meranti doors hung to steel frame (Steel frame elsewhere measured)

16	44mm Thick framed, ledged and braced battened door overall size 813mm x 2032mm high formed of 44 x 110mm styles and top rail, 22 x 150mm middle ledge, 22 x 225mm bottom ledge, 22 x 110 braces and and filled in with 22mm thick "V" jointed boarding on both sides A : 5 B : 2 C : 2 D : 2 E : 1 F : 1 G : 1 H : 0 I : 0 J : 0	No	14		

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Bill No. 7
Carpentry and Joinery

Bill No. 7

Carpentry and Joinery

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Bill No. 7
Carpentry and Joinery

Item No		Quantity	Rate	Amount

BILL NO. 8

CEILINGS, PARTITIONS AND ACCESS FLOORING

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Fixing

Items described as 'nailed' shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete

Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as 'bolted', the bolts have been given elsewhere

Ceilings

Unless otherwise described ceilings shall be deemed to be horizontal

Carried to Collection R

Bill No. 8
Ceilings, Partitions & Access Flooring

Bulkheads

Bulkheads are defined as those portions of ceilings which are stepped down from the general ceiling level in a particular room or area and which generally occur along the perimeter. Their purpose is either to conceal services or to create architectural features

Bulkheads have only been described as such where they conform to the above definition and where the horizontal or vertical dimensions do not exceed 900mm. Where these dimensions are more than 900mm such portions of ceilings have been included in the appropriate general items of ceilings

Unless otherwise described bulkheads shall be deemed to be horizontal along the length

Steel components

All steel components for ceilings, partitions, etc. are to be galvanised in accordance with SANS 121

NAILED UP CEILINGS

12mm "Rhino" gypsum plasterboard

1	Ceilings including 38 x 38mm sawn softwood brandering at 600mm centres with cross brandering at joints, ends of sheets and at light fittings, etc A : 245 B : 98 C : 98 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	441	
2	Extra over ceiling for 700 x 800mm trap door of wrought softwood rebated framing with one sawn softwood cross brander covered with ceiling board and fitted flush in opening A : 5 B : 2 C : 2 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	9	

"Rhino" gypsum plasterboard cornices

3	75mm Coved cornices A : 140 B : 56 C : 56 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	252	

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Bill No. 8
Ceilings, Partitions & Access Flooring

Bill No. 8

Ceilings, Partitions & Access Flooring

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Bill No. 8
Ceilings, Partitions & Access Flooring

Item No		Quantity	Rate	Amount

BILL NO. 9

FLOOR COVERINGS, PLASTIC LININGS, ETC

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

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SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Carried to Collection R

Bill No. 9
Floor Coverings, Wall Linings, etc

FLOOR COVERINGS

300 x 300 x 2.5mm Thick "Floorflex" or equally approved semi-flexible vinyl tiles manufactured in accordance with SANS 581 and laid in FloorworX No. 62 acrylic adhesive spread with a trowel fitted with an A2 notched blade at a rate of between 5.5m2 and 6.5m2 per litre on a previously prepared Class 1 sub floor in accordance with SANS 10070, using FloorworX Self Leveller when required, including all cutting and waste. The flooring must be rolled in both directions with an articulated 68kg three-sectional roller immediately after it has been laid into the adhesive

1	On floors A : 245 B : 98 C : 98 D : 35 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	476	

SKIRTINGS, NOSINGS, ETC

"Marley " or equally approved

2	12mm anodised aluminium edge strip fixed to concrete A : 140 B : 56 C : 56 D : 56 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m	308	

POLISH, SEALERS, ETC

"Floorworx" or equally approved

3	Strip floor using "Floorworx Stripper", including scrubbing using a diluted solution of "Floorworx Rinse" and seal with three coats of "Floorworx Silk Matt" or "Gloss Sealer" A : 245 B : 98 C : 98 D : 35 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	476	

Carried to Collection R

Bill No. 9
Floor Coverings, Wall Linings, etc

Bill No. 9

Floor Coverings, Wall Linings, etc

COLLECTION

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Bill No. 9
Floor Coverings, Wall Linings, etc

Item No		Quantity	Rate	Amount

BILL NO. 10

IRONMONGERY

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

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SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Finishes to ironmongery

Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded

Carried to Collection R

Bill No. 10
Ironmongery

	HINGES, BOLTS, ETC				
	"Union" or equally approved				
1	100mm Brass hinge A : 15 B : 6 C : 6 D : 6 E : 3 F : 3 G : 3 H : 0 I : 0 J : 0	No	42		
	LOCKS				
	"Union" or equally approved				
2	"2277-103 SS" Three lever lockset A : 5 B : 2 C : 5 D : 2 E : 1 F : 1 G : 1 H : 0 I : 0 J : 0	No	17		
	SUNDRIES				
	"Union" or equally approved				
3	"CZ8731SC" door stop A : 5 B : 2 C : 2 D : 2 E : 1 F : 1 G : 1 H : 0 I : 0 J : 0	No	14		
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC				
	"Vitrex" or equally approved				
4	"System 2000" or equally approved pinning board 1800 x 2800mm high plugged to brick wall A : 5 B : 2 C : 2 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	9		
5	"System 1000" or equally approved standard vitreous enamel magnetic chalkboard 4800 x 1200mm high overall comprising two fixed panels, each 2400 x 1140mm high complete with aluminium chalk rail, etc plugged A : 5 B : 2 C : 2 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	No	9		
	Carried to Collection			R	

Bill No. 10
Ironmongery

Bill No. 10

Ironmongery

COLLECTION

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	53	
Carried to Summary		R

Bill No. 10
Ironmongery

Item No		Quantity	Rate	Amount

BILL NO. 11

METALWORK

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Descriptions of bolts, anchors, etc.:

Descriptions of bolts shall be deemed to include nuts and washers

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

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

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

Carried to Collection R

Bill No. 11
Metalwork

Hot dipped galvanising:

The mass of hot dip galvanised steelwork has been calculated on the mass before galvanising and no allowance has been made for the additional mass of galvanising for which allowance must be made in pricing

Unless otherwise stated, all steelwork described as galvanised shall be deemed to include for 'hot-dip' galvanising in accordance with the latest SANS standards

GALVANISED PRESSED STEEL DOOR FRAMES

NOTE:

All door frames to be fitted with one and a half pair chromium plated on steel, brass butts with double nylon washers for each door leaf unless otherwise described and chromium plated striking plates

1,2mm Double rebated frames suitable for one brick walls

1	Frame for door 900 x 2100mm high A : 5 B : 2 C : 2 D : 2 E : 1 F : 1 G : 1 H : 0 I : 0 J : 0		No	14		

GALVANIZED STEEL WINDOWS, DOORS, ETC

NOTE:

All windows shall be fitted standard brass fittings as recommended by the manufacturer

Burglar bars shall be standard pattern 5 x 20mm flat section bars corresponding horizontally and vertically with glazing bars

Burglar bars shall be fitted to opening sections only

Carried to Collection R

Bill No. 11
Metalwork

Standard industrial windows (unpainted) including burglar bars

2 Window size 900 x 1200mm high (W01) all as detailed on the architectural drawings attached to these bills of quantities

No 14

A : 0 B : 14 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

GALVANISED STEEL POSTS

Hot dipped galvanised mild steel post

3 73mm diameter x 4mm thick approximately 2 900mm high hollow section hot dipped galvanised mild steel posts with 200 x 200 x 6mm U-shaped beam support four times holed on both sides welded on top end and 200 x 200 12mm thick base plate with four times holed and plugged to concrete with M 12 Cemical anchors and plugged to concrete with M12 Chemical anchors (Bolts elsewhere measured)

No 8

A : 0 B : 8 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

4 M12 x 100mm Chemical anchor bolts

No 40

A : 0 B : 40 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

5 M12 x 100mm bolts

No 80

A : 0 B : 80 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 0

Carried to Collection

R

Bill No. 11
Metalwork

Bill No. 11

Metalwork

COLLECTION

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Bill No. 11
Metalwork

Item No		Quantity	Rate	Amount

BILL NO. 12

PLASTERING

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Method :

The method to be used shall be either the monolithic method or the bonded method

Carried to Collection R

Preparation :

For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc. is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic

Mix :

Granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

Panels :

Granolithic shall be laid in panels not exceeding 14m\'b2 for monolithic finishes, not exceeding 9,5m\'b2 for bonded finishes and not exceeding 6m\'b2 for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints

Laying :

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be thoroughly compacted and lightly wood floated to the required levels

Carried to Collection

R

Bill No. 12
Plastering

	After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened. Any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated		
	Curing, seasoning and protection :		
	Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying		
	Colour :		
	Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour		
	SCREEDS		
	Screeds wood floated on concrete		
1	25mm Thick on floors and landings A : 0 B : 0 C : 0 D : 0 E : 3 F : 2 G : 2 H : 0 I : 0 J : 0	m2	476
	INTERNAL PLASTER		
	Cement plaster on brickwork		
2	On walls A : 0 B : 85 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	85
3	On narrow widths A : 0 B : 7 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	7
	Carried to Collection		
	Bill No. 12 Plastering		R

AIR GRATINGS

4 235 x 157mm White plastic plain pattern air grating fixed flush with plaster face

A : 0 B : 8 C : 0 D 0
E : 0 F : 0 G : 0 H 0
I : 0 J 0

No 8

R

Carried to Collection

Bill No. 12
Plastering

Bill No. 12

Plastering

COLLECTION

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Bill No. 12
Plastering

Item No		Quantity	Rate	Amount

BILL NO. 13

PLUMBING AND DRAINAGE (PROVISIONAL)

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Wire gratings:

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

Stormwater channels:

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

Carried to Collection R

Bill No. 13
Plumbing & Drainage (Provisional)

French drains:

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

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc. all in accordance with the manufacturer's instructions and disposal of surplus material on site

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

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

Sealing of edges:

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

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 or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

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

Carried to Collection R

Bill No. 13
Plumbing & Drainage (Provisional)

High density polyethylene (HDPe) pipes and fittings:

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

Polycop polypropylene pipes:

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

Copper pipes:

Pipes shall be hard drawn and half-hard Maksal pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be 'Cobra Watertech' or equal approved type. Capillary solder fittings shall comply with ISO 2016

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

Reducing fittings:

Where fittings have reducing ends or branches they are described as 'reducing' and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

Fixing of pipes:

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

Carried to Collection R

Bill No. 13
Plumbing & Drainage (Provisional)

Paper wrapping to pipes:

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

Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS

Densyl petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with 25% overlaps. Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, Layflat sheeting, securing of same, etc

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

Laying, backfilling, bedding, etc. of pipes:

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with SANS

General:

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

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc. shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material off site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc., steel pipes, copper pipes, etc

Carried to Collection R

Bill No. 13
Plumbing & Drainage (Provisional)

	Descriptions of WC pans, slop hoppers, etc. shall be deemed to include for joints to soil pipes (pan connectors are separately measured)			
	As-built drawings:			
	The contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)			
	RAINWATER DISPOSAL			
	0.8mm Seamless aluminium			
1	125 x 75mm Ogee eaves gutters A : 80 B : 29 C : 34 D : 8 E : 13 F : 8 G : 8 H : 0 I : 0 J : 0	m	181	
2	Extra over eaves gutter for stopped end A : 4 B : 4 C : 4 D : 4 E : 4 F : 4 G : 4 H : 0 I : 0 J : 0	No	28	
3	Extra over eaves gutter for angle A : 4 B : 4 C : 4 D : 4 E : 4 F : 4 G : 4 H : 0 I : 0 J : 0	No	28	
4	Extra over eaves gutter for outlet for 100mm pipe A : 4 B : 4 C : 4 D : 4 E : 4 F : 4 G : 4 H : 0 I : 0 J : 0	No	28	
5	Extra over rainwater pipe for bend A : 8 B : 8 C : 8 D : 8 E : 8 F : 8 G : 8 H : 0 I : 0 J : 0	No	56	
6	Extra over rainwater pipe for shoe A : 4 B : 4 C : 4 D : 4 E : 4 F : 4 G : 4 H : 0 I : 0 J : 0	No	28	
	Carried to Collection			R
	Bill No. 13 Plumbing & Drainage (Provisional)			

7	100 x 75mm Rainwater pipes A : 10 B : 10 C : 10 D : 10 E : 10 F : 10 G : 10 H : 0 I : 0 J : 0	m	70
	SANITARY FITTINGS		
	"Atlas" or equally approved		
8	"Christy-382" Wash hand basin (colour granite) code 085202 size 387 x 395mm wide with two tap holes including 40mm waste union A : 0 B : 0 C : 0 D : 0 E : 2 F : 1 G : 1 H : 0 I : 0 J : 0	No	4
9	"VIP 200" pedestal with seat and lid (colour granite) code 101235 size 387 x 518mm high with foot piece and VIP 200 inlet funnel - 224, inserted in concrete cover slab of pit A : 0 B : 0 C : 0 D : 0 E : 2 F : 2 G : 2 H : 0 I : 0 J : 0	No	6
	TRAPS ETC		
	"Cobra Watertech" or equally approved		
10	32mm 340 CP bottle trap including C-342/1 with tail pipe, C-342/2 capnut and C-342/3 wall flange A : 0 B : 0 C : 0 D : 0 E : 2 F : 1 G : 1 H : 0 I : 0 J : 0	No	4
	TAPS, VALVES, ETC		
	"Cobra" or equally approved		
11	"Code - 401" or equally approved CP Basin set comprising one pair 15mm "Star" pillar taps including basin waste plug (Code - 301) or equally approved with chain, stay and backnut A : 0 B : 0 C : 0 D : 0 E : 2 F : 1 G : 1 H : 0 I : 0 J : 0	No	4
	Carried to Collection		R
	Bill No. 13 Plumbing & Drainage (Provisional)		

WATER SUPPLIES

Class 1 copper pipes

12	15mm Pipes A:0 B:0 C:0 D:0 E:4 F:2 G:2 H:0 I:0 J:0	m	8			
13	22mm Pipes A:0 B:0 C:0 D:0 E:3 F:2 G:2 H:0 I:0 J:0	m	7			
14	15mm Pipes chased into brick walls A:0 B:0 C:0 D:0 E:4 F:2 G:2 H:0 I:0 J:0	m	8			
15	22mm Pipes chased into brick walls A:0 B:0 C:0 D:0 E:3 F:2 G:2 H:0 I:0 J:0	m	7			

Extra over class 1 copper pipes for capillary fittings

16	15mm Fittings A:0 B:0 C:0 D:0 E:7 F:5 G:5 H:0 I:0 J:0	No	17			
17	22mm Fittings A:0 B:0 C:0 D:0 E:4 F:2 G:2 H:0 I:0 J:0	No	8			

Copper overflow and service pipes

18	15mm Bent service pipe average 450mm girth and joint to copper and fittings A:0 B:0 C:0 D:0 E:2 F:1 G:1 H:0 I:0 J:0	No	4			

Carried to Collection R

Bill No. 13
Plumbing & Drainage (Provisional)

Bill No. 13

Plumbing & Drainage (Provisional)

COLLECTION

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Item No		Quantity	Rate	Amount

BILL NO. 14

GLAZING

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

Float glass

The term 'float glass' is used for monolithic annealed glass

Laminated glass

Laminated glass to have polyvinyl butyral (PVB) interlayer(s)

Carried to Collection R

Bill No. 14
Glazing

GLAZING TO STEEL WITH PUTTY

Note: Tenderers are referred to architect's drawings annexed to these bill of quantities.

Glazing to conform with "The South African Glass & Glazing Association (SAGGA)" and shall comply with the National Building Regulations and Building Standards Act 103 of 1977 and SANS 10137 Code of Practice for the Installation of Glazing in Buildings

6mm Clear toughened safety glass puttied in with steel window putty as per SANS 10400:N

1	Panes exceeding 0,5m2 and not exceeding 2m2 A : 15 B : 15 C : 6 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	36			

TOPS, SHELVES, DOORS, MIRRORS, ETC

6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete

2	Mirror 550 x 550mm high A : 0 B : 0 C : 0 D : 0 E : 1 F : 1 G : 1 H : 0 I : 0 J : 0	No	3			

Glazing Certificate

3	Issue of AAAMSA Glass & Glazing Certificate by registered and authorised entity		Item			

Carried to Collection R

Bill No. 14
Glazing

Bill No. 14

Glazing

COLLECTION

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Bill No. 14
Glazing

Item No		Quantity	Rate	Amount

BILL NO. 15

PAINTWORK

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

SUPPLEMENTARY PREAMBLES

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent

PAINTWORK ETC TO PREVIOUSLY PAINTED WORK

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Carried to Collection R

Previously painted metal surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal

Previously painted wood surfaces

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

COLOURS

Colours, etc.

Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

PAINTWORK ETC TO PREVIOUSLY PAINTED WORK

ON FLOATED PLASTER

Prepare surfaces and remove all loose material, apply one coat "Plascon or equally aproved Professional Plaster Prime (PP700)" thinned 20% and two coats "Plascon Egg Shell Enamel (PSB700)" paint

1	On internal walls				m2	941
	A : 392	B : 0	C : 157	D : 157		
	E : 78	F : 78	G : 78	H : 0		
	I : 0	J : 0				
			Carried to Collection			R

Bill No. 15
Paintwork

2	On external walls A : 252 B : 0 C : 126 D : 126 E : 84 F : 84 G : 84 H : 0 I : 0 J : 0	m2	756	
	ON PLASTERBOARD			
	Prepare surfaces and remove all loose material, apply one coat "Plascon Merit Plaster Primer or equally aproved" and two coats "Plascon Velvaglo Polyurethane Enamel or equally aproved" paint			
3	On ceilings and cornices A : 0 B : 0 C : 0 D : 52 E : 48 F : 48 G : 48 H : 0 I : 0 J : 0	m2	196	
	ON METAL			
	Two coats "Silvakote" or equally approved bituminous aluminium paint			
4	On 0.85mm profile troughed/ribbed roof sheeting A 482 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	482	
	PAINTWORK ETC TO NEW WORK			
	ON FLOATED PLASTER			
	Prepare surfaces and remove all loose material, apply one coat "Plascon or equally aproved Professional Plaster Prime (PP700)" thinned 20% and two coats "Plascon Egg Shell Enamel (PSB700)" paint			
5	On internal walls A : 0 B : 117 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 0	m2	117	
	Carried to Collection			R

Bill No. 15
Paintwork

ON PLASTERBOARD

Prepare surfaces and remove all loose material, apply one coat "Plascon Merit Plaster Primer or equally aproved" and two coats "Plascon Velvaglo Polyurethane Enamel or equally aproved" paint

6	On ceilings and cornices				m2	441
	A : 245	B : 98	C : 98	D : 0		
	E : 0	F : 0	G : 0	H : 0		
	I : 0	J : 0				

ON FIBRE-CEMENT

Prepare surfaces and remove all loose material, apply one coat "Plascon Merit Plaster Primer or equally aproved" and two coats "Plascon Velvaglo Polyurethane Enamel or equally aproved" paint

7	On fascias and barge boards				m2	83
	A : 21	B : 11	C : 12	D : 13		
	E : 8	F : 8	G : 8	H : 0		
	I : 0	J : 0				

ON WOOD

Spot, sand down and prepare wood surfaces and apply three coats "Plascon Woodcare Woodcoat Polyurethane or equally aproved" matt clear varnish

8	On doors				m2	53
	A : 19	B : 8	C : 8	D : 8		
	E : 4	F : 4	G : 4	H : 0		
	I : 0	J : 0				

Prepare surfaces and remove all loose material, apply two coats carbolineum paint

9	On trusses				m2	31
	A : 13	B : 5	C : 5	D : 3		
	E : 2	F : 2	G : 2	H : 0		
	I : 0	J : 0				

Carried to Collection R

Bill No. 15
Paintwork

	ON METAL			
	Hot dipped galvanised, primed with approved 2 coats "Plascon Metal Galvanised Iron Primer - Code: GIP 1) steel alkyline primer and allow drying between the coats and 3 coats (Plascon Arcylic Paint Wall and All Code: TWA Tint base) or equally approved. colour to Architect			
10	On door frames etc A : 3 B : 1 C : 1 D : 1 E : 1 F : 1 G : 1 H : 0 I : 0 J : 0	m2	7	
11	Window frames, etc, A : 38 B : 11 C : 15 D : 10 E : 4 F : 4 G : 4 H : 0 I : 0 J : 0	m2	86	
	Carried to Collection			R

Bill No. 15
Paintwork

Bill No. 15

Paintwork

COLLECTION

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	78	
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Bill No. 15
Paintwork

Item No		Quantity	Rate	Amount

BILL NO. 16

EXTERNAL WORK

Key:	Location Description
A	Block A (5 classroom)
B	Block B (New 2 classroom)
C	Block C (2 classroom)
D	Block D (Principal office)
E	Block E (Ablution)
F	Block F (Ablution)
G	Block G (Ablution)
H	Block H (To be demolished)
I	General
J	External works

Tenderers are referred to the Model Preambles for All Trades as published by the Association of South African Quantity Surveyors (Tel. 011-315 4140) and the Architectural, Structural and Electrical Information before pricing this Bill of Quantities

The tenderer is referred to the relevant clauses in the ASAQS Model Trades Preambles 2008 which are not included in the tender document but will be deemed to be read in conjunction with same

Explosives :

No explosives whatsoever may be used for demolition purposes unless otherwise stated

General :

The contractor shall carry out the whole of the works with as little mess and noise as possible and with minimum disturbance to adjoining classroom blocks and their students. He shall provide proper protection and provide, erect and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the principal agent

Carried to Collection R

Bill No. 16
External Works (Provisional)

Water supply pipes and other piping that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the principal agent

Removal of materials :

Where removal is included in the heading, sub-heading or item description, prices shall be deemed to include for the necessary costs in removal and appropriate disposal of materials including but not limited to labour, transportation and disposal costs. No further claims in this regard will be entertained

DEMOLITIONS

GENERAL NOTES

Demolitions, etc. shall be deemed to include for the removal of all rubble, debris, etc. from the site to a dumping-site to be found by the contractor.

Demolition to proceed in stages during construction period.

Old materials to become the property of the contractor

Old materials from alterations, except where described to be re-used or handed over, become the property of the contractor.

Old materials to be carted away

Old materials from alterations, except where described to be re-used or handed over, as well as all rubbish, etc. must be regularly carted from the site and not be allowed to accumulate on or around the site.

Old materials not to be re-used

Non of the old materials from alterations are to be used for new work, except where specifically described being set-aside for re-use.

Carried to Collection R

Bill No. 16
External Works (Provisional)

Handing over materials

Where certain materials or articles from demolitions or articles are described as to be handed over by the contractor to the Regional Representative or Representative/Agent, such materials or articles shall be property stored by the contractor, until handing over thereof. The contractor must obtain an official receipt listing the materials or articles and dates of handing over. If the contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in hi possession and he will be held liable to the Department for the full replacement value thereof, which amount will be deducted from any monies due to the contractor.

Existing Buildings / Occupied

Tenderers attention is drawn to the fact that the existing premises is presently occupied by the Staff, who will have the right to take out and remove their own furniture, fixtures and fittings, before handing the building to the contractor.

Existing Furniture, Fittings, Equipment, etc

The contractor shall not remove or damage any furniture, fittings, equipment, etc unless otherwise indicated, and extreme care should be exercised not to damage any existing items. items to be removed would be indicated as such in this Bills of Quantities, and it will in these instances be the responsibility of the contractor to protect and secure these items against damage or theft.

Items to be removed, moved or disposed

Items to be removed, moved or disposed of by the contractor would be indicated as such in this Bills of Quantities, and it will in these instances be the responsibility of the contractor to protect and secure these items against damage or theft.

Carried to Collection R

Bill No. 16
External Works (Provisional)

Disconnection of services

The electrical installation, air-conditioning, telephone systems and fittings shall not be disconnected or disturbed in any way by the contractor, but due notice shall be given to the Principal Agent who would make the necessary arrangements for the removal, alterations, etc. thereto. The contractor will be liable for any damage to this work and shall make some good at his own expense.

Electrical - Mechanical - or airconditioning installation

The removal of, and alterations to, the electrical, mechanical or airconditioning instalation shall be executed by the Electrical sub-contractor or a specialist contractor appointed by the contractor.

Light fittings, plug boxes and light switches will, where indicated by the Principal Agent, be taken down/out by the sub-contractor. The wires will also be drawn by the sub-contractor.

All the fitiings, wires, etc will be handed to the Principal Agent.

Care to avoid structural or other damage

In taking down and removing existing work the utmost care shall be observed to avoid any structural or other damage to the remaining portions of the building. The contractor shall cover up and protect injury all work not removed and shall make good at his own expense any damage that may occur.

Care to/of existing surfaces, structures and finishes

All work must be done carefully so as not to damage or harm any existing adjoining surfaces. Any damage that occurs will be repaired to be the same as the original at the contractors expense.

Carried to Collection R

Bill No. 16
External Works (Provisional)

Dimensions and heights

The contractor is advised to check all dimensions and heights affecting the existing buildings on site against those indicated on the plans, as he will be held responsible for all new work being in the correct sizes. Should any discrepancies be found, he is to refer them to the Principal Agent for correction, before proceeding with the work.

Prices for demolitions

Prices for the demolition of any portion of the structure shall include for its demolition complete with all surfaces finishes such as plaster, screeds , etc, all attached items of joinery such as skirtings and all reinforcements, conduiting, pipes, lintels, etc. built into that portion of the structure.

Prices for the removal of doors and frames shall include for removal of fanlights, ironmongery, architraves and other associated trim.

Prices for the removal of windows shall include for the removal of glass, louvres, buglar bars attached to the window, window sills and blinds.

Prices for the removal of sanitary fittings shall include for the removal of all pipework, traps, brackets and fittings.

Demolishing and removing

1	Single storey existing building (Block H) with double pitched roof overall area 98m² on plan including all necessary items, grubbing out foundations, etc A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 1 I : 0 J : 0	No	1			

Carried to Collection R

Bill No. 16
External Works (Provisional)

Budgetary allowances

2	Provide the Amount of R 15 000.00 (Fifteen thousand Rand) for grubbing out foundations, etc as determined by the Civil Engineers requirements A : 0.00 B : 1.00 C : 0.00 D : 0.00 E : 0.00 F : 0.00 G : 0.00 H : 0.00 I : 0.00 J : 0.00	Item	15 000.00		

THE FOLLOWING TO STORMWATER CHANNELS TO BUILDINGS

Reinforced concrete cast in-situ channels

3	900mm Wide x 130mm thick overall mesh reinforced concrete "V"-shaped stormwater channels(1000mm wide) and apron slab (1000mm wide) combination of 25 Mpa/19mm concrete construction, "V" -shaped stormwater channel section to be 100mm thick at center of 500mm wide adjacent surfaces, and both "V" -shaped stormwater channel and apron slab with and including Ref 193 mesh reinforcement, 250 micron waterproof sheeting and rough formwork (Degree of Accuracy III) not exceeding 300mm high extreme to vertical edges of channels and apron slabs. Channels and apron slabs to be cast in 1000mm long panels, with and including bitumen impregnated fibreboard joints between adjacent panels and between panels and adjacent brick walls with approved joint sealant to all joints, and the whole to have a wood floated finish A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 296	m	296		
4	Extra over 900mm wide concrete stormwater channel/apron slab for corner A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 22	No	22		

Class 34 uPVC pipes

5	110mm Pipes laid in and including trenches not exceeding 1m deep A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 42	m	42		

Carried to Collection R

Bill No. 16
External Works (Provisional)

Gulleys, inlet manholes, inspection chambers, etc

6 Inspection chamber 600 x 600mm and not exceeding 750mm deep internally complete — No — 5

A : 0 B : 0 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 5

Gratings, covers, etc

7 300 x 450mm x 53.2kg Cast iron dished grating and frame (Saint Gobain code 2880) — No — 5

A : 0 B : 0 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 5

THE FOLLOWING TO RAIN WATER HARVESTING TANKS, ETC.

Polyethlene water storage tanks

8 5000 Litres Jo-jo rainwater tank or similar approved, with 75mm Diameter opening for downpipe from gutter including 50mm Diameter overflow opening with 4mm Diameter galvanised wire looped through top of tank isolated with 15mm diameter hose to top of tank and anchored to top of slab with 'Hilti' hooks drilled into slab at all four corners and 15mm hose bib tap — No — 6

A : 0 B : 0 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 6

Tank stand

9 Excavation in earth not exceeding 2m deep to reduce levels — m3 — 63

A : 0 B : 0 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 63

10 Risk of collapse of sides of trench and hole excavations not exceeding 1,5m deep — m2 — 179

A : 0 B : 0 C : 0 D : 0
E : 0 F : 0 G : 0 H : 0
I : 0 J : 179

Carried to Collection R

Bill No. 16
External Works (Provisional)

11	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk) off site to be located by the contractor A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 10	m3	10
12	Backfilling to trenches, holes, etc., A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 8	m3	8
13	Keeping excavations free of all water other than subterranean water A : 0.00 B : 0.00 C : 0.00 D : 0.00 E : 0.00 F : 0.00 G : 0.00 H : 0.00 I : 0.00 J : 6.00	Item	
14	Reinforced concrete Class 25/19 in surface beds A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 22	m3	22
15	Reinforced concrete Class 25/19 in strip footings A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 24	m3	24
16	Finishing top surfaces of concrete smooth with a power float to surface beds, slabs, etc to falls A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 112	m2	112
17	Rough formwork to sides edges, risers, ends and reveals not exceeding 300mm high or wide A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 112	m	112

Carried to Collection R

Bill No. 16
External Works (Provisional)

18	Steel reinforcement of various diameters to concrete foundations A : 0.00 B : 0.00 C : 0.00 D : 0.00 E : 0.00 F : 0.00 G : 0.00 H : 0.00 I : 0.00 J : 4.80	t	4.80
19	Type 617 fabric reinforcement A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 112	m2	112
20	One Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 56	m2	56
21	20mm COBRA 541 or equally aproved tank locking tap fitted to a 22mm extension pipe with barrel nipple & galvanised socket A : 0 B : 0 C : 0 D : 0 E : 0 F : 0 G : 0 H : 0 I : 0 J : 6	No	6

Carried to Collection R

Bill No. 16
External Works (Provisional)

Bill No. 16

External Works (Provisional)

COLLECTION

	Page No	Amount
Total Brought Forward from Page No.	81	
	82	
	83	
	84	
	85	
	86	
	87	
	88	
	89	
Carried to Summary		R

PREAMBLE TO THE SCHEDULE OF QUANTITIES

1 The General Conditions of Contract, the Special and Project Specific Conditions of Contract, the Specifications (including the Project Specifications, Technical Specifications and Additional Specifications) and the Drawings shall be read in conjunction with the Schedule of Quantities.

2 The Schedule comprises items covering the Contractor's profit and costs of general liabilities and of the construction of temporary and permanent Works.

Although the Tenderer is at liberty to insert a rate of his own choosing for each item in the Schedule, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates inserted in the schedule by the Contractor.

Where applicable, Clause 8 of each Standardised Specification, the measurement and payment clause of each Particular Specification, and the Scheduled Payment items read together with the relevant clauses of the Standard, Project, Technical and Additional Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations.

For example, where PFA 04.02 and FA 15.02 appear in the "Payment Refers To" column, the specific payment item to be priced shall include all work to be done, material, labour, etc, as described and specified in the Standard and Particular Specifications, Clauses PFA 04.02 and FA 15.02. The "Payment Refer" item numbers appearing in the Schedule of Quantities thus refer to the corresponding item numbers in the Specifications.

3 Descriptions in the Schedule of Quantities are abbreviated and may differ from those in the Standardised Specifications. No considerations will be given to any claim submitted on these bases. Should any requirements of the measurement and payment clause of the appropriate Standardised Specification(s) be contrary to the terms of the Schedule, the requirement of the appropriate Standard, Project, Particular, Technical or Additional Specification as the case may be, shall prevail.

4 Unless stated to the contrary, items are measured nett in accordance with the Drawings without any allowance having been made for waste.

5 The amounts and rates to be inserted in the Schedule of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Tender is based.

6 An amount or rate shall be entered against each item in the Schedule of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Schedule.

Should the Tenderer group a number of items together and tender one lump sum for such group of items, the single tendered lump sum shall apply to that group of items and not to each individual item, or should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed to be nil.

7 The Tenderer shall enter a rate or lump sum for each item in the Schedule of Quantities in BLACK INK.

8 The Tenderer is also referred to paragraph 7.2 of form PW 782 (07/99): Conditions of Tender, enclosed to the Tender documents.

SCHEDULE NO 1: INSTALLATION A ELECTRICAL DISTRIBUTION SYSTEM - NEW ELECTRICAL WORK
EMPUNGENI S. SCHOOL

ITEM NO	DESCRIPTION		UNIT	QTY	RATE	TOTAL
A	**LOW VOLTAGE CABLE**					
	Provide, install, test and commission the following 1000V PVC/SWA/PVC copper cables. Prices shall allow for the installation of cables in cable ducts, through sleeves, conduit or installation against vertical and horizontal levels.					
1	10mm² x 2 Core ECC PVC Copper Cable					
		Supply	m	216		
		Install	m	216		
2	6mm² x 2 Core ECC PVC Copper Cable					
		Supply	m	190		
		Install	m	190		
B	**TERMINATIONS**					
	Terminate and make off the following 1000V PVC/SWA/PVC cables in a cable gland according to the manufacturer's instructions. Provide the cores with lugs and bolt onto terminals. The cable gland and marking of the cable shall also be allowed for.					
1	10mm² x 2 Core PVC Copper Cable					
		Supply	ea	6		
		Install	ea	6		
2	6mm² x 2 Core PVC Copper Cable					
		Supply	ea	6		
		Install	ea	6		
C	**CABLE SLEEVES**					
	Provide and install the following UPVC sleeves in the ground complete with mild-steel draw wire.					
1	50mm Sleeves					
		Supply	m	80		
		Install	m	80		
2	50mm Bends					
		Supply	ea	4		
		Install	ea	4		
3	Electrical 800 x 800 x 600mm double brick manhole complete with manhole cover					
		Supply	ea	2		
		Install	ea	2		
	Carried forward					

ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Brought forward					
D	**DISTRIBUTION BOARDS.** New distribution boards, kiosks, etc., supplied and installed in position, complete with all busbar work, switchgear, terminals, wiring, lacing, conduit terminations, meters, and all other items, including full labelling and legend card, all in accordance with the schematic distribution board drawings:				
1	Distribution board MDB, DB-A				
	Supply	ea	1		
	Install	ea	1		
2	Distribution board (DB-B)				
	Supply	ea	1		
	Install	ea	1		
3	Distribution board (DB-C)				
	Supply	ea	1		
	Install	ea	1		
4	Distribution board (DB-E) - Weatherproof				
	Supply	ea	1		
	Install	ea	1		
5	Distribution board (DB-F) - Weatherproof				
	Supply	ea	1		
	Install	ea	1		
6	Distribution board (DB-G) - Weatherproof				
	Supply	ea	1		
	Install	ea	1		
E	**EXCAVATIONS** All prices below shall include the excavation of trenches and holes, separating of stones, ground, and rock, levelling of trench bed, refill compacting and reparation of all surfaces to their original finish.				
1	Excavate in soft ground	m^3	66		
2	Excavate in soft rock	m^3	20		
3	Excavate in hard rock	m^3	6		
4	Suppy cable marker tape & Install 400mm below finished ground leve	m	406		
Carried forward					

ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Brought forward					
F	**REMOVAL OF EXISTING ELECTRICAL INSTALLATION**				
1	Allow the Net Sum of R6000.00 (Six Thousand Rand) for the removal of existing Electrical installation in Block A	Sum	1		
2	Allow the Net Sum of R4000.00 (FourThousand Rand) for the removal of existing Electrical installation in Block C	Sum	1		
G	**LIGHTNING PROTECTION INSTALLATION AND ISSUING OF CERTIFICATE FOR BLOCK A-D, B, C, E, F and G**				
1	Allow for the execution of a Soil Resistivity Survey for the site and for submitting a copy of the reports to the Engineer.	Sum	1		
2	Allow for the testing of the complete installation, including lightning protection earth electrodes and the issuing of test certificates for each block	No	6		
3	50mm PVC insulated aluminium conductor for bonding down conductors to earth rods, etc. inclusive of lugs, ferrules, bolts, etc.	m	110		
4	Supply and install corrosion resistant stainless steel terminal for roof connection points and and aluminium bond to take aluminium down conductor from roof terminals.	No.	20		
5	Supply and Install ferrules and lugs for bonding of any metalwork to air terminal system.	No	22		
6	Supply and install test point connection in each down conductor complete with 132x82x55mm deep screw lid enclosure.	No.	20		
7	Supply and Install 25mm pvc pipe	m	70		
H	**TESTING AND COMMISSIONING ELECTRICAL INSTALLATION, CABLES, DISTRIBUTION BOARDS AND ISSUING COC AS PER SANS 10142.**				
1	Distribution board MDB, DB-A	Sum	1		
2	Distribution board DB-B	Sum	1		
3	Distribution board DB-C	Sum	1		
4	Distribution board DB-E (Weatherproof)	Sum	1		
5	Distribution board DB-F (Weatherproof)	Sum	1		
6	Distribution board DB-G (Weatherproof)	Sum	1		
Carried forward					

ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Brought forward					
I	**ALLOWANCE FOR BUILDERS WORK**				
1	Allow the Net Sum of R23 000.00 (Twenty Three Thousand Rand) for builders work	Sum	1		
TOTAL SCHEDULE 1 CARRIED TO SUMMARY					

SCHEDULE NO 2: INSTALLATION B - ELECTRICAL INSTALLATION IN BUILDINGS - WORK EMPUNGENI S. SCHOOL: BLOCK A, B, C, D, E, F and G					
ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A	**CONDUIT**				
1	20mm Diameter PVC Conduit				
	Supply	m	910		
	Install	m	910		
2	25mm Diameter PVC conduit				
	Supply	m	730		
	Install	m	730		
B	**CIRCUIT WIRING** The supply and installation in conduit of stranded copper PVC insulated conductors in groups.				
1	2 x 1.5mm² and 2.5mm² earth wire				
	Supply	m	2730		
	Install	m	2730		
2	2 x 2.5mm² and 2.5mm² earth wire				
	Supply	m	2190		
	Install	m	2190		
3	Draw wire				
	Supply	m	1640		
	Install	m	1640		
C	**CONDUIT BOXES**				
1	50mm round PVC box flush in concrete & brickwork				
	Supply	ea	91		
	Install	ea	91		
2	50mm round Galvanized boxes surface in concrete & brickwork				
	Supply	ea	27		
	Install	ea	27		
3	100 x 100 x 50mm galvanised box flush in brickwork				
	Supply	ea	16		
	Install	ea	16		
4	100 x 50 x 50mm galvanised box flush in brickwork				
	Supply	ea	14		
	Install	ea	14		
D	**LIGHT FITTINGS** Luminaires and accessories supplied complete with lamps. All fittings to carry the SABS mark.				
1	Type A luminaires				
	Supply	ea	40		
	Install	ea	40		
Carried forward					

ITEM NO	DESCRIPTION		UNIT	QTY	RATE	AMOUNT
Brought forward						
2	Type B luminaires					
		Supply	ea	35		
		Install	ea	35		
3	Type C luminaires					
		Supply	ea	8		
		Install	ea	8		
E	**SMALL POWER** Supply and installation complete with all covers and fixings.					
1	Photo electric-cell with 65mm deep conduit box					
		Supply	ea	6		
		Install	ea	6		
2	Supply & Install 20A Double Pole , 220V Contactor					
		Supply	ea	6		
		Install	ea	6		
3	16A single socket outlets plus Euro type as per SANS 164-2, similar to Crabtree's Classic Combo Slimline Switched Socket					
		Supply	ea	16		
		Install	ea	16		
4	16A single lever one way light switch					
		Supply	ea	11		
		Install	ea	11		
5	16A single lever one way weatherproof light switch					
		Supply	ea	3		
		Install	ea	3		
F	**Earthing and bonding of complete installation**		sum	1		
G	**Test and Certify as per SANS 10142**		sum	1		
H	**Earth Electrode Installation**		sum	1		
TOTAL SCHEDULE 2 CARRIED TO SUMMARY						

EMPUNGENI PRIMARY SCHOOL

SUMMARY OF ELECTRICAL INSTALLATION

ITEM NO	DESCRIPTION	PAGE	AMOUNT
1	SCHEDULE NO 1: INSTALLATION A: ELECTRICAL DISTRIBUTION SYSTEM	95	
2	SCHEDULE NO 2: INSTALLATION B: ELECTRICAL INSTALLATION IN BUILDINGS	97	
	TOTAL OF SCHEDULE OF QUANTITIES - CARRIED TO FINAL SUMMARY		

ITEM NO.	FINAL SUMMARY	AMOUNT
	Section No.1	
1	Preliminaries	
	Section No.2	
1	Alterations (Provisional)	
2	Earthworks (Provisional)	
3	Concrete, Formwork & Reinforcement	
4	Masonry	
5	Waterproofing	
6	Roof Coverings	
7	Carpentry and Joinery	
8	Ceilings, Partitions & Access Flooring	
9	Floor Coverings, Wall Linings, etc	
10	Ironmongery	
11	Metalwork	
12	Plastering	
13	Plumbing & Drainage (Provisional)	
14	Glazing	
15	Paintwork	
16	External works (Provisional)	
	Section No.3	
1	Electrical works (Provisional)	
	Sub - Total	
	Vat @ 15%	
	Carried to Form of Tender **TOTAL**	

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

PART C3. SCOPE OF WORKS

C3.1 SCOPE OF WORKS
GCC FOR CONSTRUCTION WORKS (Edition 2 of 2010)

Scope of Works complied in accordance with SANS 10403 where reference is made to this part of SANS 1921-1:2004

Project title:	**eThekwini Region: Empungeni primary school: Storm Damage Phase 16**		
Tender no:	**ZNTD05328W**	**Project Code:**	**069027**

SECTION 1

1 EXTENT OF THE WORKS

1.1 EMPLOYERS OBJECTIVES

The employer's objective is to provide for the: Department of Education, KwaZulu-Natal Province a permanent, safe and hygienic facilities which comply with the Department's Norms and Standards.

1.2 OVERVIEW OF THE WORKS

This Project involves the Repairs and Renovations to Storm Damaged Schools in the eThekwini District.

1.3 EXTENT OF THE WORKS

The contract comprises the Repairs and Renovations to Storm Damaged Schools. The works include but not limited to General structural integrity including walls, foundations, and roof structures.
Roof; New IBR roof sheet replacement, Replace damaged rainwater goods, Replace ceilings, Replace fascia and barge boards, Replace doors, Replace broken windowpanes and glazing. Selected structural works where required.

1.4 LOCATION OF THE WORKS

The site is situated in Ethekwini region, KwaZulu Natal on the fringe of the town of Stanger.
GPS Co-ordinates for the site is 31.20091° S, -29.11042° E

1.5 TEMPORARY WORKS

All temporary work to comply with the Occupational Health and safety Act (Act 85 of 1993)

2 ENGINEERING

2.1 EMPLOYER'S DESIGN

Not applicable

2.2 DESIGN BRIEF

Not applicable

2.3 DRAWINGS

See list of drawings/Annexure's attached to this document.

2.4 DESIGN PROCEDURES

Not applicable

3 PROCUREMENT

3.1 PREFERENTIAL PROCUREMENT PROCEDURES

This tender will be subject to the implementation of the Preferential Procurement Regulations, 2022, pertaining to the Preferential Procurement Policy Framework Act, Act Number 5 of 2000 and the relevant Supply Chain Management Legislation and the KwaZulu-Natal Supply Chain Management Policy Framework published by the KwaZulu-Natal Provincial Treasury. Tenderers are referred to www.kzntreasury.gov.za for access to the relevant documents.
Tenderers are advised to familiarize themselves with the contents of the KwaZulu-Natal Supply Chain Management Policy Framework regarding Preference Point Systems, evaluation of tenders appeals and other matters.

3.2 RESOURCE STANDARD PERTAINING TO TARGETED PROCUREMENT

NOTE : This project will be adjudicated as not exceeding R 50,000 000,00

3.3 SCOPE OF MANDATORY SUBCONTRACT WORK

Not applicable

3.4 PREFERRED SUBCONTRACTORS/SUPPLIERS

Not applicable

3.5 SUBCONTRACTING PROCEDURES

Not applicable

4 CONSTRUCTION

4.1 APPLICABLE SANS 2001 STANDARDS FOR CONSTRUCTION WORKS

The Contractor is referred to the "Model Preambles to Trades - 2008", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification for full descriptions of materials and methods referred to in these Bills of Quantities/Lump Sum documents, insofar as they apply. The Contractor is advised to study the "Standard Preambles to all Trades", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification, before pricing Bills of Quantities/Lump Sum documents.
Where the description in the Bills of Quantities/Lump Sum documents differ from those in the Standard Electrical Specifications, the descriptions in the Bills of Quantities/Lump Sum documents are to apply. No claim whatsoever will be allowed in respect of errors in pricing due to brevity of description of items in the Bills of Quantities/Lump Sum documents which are fully described when read in conjunction with the relevant Preambles and/or Specifications. Suppliers of materials and the like, whose quality systems apply with one or more of the SABS/SANS ISO 9000 Series should be used whenever possible in the absence of a particular SABS/SANS Specification Standard Mark.
Wherever the words "shall be deemed to be included in the description", "shall be stated" or other words having the same effect, appear in the Standard System, it shall be deemed that all descriptions in these Bills of Quantities/Lump Sum documents incorporated such inclusions and statements whether specifically stated or not.

The Contractor is hereby informed that where SABS/SANS Specifications are referred to in these Bills of Quantities/Lump Sums documents and Specifications thereto, then ONLY the Specification of Work Clauses will apply. The method of measurement and payment clauses will NOT apply to this Contract.

The Contractor is hereby informed that risk of collapse and keeping excavations free from water (excluding subterranean water) generally are deemed to be included in the descriptions unless accommodated in the system of measurement. Please refer to the Geotechnical Investigation report when included at the end of these tender documents.
Whenever reference is made to "Sub-Contractor", "Nominated Sub-Contractor" or the like in the specifications included or referred to in these Bills of Quantities/Lump Sums documents, it shall be deemed to mean "Contractor" as defined.

4.2 APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS

See above 4.1

4.3 PARTICULAR / GENERIC SPECIFICATIONS

The Contractor is referred to the following documents whether attached to this document or not:

SPECIFICATION	PAGES
Specification for HIV/AIDS Awareness (CIDB)	HIV1 TO HIV3
Specific Construction, Safety, Health and Environmental Plan	
Model Preambles for Trades 2008	1 to 49
General Electrical Specification	E/1 to E/21
Lightning Protection Installation	LP/1 to LP/6

4.4 CERTIFICATION BY RECOGNIZED BODIES

Only contractors registered with the Electrical Contracting Board of South Africa in accordance with the Regulations of the Occupational Health and Safety Act will be accepted and permitted to do work under this contract.

4.5 AGREEMENT CERTIFICATES

Not applicable

4.6 PLANT AND MATERIAL PROVIDED BY THE EMPLOYER

Not applicable

4.7 SERVICES AND FACILITIES PROVIDED BY THE EMPLOYER

Not applicable

4.8 OTHER SERVICES AND FACILITIES

The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Administration.
The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.
The Contractor is advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.

5 MANAGEMENT

5.1 APPLICABLE SANS 1921 STANDARDS

Tenderers are referred to
SECTION 2 : SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 IN THIS DOCUMENT

5.2 RECORDING OF WEATHER

The Contractor shall keep record of abnormal climatic conditions to facilitate the adjudication of claims for extension of the contract period.

The Contractor shall allow in his programme for the following number of days for rain days (rain > 10mm per day) as per the table below:

CURRENT YEAR			YEAR + 1	YEAR + 2
January	w/days		3	3
February	w/days		3	3
March	w/days		3	3
April	w/days		3	3
May	w/days		3	3
June	w/days		3	3
July	w/days		3	
August	w/days		3	
September	w/days		3	
October	w/days		3	
November	w/days		3	
December	w/days	3	3	

5.3 MANAGEMENT MEETINGS

In order to facilitate the smooth functioning of the Works and to ensure the closest co-operation between all the parties concerned, the Employer will call for regular meetings to be held on the site, at which a senior member of the Contracting firm and the General Foreman of the Works will always be required to be present.
In addition to the above, other persons will be required to attend these meetings as and when their presence is necessary, e.g., Consultants in all disciplines, representatives of the various Sub-Contractors, etc.
Proper minutes of these meetings will be kept by the Employer\Principal Agent and copies will be circulated to all persons attending the meetings and to others who need to be kept informed.

5.4 FORMS FOR CONTRACT ADMINISTRATION

The Employer shall provide all necessary forms.

5.5 ELECTRONIC PAYMENTS

The Contractor shall provide all required information to the Employer to facilitate electronic payments upon request.

5.6 DAILY RECORDS

The Contractor shall keep daily records of people and equipment employed as well as a site diary in respect of work performed on the site.
At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all Sub-Contractors on the works each day.
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, currently used on the works.

5.7 BONDS AND GUARANTEES

The Contractor shall within 10 calendar days after receiving notice from the Engineer and prior to receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data.

5.8 PAYMENT CERTIFICATES

Requirements will be in accordance with the Employers prescriptions.

5.9	**PERMITS** The Contractor is advised that, in the case of an existing building or institution, all security measures in force will remain in operation and he must acquaint himself and his Employees with them as he and his Employees will at all times be subject to these measures. The Contractor will on no account extend his operations beyond the confines of the building site as indicated by the Employer and must ensure that all his Employees are made aware of these limits. Any Employee disregarding this instruction and found outside the limit of the building site without authority, shall be redeployed immediately and shall not again be employed on this Contract. The Contractor will be responsible for ensuring that this instruction is strictly enforced and must provide and remove upon completion or when directed, such other necessary temporary barriers, fences, etc., as may be required and is to allow opposite this item for any charges he may wish to make in this connection. The Employer will accept no responsibility whatsoever for damage to or the loss of plant, materials, etc., from the site
5.10	**PROOF OF COMPLIANCE WITH THE LAW** The following certificates must be provided before first delivery is taken: - HIV/STI Report (Bound into this document) - Electrical Compliance Certificate - Plumbing Compliance Certificate - Lightning Certificate - Soil Protection Certificate - Concrete test and cube certificates - Waterproofing Guarantee certificates - TR1 and TR2 prefabricated roof truss certificates - Soil compaction certificates - Electrical and Mechanical test certificates - Plumbing and drainage pressure test certificates - Fire Compliance Certificate - Entomology Certificate - SANS 10400-A:2010 compliance certificates - Latest National Building Regulation
5.11	**INSURANCE PROVIDED BY THE EMPLOYER** Not Applicable

SECTION 2

SPECIFICATION DATA ASSOCIATED WITH SANS 1921-2004

Clause Numbers	
4.1.7	**The requirements for drawings, information and calculations for which the Contractor is responsible are:**
	Prefabricated roof trusses design must be submitted for approval 30 days prior to erections.
4.2.1	**The responsibility strategy assigned to the Contractor for the works is:**
	Strategy A
4.2.2	**The structural engineer is:**
	Architronic
4.2.3	**Drawings & other info are to be submitted in accordance with the contractors programme**
	N/A
4.3	**The planning, programme and method statement are to comply with the following:**
	N/A

4.12.1	**Samples of materials**
	The work is to be executed with materials of the best specified and in the most substantial and workmanlike manner under the inspection of the Employer and to his satisfaction. The Contractor shall furnish, without delay, such samples as called for or may be called for by the Employer, who may reject all materials or workmanship not corresponding with the approved sample. The samples of materials, workmanship and finishes that the Contractor is to provide and deliver to the employer are: - Tile sample. - Brick sample. - Light fitting sample. - Screed panel 2m x 2m impact test. - Tested trial mix to be approved by the Engineer.
4.12.2	**Fabrication drawings that the contractor is to provide to the employer are:**
	None
4.12.3	**Office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are:**
	OFFICE FOR FOREMAN
	Provide, erect, maintain and remove at completion a suitable temporary office for the Contractor or his Foreman, perfectly secured, lighted and ventilated and having a desk with drawers.
	TELEPHONE
	The Contractor shall provide a telephone on the site for the use of the Contractor and all Sub-Contractors for the duration of the Contract, and must make the necessary application for connection, give all notices and pay all fees, rentals and charges for the service and also for all calls.
	OFFICE FOR INSPECTOR OF WORKS
	Provide, erect, maintain and remove at completion a well constructed temporary office for the Inspector of Works not less than 4 x 3 m on plan and 3 m high to eaves to the approval of the Employer. The office shall be constructed of wood framing covered externally with corrugated iron or corrugated asbestos and with a lean-to roof covered with the same material as the external wall covering. The office shall be lined internally with soft board or other approved material and a ceiling shall be provided of the same material as the internal lining. A suspended wood floor shall be provided and is to finish not less than 300 mm above the ground level. A lockable door and a window, which provides adequate light and ventilation, shall be fitted. An office constructed of 115 mm thick brick-work and provided with a screeded concrete floor and roofed and ceiled as above described may be accepted as an alterative but prior permission of the Employer will be necessary before construction of such an office is commenced and his requirements shall be stated and fulfilled by the Contractor. The office shall be fitted in an approved manner with a sloping topped desk of height and length suitable for the laying out and studying of drawings, a desk or table with not less than two lock-up drawers, shelves, seating and wash-stand, and the Contractor shall provide all necessary attendance.
	TELEPHONE IN OFFICE FOR INSPECTOR OF WORKS
	The Contractor shall arrange for the installation of a lockable telephone in the Office for the Inspector of Works for the duration of the Contract. The Contractor will be required to make the necessary application for connection and give all notices on behalf of the Employer. The Employer will, however, be responsible for the direct payment of all fees, rentals and other charges by Telkom for the service for the Inspector of Works and for all calls made from this telephone.

	SHED
	Provide, erect, maintain and remove at completion, ample temporary sheds for the proper storage of materials and for the use of the workmen, and remove when no longer required.
4.14.6	**The requirement for provision and erection of signboards are:**
	Supply, erect, maintain and remove at completion a painted notice board, size overall 2800 x 2345 mm high sign written to detail as Drawing No. T9506 which drawing is available from offices of the Department of Public Works. Only the official notice board is to be displayed on the site and no Sub-Contractor's boards will be permitted. The Contractor, at his own cost, may provide a board on which all sub-contract firms' names may be sign written. The notice board is to be to the approval of the Employer and is to be maintained in first class condition and placed where directed at the entrance to the site and remain there for the duration of the Contract.
4.17.1	**Requirement for the termination, diversion or maintenance of existing services:**
	Should the Contractor come in contact with any underground cables or pipes during excavations, immediate notification must be made to the Employer and all work in the vicinity of such cables, pipes, etc., shall cease until authority to proceed has been obtained from the Employer. Should the Contractor damage underground cables or pipes resulting in a disruption of services to an existing institution such damage shall be repaired immediately.
4.17.3	**Services which are known to exist on the site:**
	Investigate and provide detail drawings.
4.17.4	**Requirement for detection apparatus**
	None
4.18	**ADDITIONAL HEALTH AND SAFETY REQUIREMENTS ARE:**
	By the submission of a tender, any Tenderer will, if awarded the contract to which this tender document relates, be deemed to be the mandatory as envisaged by Section 37 (2) of the Act. As a mandatory the successful Tenderer will be deemed to be the "principal contractor" and an employer in his/her/their own right with duties as prescribed in the Act and accordingly will be deemed to have agreed to be solely responsible for ensuring that in connection with the service to which this tender document relates, all work will be performed and machinery and plant used in accordance with the Act. Should the Contractor, for whatever reason be unable to perform as required by the Act, the Contractor undertakes to inform the Employer accordingly. Tenderers are advised that it is a Condition of this Tender that a 'Construction Phase Safety, Health and Environmental Plan' specifically relates to the project for which tenders are being submitted and must be prepared by the Tenderer and submitted with the other tender documents at the time of tender. Failure to do so will invalidate the tender. Tenderers are therefore advised to study the 'Construction Safety, Health and Environmental Specification' which is issued as part of this tender document, the Model Preambles to Trades - 2008, any project Specification included in this tender document and any and all drawings which are referred to and issued as part of this tender document before preparing their own project specific 'Construction Phase Safety, Health and Environmental Plan' . Tenderers are also advised that such a plan which is submitted with a tender but is incomplete or considered inadequate by the Employer or his Representative will invalidate the tender. The Contractor will be deemed to have satisfied himself with his obligations in terms of the Act and to have allowed for all costs arising from compliance with the Act as no claim for extra costs arising from compliance with, and obligations in terms of the Act will be entertained.
4.22	**WORK BY NOMINATED AND SELECTED SUBCONTRACTORS COMPRISE:**
	N/A

C3.2 - SPECIFICATION FOR HIV/AIDS AWARENESS

1 Scope

This generic specification contains requirements applicable to the reduction of the risk of transfer of the HIV virus between and among construction workers and the local community through the following four strategies:

a) raising awareness about HIV/AIDS;

b) providing construction workers with access to condoms;

c) HIV counselling, testing and referral services; and

d) Sexually Transmitted Infection diagnosis and treatment.

2 Normative references:

The following standard contains provisions that, through reference in this text, constitute provisions of this standard:

SANS 4074 ISO 4074, *Condom Rubbers*

3 Definitions and Abbreviations

3,1 Definitions

Construction Worker: all persons in the employ of the contractor or in the employ of any of the subcontractors contracted by the contractor.

Local Community: the communities local to the site which are most likely to have contact with the construction worker and, in particular, sex workers in those communities.

Service provider: the natural or juristic person recognised by the South African Department of Health as specialist in conducting Aids Awareness Programmes.

3,2 Abbreviations

STI: Sexually transmitted infection

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immune Deficiency Syndrome

4 Objectives

The objectives are to:

a) reduce the risk of transfer of the HIV virus between and among construction workers and the local community;

b) raise awareness amongst construction workers and the local community of the risk of infection with the HIV virus;

c) promote early diagnosis; and

d) assist affected individuals to access care and counselling.

5 Requirements

5,1 General requirement

The contractor shall, in order to satisfy the objectives stated in 4:

a) make condoms complying with the requirements of SABS ISO 4074 available to all construction workers at readily accessible points on the site, suitably protected from the elements, for the duration of the contract;

b) either place and maintain HIV/AIDS awareness posters of size of not less than A1 in areas which are highly trafficked by construction workers, or provide construction workers with a pamphlet, in languages largely understood by construction workers, which

c) encourage voluntary HIV/STI testing;

d) provide information concerning counselling, support and care of those that are infected services; and

e) comply with the requirements of 5.2.

***The* provisions *of* 5.1 c) *and d) do not apply to* this contract.**

5,2 HIV awareness programme

5.2.1 The contractor shall:

a) engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme which is structured to achieve the outcomes stated in 5.2.3 for contract workers as soon as a construction workers camp is established and populated or, where no such camp is established, within two weeks of the commencement of a significant portion of the works and at subsequent intervals, if any, provided for in the scope of works; and

b) arrange for, provide a suitable venue, and instruct all construction workers to attend the HIV Awareness Programme and notify the Employer's Representative of the date, time and venue whenever a session with construction workers is conducted.

Note: The National Department of Public Works maintains a list of qualified service providers.

5.2.2 The contractor shall do nothing to dissuade construction workers from attending such an HIV Awareness Programme and shall take all reasonable steps to ensure that a minimum of 90% of construction workers engaged in the works attend such a programme, when it is conducted.

5.2.3 The outcomes of the HIV Awareness Programme shall as a minimum, result in contract workers exposed to such a programme being able to:

a) communicate the existence of problems of HIV and be able to outline the consequences of transmission of HIV to or from the local community;

b) recall and communicate the mode of HIV transmission and preventative measures including the proper use of the condom.

The HIV/ Aids awareness programme described in 5.2 is to be repeated at four month intervals throughout the duration of the contract. (Four times in total, including the initial one at the start of the contract)

5,3 Reporting

5.3.1 The contractor shall prepare and attach to his claims for payment a brief report which outlines how the actions taken by the contractor in the period for which payment is claimed satisfy the requirements and a schedule which lists the names, identity numbers, trade / occupation and name of employer of all construction workers exposed to the programme (see **HIV/STI Compliance Report**).

5.3.2 The employer's representative shall certify the report and schedule described in 5.3.1 whenever a claim for payment is issued to the employer.

Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Public Works) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum.

The *HIV /Aids* awareness programme *described* in 5.2 shall in addition *be conducted* for the benefit *of* the local community on two occasions in the community centre nearest to the building site. The contractor shall be *responsible* for inviting identifiable community-based *institutions and organisations, churches, and schools to participate in the* programme.

C3.3 - HIV/STI COMPLIANCE REPORT

Pro-forma reporting format in terms of the SPECIFICATION FOR HIV/AIDS AWARENESS

Project Code:	069027		
Payment Claim number:		Period covered by payment claim:	

1. Distribution of condoms (briefly describe where and how condoms are distributed).

2. Posters / pamphlets (briefly describe where posters were placed / how pamphlets were distributed).

3. Voluntary testing (briefly describe the actions taken / information provided to promote testing).

4. Counselling, support and care (summarise information provided).

5. HIV awareness programme (briefly describe action).

6. Schedule of construction workers exposed to the HIV awareness programme.

Name	Identity number	Trade / occupation	Name of employer

I hereby declare the above to be a true reflection of actions taken to ensure compliance with the specification.

For Contractor:

Name: _____

Signature: _____

Date: _____

Employer's representative:

Name: _____

Signature: _____

Date: _____

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

PART C4. SITE INFORMATION

C4.1 SITE INFORMATION
GCC FOR CONSTRUCTION WORKS (2 Edition of 2010)

Project title:	**eThekwini Region: Empungeni primary school: Storm Damage Phase 16**		
Tender No.	**ZNTD05328W**	**Project Code:**	**069027**

C4.1 Site Information

C4.1 GENERAL

(a) Ground is assumed to be loose, sandy conditions.

(b) N/A

(c) Any additional site information such as location, improvements on site, adjacent buildings, environmental issues, etc. must be described in detail herein. If project is phased, indicate the phased work procedure with a colour coded site plan or graphical key or sorts.

C4.2 GEOTECHNICAL INVESTIGATION REPORT

(a) Site is an existing school - bidders to note that works to be programmed to ensure as little disturbance to teaching and learning activities as possible - the school will be fully operational throughout the construction period.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

PART C5 - DRAWINGS / ANNEXURES

C5.1 - LIST OF DRAWINGS/ANNEXURES

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

Tender No.:	**ZNTD05328W**	**Project Code:**	**069027**

(Where drawings/annexure's are issued, document compilers must insert the following paragraph and list the applicable drawings/annexure's below.)

The following drawings/annexure's shall be issued during the Tender period to form part of the tender documentation. Where applicable, drawings/annexure's could be re-issued to the Contractor at commencement of the construction phase.

DRAWING NO	DESCRIPTION
1100.17-056	Site Layout
2022MLJ-P-L-2000	DB-A (MDB) ELECTRICAL SCHEMATIC
2022MLJ-P-L-2001	DB-B ELECTRICAL SCHEMATIC
2022MLJ-P-L-2003	DB-C ELECTRICAL SCHEMATIC
2022MLJ-P-L-2004	DB-E ELECTRICAL SCHEMATIC
2022MLJ-P-L-2005	DB-F ELECTRICAL SCHEMATIC
2022MLJ-P-L-2006	DB-G ELECTRICAL SCHEMATIC
SECHEDULE OF LUMINAIRES	ELECTRICAL INSTALLATION: EMPUNGENI SECONDARY

ANNEXURES	
Annexure 1	Model Preambles for Trades 2008
Annexure 2	General Electrical Specifications
Annexure 3	Lightning Protection Specifications
Annexure 4	Map of Tender submission location
Annexure 5	Joint Venture Agreement
Annexure 6	Health and Safety Specification
Annexure 7	Health and Safety Bill of Quantities
Annexure 8	Builders Lien Agreement
Annexure 9	Additional Specifications - EPWP
Annexure 10	EPWP Employment Contract

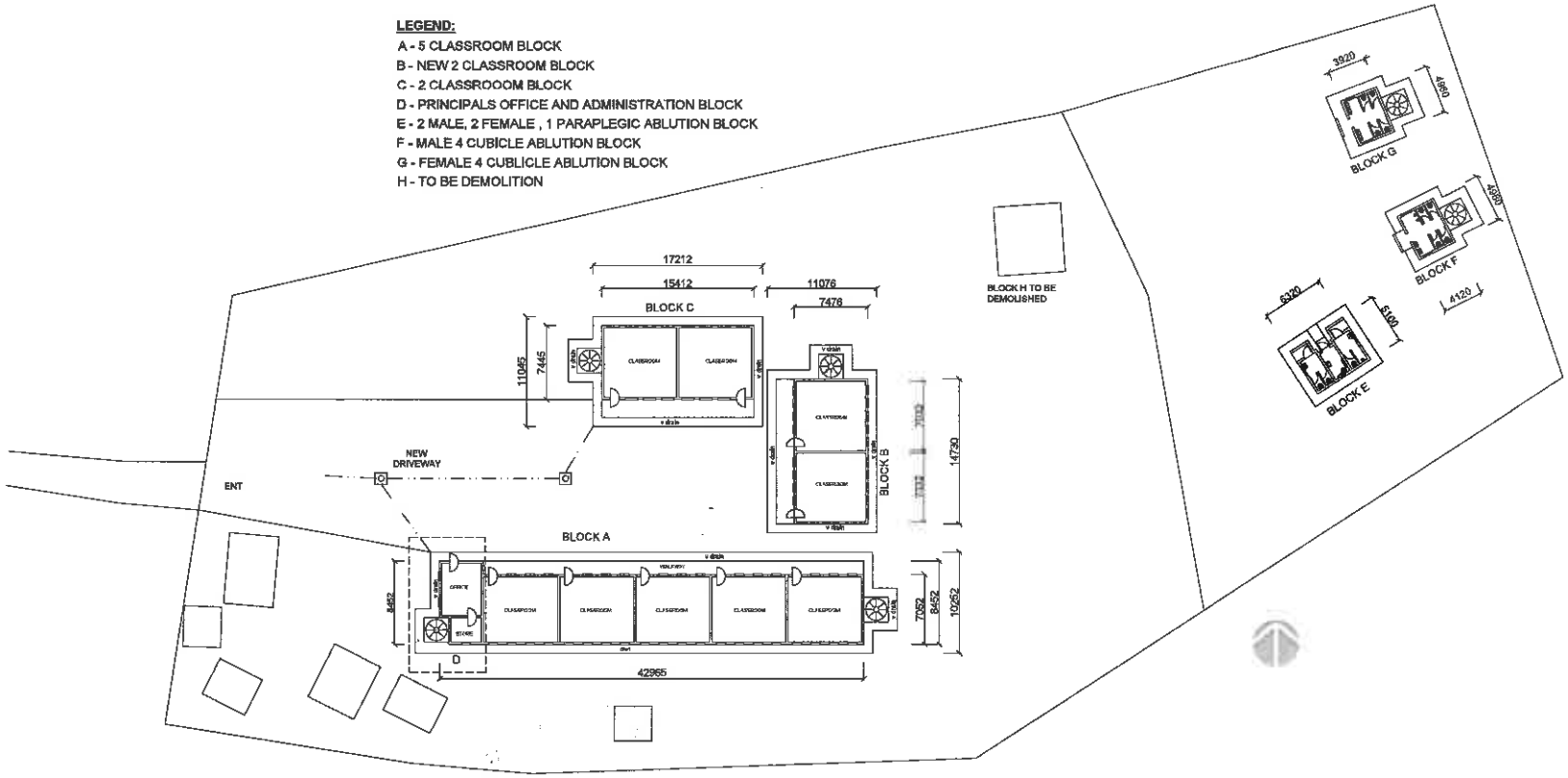
KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

ARCHITECTURAL DRAWINGS

LEGEND:

A - 5 CLASSROOM BLOCK
B - NEW 2 CLASSROOM BLOCK
C - 2 CLASSROOOM BLOCK
D - PRINCIPALS OFFICE AND ADMINISTRATION BLOCK
E - 2 MALE, 2 FEMALE , 1 PARAPLEGIC ABLUTION BLOCK
F - MALE 4 CUBICLE ABLUTION BLOCK
G - FEMALE 4 CUBLICLE ABLUTION BLOCK
H - TO BE DEMOLITION



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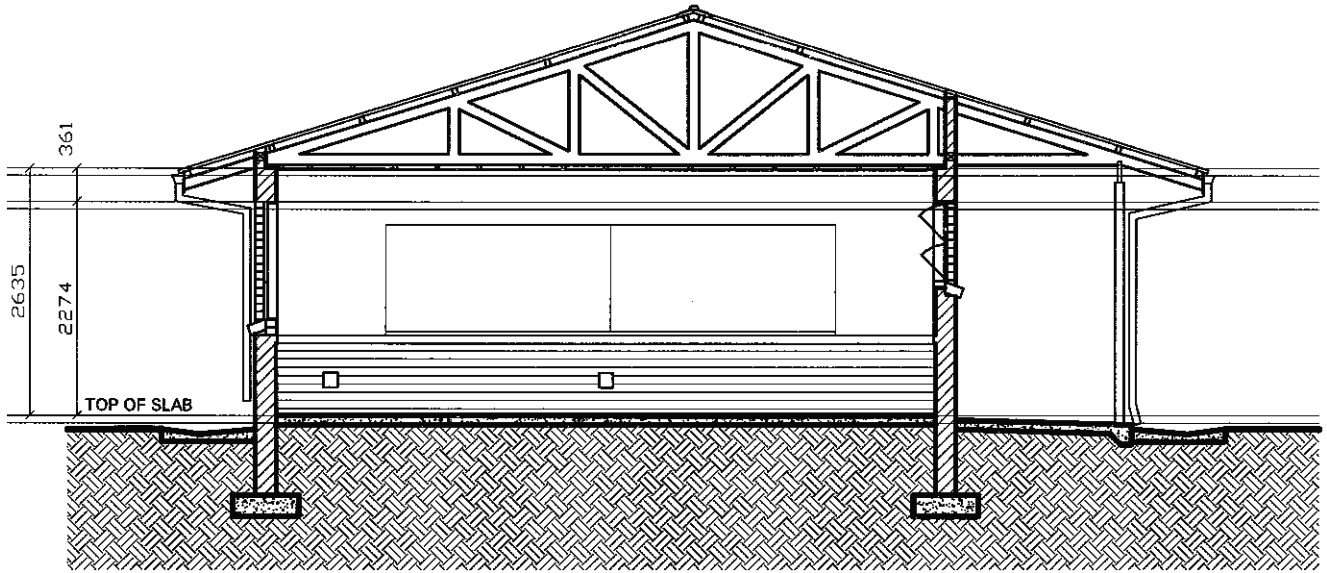
EMPUNGENI S

SITE ASSESSMENT

Designed	Drawn	Scale 1 : 500	Drawing SITE PLAN	Date	DRWG No 1100.17 - 057



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TYPICAL SECTION

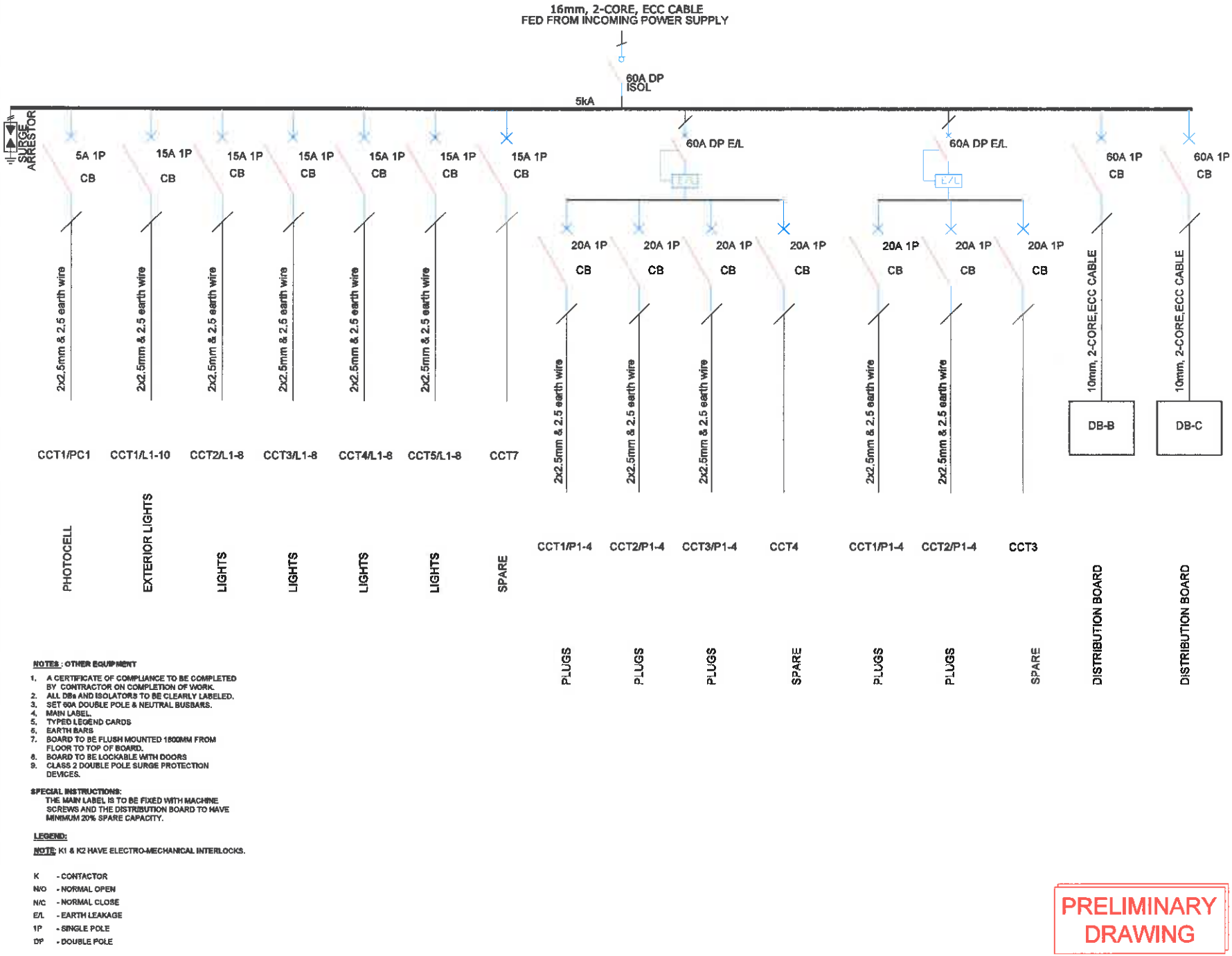
SCHOOLS

Designed	Drawn	Scale	Drawing	Date	DRWG No.
		NTS	SECTION		

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

ELECTRICAL DRAWINGS



NOTES : OTHER EQUIPMENT

1. A CERTIFICATE OF COMPLIANCE TO BE COMPLETED BY CONTRACTOR ON COMPLETION OF WORK.
2. ALL DBs AND ISOLATORS TO BE CLEARLY LABELED.
3. SET 60A DOUBLE POLE & NEUTRAL BUSBARS.
4. MAIN LABEL.
5. TYPED LEGEND CARDS
6. EARTH BARS
7. BOARD TO BE FLUSH MOUNTED 1800MM FROM FLOOR TO TOP OF BOARD.
8. BOARD TO BE LOCKABLE WITH DOORS
9. CLASS 2 DOUBLE POLE SURGE PROTECTION DEVICES.

SPECIAL INSTRUCTIONS:
THE MAIN LABEL IS TO BE FIXED WITH MACHINE SCREWS AND THE DISTRIBUTION BOARD TO HAVE MINIMUM 20% SPARE CAPACITY.

LEGEND:

NOTE: K1 & K2 HAVE ELECTRO-MECHANICAL INTERLOCKS.

K - CONTACTOR
N/O - NORMAL OPEN
N/C - NORMAL CLOSE
E/L - EARTH LEAKAGE
1P - SINGLE POLE
DP - DOUBLE POLE

PRELIMINARY DRAWING

0 25 50
50mm on original plan

REVISIONS

Rev	Date	Checked	Description

Contract No:

Client Logo:

Consultant:

MALUJU Projects

Project title:

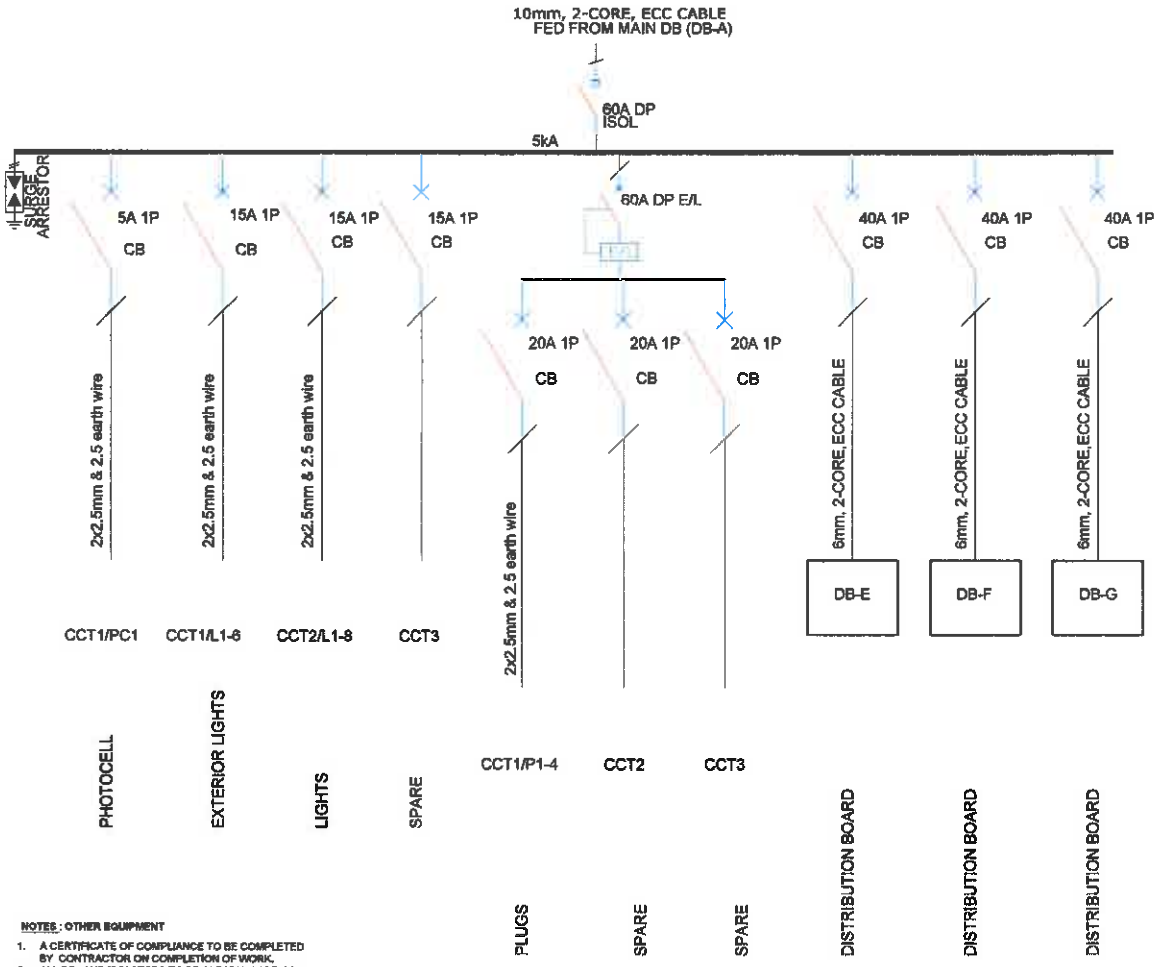
EMPUNGENI SECONDARY SCHOOL

Drawing title:

DB-A (MDB) ELECTRICAL SCHEMATIC

Design: N.D.	Date: 2022-11-18	Sign:	
Drawn: N.D.	Date: 2022-11-18	Sign:	
Checked: N.D.	Date: 2022-11-18	Sign:	
Director: N.D.	Date: 2022-11-18	Sign:	
NTS	Sheet Size: A3	Sheet:	

Drawing No: 2022MLJ-P-L-2000



NOTES : OTHER EQUIPMENT

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4. MAIN LABEL.
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LEGEND:

NOTE: K1 & K2 HAVE ELECTRO-MECHANICAL INTERLOCKS.

K - CONTACTOR
N/O - NORMAL OPEN
N/C - NORMAL CLOSE
E/L - EARTH LEAKAGE
1P - SINGLE POLE
DP - DOUBLE POLE

PRELIMINARY DRAWING

0 25 50
50mm on original plan

REVISIONS

Rev	Date	Checked	Description

Contract No:

Client Logo:

Consultant:

MALUJU Projects

Project title:

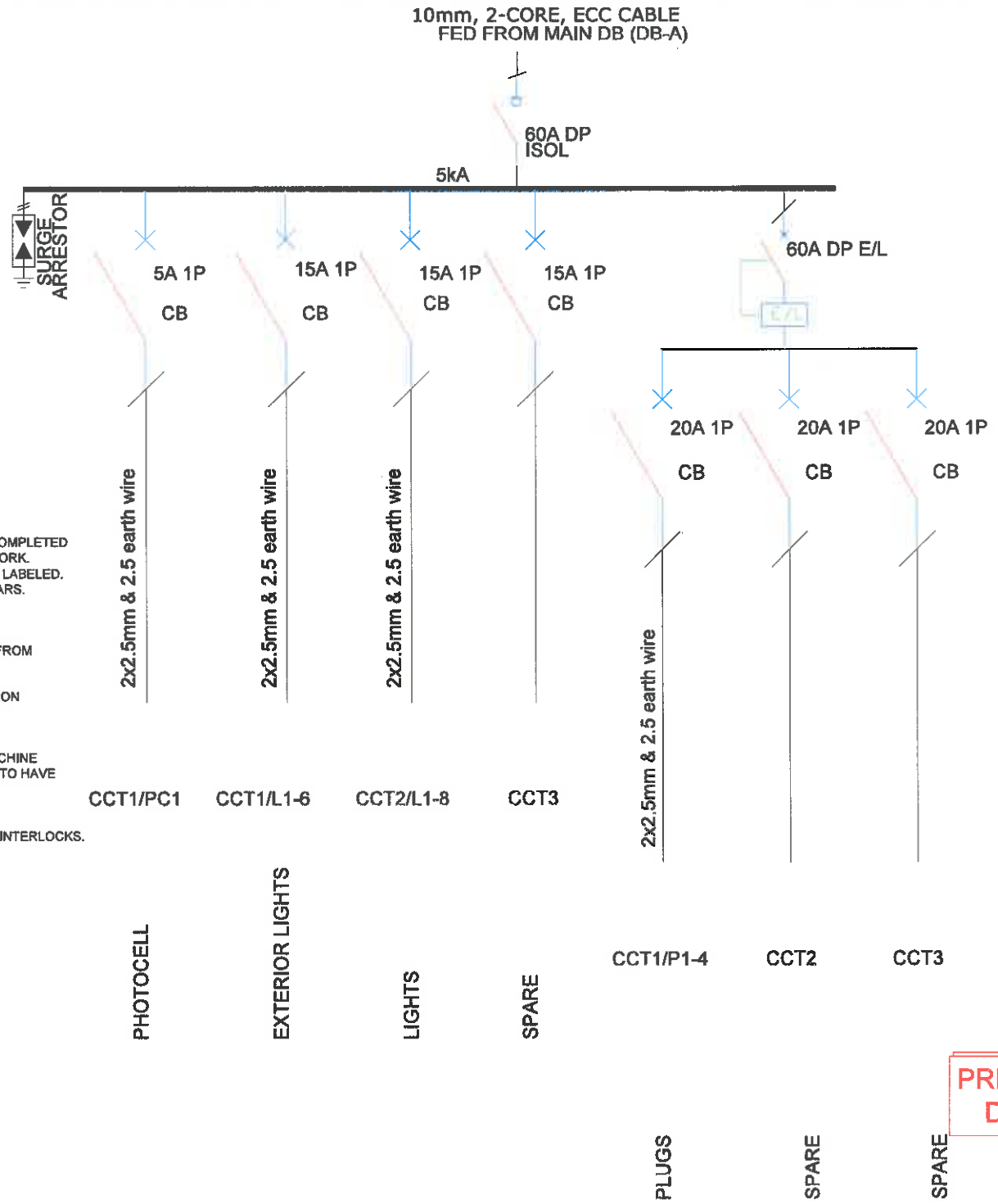
EMPUNGENI SECONDARY SCHOOL

Drawing title:

DB-B ELECTRICAL SCHEMATIC

Design: N.D.	Date: 2022-11-18	Sign:	
Drawn: N.D.	Date: 2022-11-18	Sign:	
Checked: N.D.	Date: 2022-11-18	Sign:	
Director: N.D.	Date: 2022-11-18	Sign:	
NTS	Sheet Size: A3	Sheet:	

Drawing No: 2022MLJ-P-L-2001



NOTES : OTHER EQUIPMENT

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LEGEND:

NOTE: K1 & K2 HAVE ELECTRO-MECHANICAL INTERLOCKS.

K	- CONTACTOR
N/O	- NORMAL OPEN
N/C	- NORMAL CLOSE
E/L	- EARTH LEAKAGE
1P	- SINGLE POLE
DP	- DOUBLE POLE

PRELIMINARY DRAWING

0 25 50
50mm on original plan

REVISIONS

Rev	Date	Checked	Description

Contract No:

Client Logo:

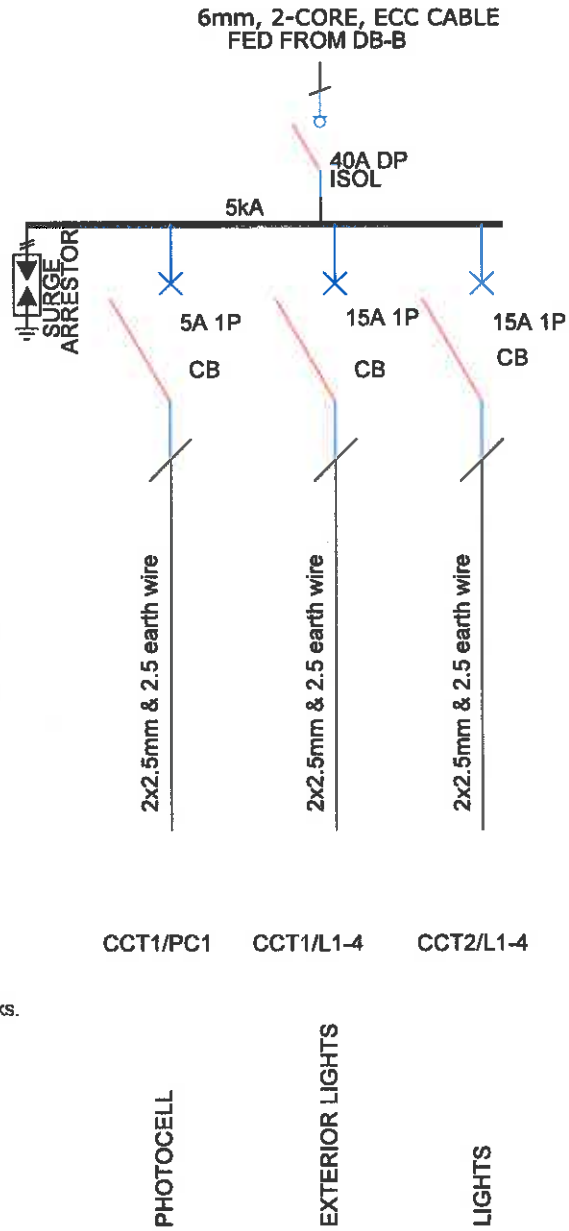
Consultant:
MALUJU Projects

Project title:
EMPUNGENI SECONDARY SCHOOL

Drawing title:
DB-C
ELECTRICAL SCHEMATIC

Design:	N.D.	Date:	2022-11-18	Sign:	
Drawn:	N.D.	Date:	2022-11-18	Sign:	
Checked:	N.D.	Date:	2022-11-18	Sign:	
Director:	N.D.	Date:	2022-11-18	Sign:	
	NTS	Sheet Size:	A3	Sheet:	

Drawing No: 2022MLJ-P-L-2003



NOTES : OTHER EQUIPMENT

1. A CERTIFICATE OF COMPLIANCE TO BE COMPLETED BY CONTRACTOR ON COMPLETION OF WORK.
2. WEATHERPROOF DB
3. ALL DBs AND ISOLATORS TO BE CLEARLY LABELED.
4. SET 40A DOUBLE POLE & NEUTRAL BUSBARS.
5. MAIN LABEL.
6. TYPED LEGEND CARDS
7. EARTH BARS
8. BOARD TO BE SURFACE MOUNTED 1800MM FROM FLOOR TO TOP OF BOARD.
9. BOARD TO BE LOCKABLE WITH DOORS
10. CLASS 2 DOUBLE POLE SURGE PROTECTION DEVICES.

SPECIAL INSTRUCTIONS:
THE MAIN LABEL IS TO BE FIXED WITH MACHINE SCREWS AND THE DISTRIBUTION BOARD TO HAVE MINIMUM 20% SPARE CAPACITY.

LEGEND:
NOTE: K1 & K2 HAVE ELECTRO-MECHANICAL INTERLOCKS.

K	- CONTACTOR
N/O	- NORMAL OPEN
N/C	- NORMAL CLOSE
E/L	- EARTH LEAKAGE
1P	- SINGLE POLE
DP	- DOUBLE POLE

PRELIMINARY DRAWING

0 25 50
50mm on original plan

REVISIONS

Rev	Date	Checked	Description

Contract No:

Client Logo:

Consultant:
MALUJU Projects

Project title:
EMPUNGENI SECONDARY SCHOOL

Drawing title:
DB-E
ELECTRICAL SCHEMATIC

Design:	N.D.	Date: 2022-11-18	Sign:	
Drawn:	N.D.	Date: 2022-11-18	Sign:	
Checked:	N.D.	Date: 2022-11-18	Sign:	
Director:	N.D.	Date: 2022-11-18	Sign:	
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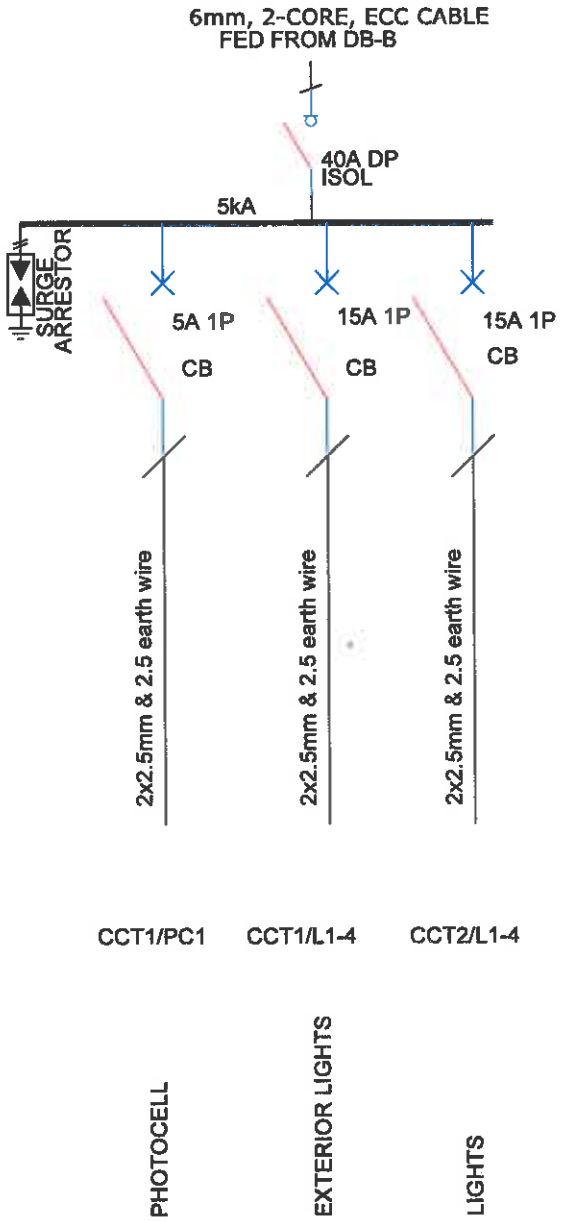
Drawing No: 2022MLJ-P-L-2004



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DP	- DOUBLE POLE

PRELIMINARY DRAWING

0 25 50
50mm on original plan

REVISIONS

Rev	Date	Checked	Description

Contract No:

Client Logo:

Consultant:
MALUJU Projects

Project title:
EMPUNGENI SECONDARY SCHOOL

Drawing title:
DB-F
ELECTRICAL SCHEMATIC

Design: N.D.	Date: 2022-11-18	Sign:	
Drawn: N.D.	Date: 2022-11-18	Sign:	
Checked: N.D.	Date: 2022-11-18	Sign:	
Director: N.D.	Date: 2022-11-18	Sign:	
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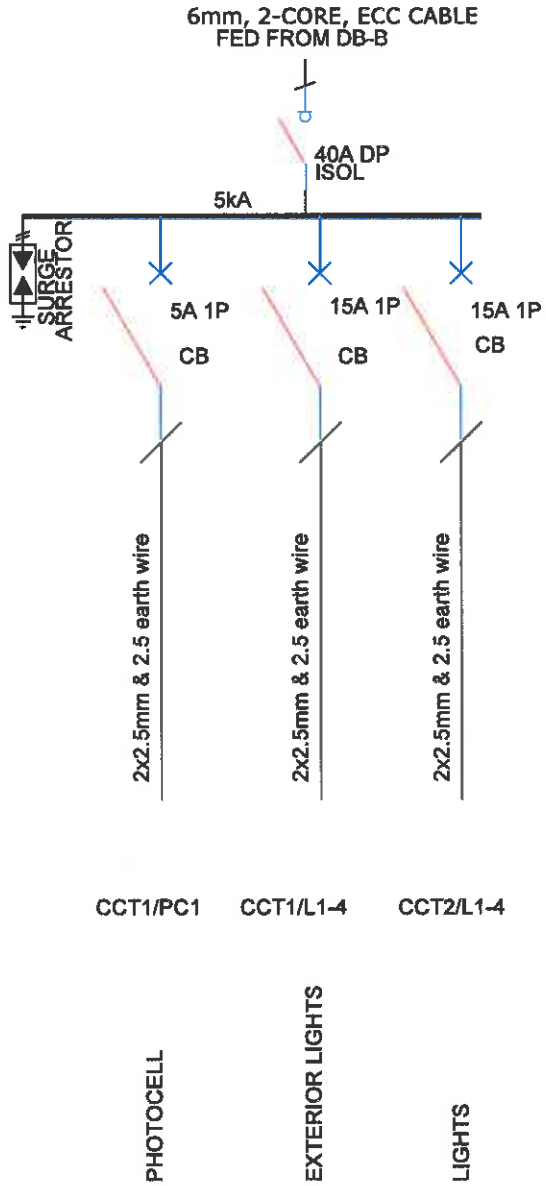
Drawing No: 2022MLJ-P-L-2005



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PRELIMINARY DRAWING

0 25 50
50mm on original plan

REVISIONS

Rev	Date	Checked	Description

Contract No:

Client Logo:

Consultant:
MALUJU Projects

Project title:
EMPUNGENI SECONDARY SCHOOL

Drawing title:
DB-G
ELECTRICAL SCHEMATIC

Design: N.D.	Date: 2022-11-18	Sign:	
Drawn: N.D.	Date: 2022-11-18	Sign:	
Checked: N.D.	Date: 2022-11-18	Sign:	
Director: N.D.	Date: 2022-11-18	Sign:	
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Drawing No: 2022MLJ-P-L-2006

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

ANNEXURES

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

MODEL PREAMBLES FOR TRADES 2008

The Association of South African Quantity Surveyors
Die Vereniging van Suid-Afrikaanse Bourekenaars

MODEL PREAMBLES FOR TRADES 2008

forming part of
the bills of quantities

Project:

Contract Reference Number:

Effective date November 2008

ISBN 978-0-620-1663-4

EXPLANATORY NOTES AND INSTRUCTIONS ON THE USE OF THESE MODEL PREAMBLES

1. The document

1.1 This document is published by and is available from the Association of South African Quantity Surveyors, P.O. Box 3527, Halfway House, 1685. Telephone (011) 315 4140. E-mail: administration@asaqs.co.za

1.2 The contents of this document are intended to cover workmanship and materials encountered in a significant majority of projects. If a material is not encountered in a significant majority of projects, its preamble will in all likelihood not be included in this document

1.3 By its very nature, this document is a "Model" document and one that is designed to act as a basis upon which to build. It is anticipated that it will be supplemented by a "Supplementary Preambles" document included in the text of the bills of quantities that will include, *inter alia*, the following:

1.3.1 supplementary clauses of a general nature that practitioners may deem necessary to cover their own individual requirements,

1.3.2 additional clauses pertaining to specific materials incorporated in a project and not covered by the Model Preambles,

1.3.3 amendments to anything contained in the Model Preambles. A clause has been incorporated in the "General" section of the document stipulating that anything contained in the "Supplementary Preambles" which is at variance to that which is contained in the Model Preambles, will take precedence over the Model Preambles and apply to the works in hand

1.4 It is intended that this document will be used by reference only in the text of the bills of quantities and will NOT be bound or reproduced therein

2. The basic philosophy

2.1 Wherever possible, reference has been made throughout the preambles to South African National Standards (SANS) to describe materials and methods respectively. It is therefore incumbent on the users of these preambles to have ready access to the relevant Specifications and Codes. Where such Specifications or Codes do not exist, suitable preambles have been compiled

2.2 These preambles have been designed to assist in abbreviating descriptions in the text of the bills of quantities and practitioners are encouraged to make use of this facility. e.g. The description of a stormwater catchpit would read:

"Brick stormwater catchpit size internally 600 x 400 x 1 200mm deep to invert fitted with and including a 450 x 300mm x 59kg cast iron grating and frame"

2.3 Wherever alternatives exist in respect of materials or workmanship, specific choices have been made in these preambles. Should users require different choices to specific items, these should be referred to in the Supplementary Preambles as outlined in clause 1.3

3. Additional notes in the use of these Model Preambles

3.1 **Concrete, Formwork and Reinforcement**

The Project Specification embodied in these preambles was compiled in collaboration with the Authors of SANS 1200G, which forms the basis for the Concrete, Formwork and Reinforcement model preambles

Users of these preambles are advised to submit a copy of the Model Preambles to the Engineers involved in a project for their scrutiny. Any amplifications, amendments, etc required by individual Engineers would then be incorporated in the Supplementary Preambles referred to in item 1.3

3.2 **Roof Coverings**

The roof coverings included in these Model Preambles are limited in their content and therefore any roofing material not included in these Preambles will need to have its full preamble included in the Supplementary Preambles

3.3 **Structural Steelwork**

The comments made under item 3.1 apply equally to Structural Steelwork

Note that the protective treatment of the structural steel covers only the treatment up to and including the primer (and patching after erection). The finishing coats of paint must be fully described and included either in the "Structural Steelwork" or in the "Paintwork" trade, as the practitioner wishes

MODEL PREAMBLES FOR TRADES

CONTENTS

A. GENERAL

A.1 APPLICATION OF CLAUSES

These Model Preambles for Trades, and any Supplementary Preambles, shall be read in conjunction with and shall form part of the descriptions of items in the bills of quantities

Where descriptions or Supplementary Preambles in the bills of quantities differ from these Model Preambles for Trades, the descriptions or Supplementary Preambles in the bills of quantities shall take precedence. Where supplementary preambles differ from descriptions in the bills of quantities, the descriptions in the bills of quantities shall take precedence

Except where otherwise stated, all preambles contained in any individual Trade Preamble shall apply equally to any work of a similar nature in all other trades

A.2 ABBREVIATIONS

The following abbreviations shall apply:

AASHTO	–	American Association of State Highway and Transportation Officials
AISI	–	American Institute of Steel Industries
BS	–	British Standard
CKS	–	Coordinating Specifications issued by the Central Coordinating Committee under the auspices of the South African Bureau of Standards
CSIR	–	Council for Scientific and Industrial Research
SANS	–	South African National Standards and the number following shall refer to the relevant specification or code of practice as the case may be

A.3 MATERIALS AND WORKMANSHIP

Materials and workmanship shall be the best of their respective kinds. Only new and undamaged materials shall be used in the Works. Materials to be permanently installed into the works shall not be used for any temporary purposes on site. Work shall be to the approval of the Principal Agent and shall be executed in accordance with the relevant manufacturer's written recommendations and instructions where applicable

A.4 PROPRIETARY PRODUCTS

For the purposes of submission of tenders, rates for items described in the bills of quantities by trade names, catalogue references, etc shall be for the particular type and manufacture specified

The approval of the Principal Agent shall be obtained prior to any substitution and where products or materials etc other than those specified are used, adjustments in the rates will be made if necessary

A.5 ASSEMBLING

Rates for manufactured items shall include assembling complete and handing over in proper working order

A.6 REFERENCES IN DESCRIPTIONS

Any references given in brackets at the end of certain descriptions shall refer to the relevant references on the drawings or schedules

A.7 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter and other substances and shall be suitable for its intended use

A.8 APPLICATION OF THE NATIONAL BUILDING REGULATIONS

All work shall be executed in accordance with the requirements of SANS 10400

A.9 ACCURACY IN BUILDINGS

The dimensional and positional accuracy of the buildings and their component parts shall comply with Grade II requirements of SANS 10155 unless otherwise stated

A.10 REFERENCES TO OTHER DOCUMENTS

References in these "Model Preambles for Trades" to other documents, including SANS, CKS and BS, shall pertain to the latest edition thereof including all amendments thereto at the date for submission of the tender

B. ALTERATIONS

B.1 ALTERATIONS

In taking down and removing existing work the utmost care shall be observed to prevent any structural or other damage to remaining portions of the building. The Contractor shall ensure the stability of all structures during alteration work

Special care shall be exercised during the progress of the work to ensure that any electrical installations, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Principal Agent if any disconnection or alterations become necessary

The Contractor shall take all precautions necessary to prevent any nuisance from dust whilst carrying out the work

B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC

Materials recovered from the alterations (except where described as to be re-used or to be handed over to the Employer) will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in new work without written permission from the Principal Agent

Materials described as "removed" shall be removed from the site immediately.

Materials described as "handed over to the Employer" shall be carefully dismantled where necessary, neatly stored under cover on the site where directed and protected from damage, until required

Materials described as "set aside for re-use" shall be carefully dismantled where necessary, cleaned, neatly stored under cover and protected from damage until required for re-use. Any damage caused to such materials during removal, storage or refixing shall be made good at the Contractor's expense

B.3 DISPOSAL OF DEBRIS ETC

The Contractor shall be responsible for the removal from the site of all materials, debris and rubbish resulting from the alterations

B.4 MAKING GOOD DAMAGED WORK

The Contractor shall make good in all trades to existing work where damaged or disturbed through the alterations with all necessary new materials to match the existing

B.5 FORMING NEW OPENINGS OR ALTERING OPENINGS IN EXISTING WALLS

Where new openings are formed or openings altered in existing walls, the wall above the opening shall be broken out and a new brick, in situ concrete or prestressed concrete lintel inserted, complete with all necessary reinforcement, formwork, turning piece, etc, the jambs and portions of openings as described shall be built up with new brickwork or blockwork properly toothed and bonded to existing, cavities of hollow walls shall be closed where necessary and finishes shall be made good all round and into reveals

B.6 BUILDING UP OPENINGS

Where existing openings are given in number as built up, the existing surfaces all round shall be prepared as necessary, brickwork or blockwork properly toothed and bonded to existing, wedged up to underside of existing lintel and finishes shall be made good on both sides

C. EARTHWORKS

C.1 DEMOLITIONS

C.1.1 Nature and extent

Descriptions of demolitions give a rough guide only as to the scope of the work. Tenderers are therefore advised to visit the site before submitting a tender and to acquaint themselves with the nature and extent of the work to be done and the value of recoverable materials which are not to be re-used or handed over to the Employer. Unless otherwise stated, loose furniture, kitchen and other equipment, apparatus, machinery, etc shall remain the property of the Employer and the removal thereof does not fall within the scope of this Contract

The Contractor shall completely demolish the buildings etc in a careful, skilful, practical and safe manner down to 150mm below ground level

Demolitions shall include breaking up and removing:

all floors and surface beds;

all external screen walls, steps, ramps, aprons, surface water channels, rainwater sumps, gulleys, etc attached to the building to be demolished;

all services, manholes, etc in ground to a point not less than 1m beyond the perimeter of the building including plugging off ends of all remaining pipes, drains, etc, filling in holes where necessary and ramming and levelling to ground level

Where only a portion of a building is to be demolished, it shall be done without damage to the remaining portion of the building. Any such damage shall be made good by the Contractor at his own expense

C.1.2 Notices etc

The Contractor shall, before commencing work, obtain all necessary authorisation for carrying out the work, by whatever means including the use of pneumatic equipment or blasting, give all necessary notices and pay all charges and fees in connection therewith. He shall also comply with all regulations pertaining to rodent extermination and he shall obtain the requisite Rodent Extermination Clearance Certificate and pay all necessary fees. All receipts and certificates shall be left in the safekeeping of the Principal Agent. All the abovementioned charges and fees shall be paid by the Contractor and included in his prices

The Contractor shall give ample notice to the Principal Agent and Local Authorities regarding any disconnections necessary prior to the removal or interruption of electrical or telephone cables, water and sanitary services etc

C.1.3 Loss

After the handing over of the site to the Contractor, the full risk of any loss or damage to buildings to be demolished shall be the responsibility of the Contractor and he shall take such precautions as he deems necessary against such loss or damage

C.1.4 Materials from the demolitions, credit, etc

Materials recovered from the demolitions will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in any new work without written permission from the Principal Agent

C.1.5 Disposal of debris etc

The Contractor shall be responsible for the removal from the site of all materials, rubble, debris and rubbish resulting from the demolitions

C.2 SOIL INSECTICIDES

The application of soil insecticides shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS 10124

C.3 FILLING ETC

C.3.1 Filling generally

Filling over site shall be spread, levelled, watered and consolidated in layers not exceeding 300mm

Filling under floors and backfilling to excavations shall be suitable inert material, free from clay, vegetable matter, large stones, etc, having a maximum plasticity index of 10, spread, levelled and compacted to a density of at least 90% Mod. AASHTO

C.3.2 Hardcore

Hardcore shall be broken stone or other approved hard material graded from 25mm to 75mm with the finer material on top and shall be spread, levelled and consolidated

C.4 EXCAVATIONS

C.4.1 Classification of excavated material

"Hard rock" shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives

"Soft rock" shall mean hard material the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness

"Earth" shall mean all ground other than that classified as "hard rock" or "soft rock" and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m^3 in volume

D. CONCRETE, FORMWORK AND REINFORCEMENT

D.1 SPECIFICATION FOR CONCRETE WORK GENERALLY

All in situ concrete work (plain and reinforced) shall comply with SANS 1200G supplemented by the following Project Specification. Where SANS 1200G and the Project Specification are in conflict, the Project Specification shall take precedence

Wherever the term "Engineer" appears in SANS 1200G or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

PROJECT SPECIFICATION

The following amplifications, additions and amendments to SANS 1200G shall constitute the Project Specification. Clause numbers refer to either the existing clauses in SANS 1200G or to new clauses, which are related to the existing clauses

1. **SCOPE**
This clause is amended to include:

1.1 This specification does not cover the methods by which the finished structure is to be measured for the purpose of payment and the "Standard System of Measuring Building Work" shall apply

2. **INTERPRETATIONS**

2.1 **SUPPORTING SPECIFICATIONS**
Clause 2.1(b) shall not apply

2.2 **APPLICATION**
This clause shall not apply

4. **PLANT**

4.5 FORMWORK

4.5.2 **Finish**
Unless otherwise stated the quality of all formwork shall be such that the finished surface of the concrete is "Rough" in terms of clause 5.2.1(a)

5. **CONSTRUCTON**

5.2 FORMWORK

5.2.1 **Classification of Finishes**

(a) **Rough**. No treatment of the surface of the concrete will be required after the striking of the formwork. The finish of the concrete need not be more accurate than Degree of Accuracy III

(b) **Smooth**. Imperfections such as small fins, bulges, irregularities, surface honeycombing and surface discolorations shall be made good and repaired by approved methods. The finish of the concrete shall be accurate to Degree of Accuracy II

(c) **Special**

(i) **Smooth and fair**

This class of finish requires the highest standard of concrete work, formwork, accuracy and technique

Concrete placed in any one structure to give this finish shall be made from cement and aggregates from the same source. The grading of the aggregate shall be kept constant

Formwork shall be metal, wrot timber or other approved material in new condition designed and constructed to suit the particular job in hand and with shutter bolts and joints between panels in a regular pattern approved by the Principal Agent. Joints between panels shall be watertight, but the use of sealing tape which will mark the concrete shall not be permitted

Designated joints shall be in the position and of the details shown upon the working drawings. Should the Contractor wish to incorporate further construction joints or amend the position of those shown to suit his own requirements or technique, this may be allowed provided that all design considerations are met, that the prior approval of the Engineer is obtained and that any extra costs are borne by the Contractor

In the case of horizontal construction joints, the top edge of the concrete on the smooth and fair finished side shall be struck true and level with a trowel

Special care shall be taken to ensure that forms are clean and free of all pieces of tying wire, nails and other debris at the time of concreting

The standard of finish shall be such that upon removal of the formwork, no further treatment, other than treatment of bolt holes if required, shall be found necessary to provide a straight, smooth and uniform finish of good quality and consistent colour and texture, free of all honeycombing etc. Any defect shall be made good by either removing and replacing the defective concrete or, in certain instances only, by patching

5.5 CONCRETE

5.5.1.6 **Prescribed mix concrete**

Where prescribed mix concrete is specified the proportions of constituents, the maximum size of coarse aggregate and the estimated minimum compressive strength shall be as specified in the following table:

Class of Concrete	Estimated minimum compressive strength in MPa at 28 days	Maximum nominal size of coarse aggregate in mm	Proportions of Constituents		
			Cement (Parts)	Fine aggregate (Parts)	Coarse aggregate (Parts)
A	7	37,5	1	4	8
B	15	19	1	3	5
C	20	19	1	2,5	3,5

Cement shall comply with SANS 50917-1 of strength 32,5N or higher

Should cement and aggregates be mixed by volume, the contents of a 50kg sack of cement shall be taken to be 0,033m^3

Notwithstanding the requirements contained in SANS 1200G, the Principal Agent may permit certain items of non-structural concrete to be mixed by hand

If the concrete is mixed by hand, it shall first be mixed in a dry state on a clean non-absorbent surface until it is of uniform colour and consistency. Just enough water shall then be added to permit mixing and working, at which stage the concrete shall continue to be mixed until it is of uniform colour and consistency

5.5.1.7 **Strength concrete**

Where strength concrete is specified it shall be designated by its specified strength followed by the size of stone used in its manufacture, eg 30 MPa/19mm

The water/cement ratio shall be as Table 5 of clause 5.5.1.5 for moderate exposure conditions

5.5.1.8 **"No-Fines" concrete**

"No-fines" concrete shall consist of one part cement to eight parts aggregate graded from minimum 6mm to maximum 13mm size

The quantity of water used shall be just sufficient to form a smooth grout which shall completely coat every particle of aggregate and also to ensure that the grout is just wet enough to form a small fillet at each point of contact between the stones. "No-fines" concrete mixed with excessive water, which results in a thin grout, which drops off the aggregate, will be rejected

"No-fines" concrete shall be placed in its final position within 20 minutes of mixing and shall be placed in continuous horizontal layers. Concrete shall be spade worked sufficiently to ensure that it fills the forms but vibrating, tamping or ramming will not be permitted

5.5.3.2 **Ready-mixed concrete**

The use of ready-mixed concrete and the acceptability of test results from a central concrete production facility shall be subject to the written approval of the Engineer

6. **TOLERANCES**

Degree of Accuracy II shall apply for all work unless otherwise stated

7. **TESTS**

7.1 FACILITIES AND FREQUENCY OF SAMPLING

7.1.2 **Frequency of sampling**

7.1.2.5 The frequency of sampling shall be as directed by the Engineer, but not less than one set of cubes from every 50m³ cast

8. **MEASUREMENT AND PAYMENT**

This clause shall not apply

D.2 AGGREGATES OF LOW DENSITY

Aggregates of low density shall comply with SANS 794

D.3 HOLLOW BLOCKS, PREFABRICATED BLOCK BEAMS AND PLANKS, ETC

Blocks, block beams, planks, etc shall be fixed and supported in such a manner that no movement can take place before or during the casting of concrete. No broken components shall be used

D.4 SUPERVISION

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

(a) The quality, testing and mixing of materials,
(b) The placing and compaction of concrete,
(c) The construction and removal of formwork and
(d) The sizes and position of reinforcement

The Contractor shall obtain the permission of the Principal Agent before commencing concreting of foundations or reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the Principal Agent to comment on any particular aspect of the work, shall be deemed to relieve the Contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the Drawings, Specification and Conditions of Contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the Principal Agent to inspect all or any part of the Works or that such inspection is necessarily complete in every respect

D.5 GENERAL

Concrete

Rates for concrete work shall include all "construction joints" other than "designated joints" as defined in SANS 1200G clause 2.4.3 which are measured separately, and for the design of strength concrete mixes and all testing of concrete and materials other than compressive strength testing of concrete samples taken from concrete being placed in the Works. The Contractor shall only be entitled to payment for those samples and compressive strength tests called for by the Engineer and which pass the test requirements

Surface beds cast in panels shall be cast in panels approximately $9m^2$

Formwork

Formwork to slabs and beams shall be cambered where required
Rates for formwork to soffits shall include propping not exceeding 3,5m high unless otherwise described. Formwork to walls and columns is not exceeding 3,5m high above bearing level unless otherwise described

Reinforcement

Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps.

The mass of binding wire is not included in the mass of the reinforcement and the cost thereof shall be included in the rates for the reinforcement

E. PRECAST CONCRETE

E.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Precast concrete paving slabs SANS 541

Cement, water, aggregates and reinforcement shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT

E.2 CONCRETE

Concrete shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT and unless otherwise stated shall be prescribed mix concrete Class C but with coarse aggregate of an appropriate size

E.3 MOULDS

Before each casting, moulds shall be coated with a suitable release agent which will not in any way discolour the surface of the finished product or impair its strength. Where items are described as "finished smooth from the mould" or as "precast terrazzo", moulds shall be made to a high degree of accuracy and shall be such as to leave even and smooth surfaces

E.4 FINISHES TO BLOCKS

Where described as "precast terrazzo", such surfaces shall have a facing of terrazzo described under O. PLASTERING. The facing shall be poured into the moulds in a wet state (not dry pressed) and thoroughly worked up against finished faces to ensure that it finishes smooth from the mould

Projections shall be rubbed off and faces shall be of even colour and free from blemishes, cracks and other imperfections. Salient angles shall be arris rounded

E.5 CASTING ETC

Items shall be suitably cured, shall not be handled whilst still green and shall not be built in within 21 days of casting

E.6 REINFORCEMENT

Unspecified reinforcement required for manufacturing, handling and erection purposes and for reinforcing projecting and other unwieldy portions of blocks shall be provided by the Contractor at his discretion

E.7 BEDDING, JOINTING AND POINTING

Blocks shall be bedded and jointed solidly in Class 1 mortar as described under F. MASONRY and shall be pointed with slightly keyed joints

Blocks finished with "precast terrazzo" shall have joints raked out and pointed with slightly keyed joints in tinted waterproofed mortar composed of one part cement and three parts sand to match terrazzo facing

E.8 GENERAL

Precast concrete work shall include reinforcement required for manufacturing, handling and erection purposes, steel rod or wire hooks and/or mortices for lewis bolts required for handling and transporting, any necessary temporary propping and strutting and bedding, jointing and pointing

F. MASONRY

F.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Burnt clay masonry units	SANS 227
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – fine aggregates for plaster and mortar	SANS 1090
Concrete masonry units	SANS 1215
Prestressed concrete lintels	SANS 1504
Burnt clay paving units	SANS 1575
Metal ties for cavity walls	SANS 28
Common cement	SANS 50197-1 (Class 32,5N)
Masonry cement	SANS 50413-1 (Class 22,5X)
Concrete masonry construction	SANS 10145
The structural use of masonry	SANS 10164-1
Masonry walling	SANS 10249
Concrete floors	SANS 10109-1&2

F.2 SAND

Sand shall be washed where necessary and screened through a 2,4mm mesh sieve

F.3 BURNT CLAY BRICKS

Burnt clay bricks shall be of nominal size 222 x 106 x 73mm unless otherwise stated

Common bricks shall be General Purpose bricks

Extra hard burnt bricks shall be General Purpose (Special) bricks

Facing bricks shall exhibit a liability to efflorescence not in excess of "Slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

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

F.4 CONCRETE BRICKS

Concrete bricks shall have a nominal compressive strength of 8 MPa

F.5 QUARRY TILES ETC

Quarry, cement and similar tiles shall be of approved manufacture, even in shape and size, free from cracks, twists or blemishes and uniform in colour

F.6 WIRE TIES

Wire ties shall be of galvanized steel of the single wire type for solid walls and either the "Butterfly" or Modified PWD type for hollow walls. Ties shall be of sufficient length to allow not less than 75mm of each end to be built into brickwork or embedded in concrete

F.7 BRICKWORK REINFORCEMENT

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2,8mm diameter main wires with 2,5mm diameter cross wires at 300mm centres welded at intersections

Brickwork reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

F.8 MORTAR

Mortar shall comply with the following table:

1	2	3	4
Mortar Class	Minimum compresive strength MPa	Cement:sand (common cement)	Cement:sand (masonry cement)
I	10	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	5	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1,5	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

Mortar shall be Class II unless otherwise specified

Mortar plasticizers may only be used with the approval of the Principal Agent

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated

Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used

F.9 COMPO MORTAR

Compo mortar shall be Class III mortar in accordance with clause F.8 but with a lime content of 80 litres

The lime and sand shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated. Immediately before use, the cement shall be mixed in and the requisite amount of water added. Compo mortar shall be produced in such quantities as can be used before commencement of set and no compo mortar that has set shall be used

F.10 BRICKWORK

Wherever practicable, brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used. English bond shall only be used where specifically so indicated or where stretcher bond is not practicable

Brickwork, unless otherwise described, shall be built in Class II mortar

Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

The brickwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

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

Walls in thicknesses of more than one skin shall have at least five wire ties per square metre. Linings to concrete, unless otherwise specified, shall be tied to the concrete with at least five wire ties per square metre

Hollow walls, unless otherwise specified, shall be built of two half brick skins with cavity between, tied together with at least five wire ties per square metre. The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar. Mortar joints to brickwork shall be not less than 8mm or more than 12mm thick

F.11 BLOCKWORK

Unless otherwise described, all blockwork shall be built in stretcher bond. Whole blocks shall be used except where bats or closers are required to form bond. Blockwork, unless otherwise described, shall be built in Class II mortar

Solid blocks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

Hollow blocks shall be laid in shell bedding, ie only the inner and outer shells of the blocks shall be covered with mortar. Vertical joints shall be similarly formed

The blockwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

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

F.12 CENTRES AND TURNING PIECES

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

F.13 FACE BRICKWORK

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned

Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick being used is obtained

F.14 PAVINGS, SILLS, COPINGS, ETC

Clay bricks and tiles shall be wetted before fixing and shall be solidly bedded and jointed in Class I mortar and pointed with slightly keyed joints

G. WATERPROOFING

G.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Bituminous damp-proof courses	SANS 248 (Type FV)
Polyolefin film for damp- and waterproofing in buildings (walls, sills, etc)	SANS 952 (Type B)
Polyolefin film for damp- and waterproofing in buildings (floors and basements)	SANS 952 (Type C)
Mastic asphalt for roofing	SANS 297
Mastic asphalt for damp-proof courses and tanking	SANS 298
Bituminous roofing felt	SANS 92 (Type 60)
Polyolefin film for damp- and waterproofing in buildings (flat roofs)	SANS 952 (Type A)
Chloroprene rubber sheet (for waterproofing)	SANS 580
Sealing compounds for the building industry, two-component, polysulphide base	SANS 110 (Type 2 - Gun Grade)
Sealing compounds for the building and construction industry, two- component, polyurethane base	SANS 1077
The waterproofing of buildings (including damp-proofing and vapour barrier installation)	SANS 10021

G.2 WATERPROOFING TO ROOFS, BASEMENTS, ETC

Waterproofing to roofs, basements, etc shall be carried out by workmen who are experienced in this type of work

G.3 DAMP-PROOF COURSE TO WALLS

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

H. ROOF COVERINGS ETC

H.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Concrete roofing tiles	SANS 542
Clay roofing tiles	SANS 632
Sawn softwood timber battens	SANS 1783-4
Fibre-cement sheets (flat and profiled)	SANS 685
Aluminium alloy corrugated and troughed sheets	SANS 903
Continuous hot-dip zinc-coated carbon steel sheet of commercial, lock-forming and drawing qualities	SANS 3575
Continuous hot-dip zinc-coated carbon steel sheet of structural quality	SANS 4998
Polyolefin film for damp- and waterproofing in buildings	SANS 952
Metal roofing tiles	SANS 1022
Glass-reinforced polyester (GRP) laminated sheets (profiled or flat)	SANS 1150
Fasteners for roof and wall coverings in the form of sheeting	SANS 1273
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Fixing of concrete interlocking roofing tiles	SANS 10062
Roof and side cladding	SANS 10237
Sheet zinc	BS 849
Sheet lead	BS 1178
Sheet aluminium	BS 1470
Sheet copper	BS 2870

H.2 GALVANIZED STEEL PROFILED SHEETS ETC

Galvanized steel profiled sheets, ridge and hip coverings, etc shall be coated with a minimum of 275 g zinc per m^2 and shall be free of white rust

H.3 GALVANIZED SHEET IRON

Galvanized sheet iron shall be rolled steel sheet coated on both sides with a minimum of 275 g of zinc per m^2 and shall be free from white rust

H.4 NAILING AND SCREWING

Where nailing and screwing is required:

- galvanized iron nails and screws shall be used for galvanized sheet iron and sheet zinc
- copper or copper alloy nails and screws for sheet copper and sheet lead
- aluminium alloy or stainless steel nails and screws for sheet aluminium

H.5 LAPS

Sheet metal flashings shall have minimum 100mm laps and linings to valleys, secret gutters, etc minimum 225mm laps

H.6 GENERAL

Rates for profiled sheet roofing and rolled edges, ridge and hip coverings, flashing pieces, etc of metal, fibre-cement, plastic, etc shall include fixing accessories

I. CARPENTRY AND JOINERY

I.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sawn softwood timber : General requirements	SANS 1783-1
Sawn softwood timber : Stress-graded structural timber and timber for frame wall construction	SANS 1783-2
Sawn softwood timber : Brandering and battens	SANS 1783-4
Softwood flooring boards	SANS 629
Hardwood furniture timber	SANS 1099
Hardwood block and strip flooring	SANS 281
Wooden ceiling and panelling boards	SANS 1039
Laminated timber (glulam)	SANS 1460
Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Wood-wool panels (cement bonded)	SANS 637
Fibre-cement sheets (flat and profiled)	SANS 685
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Particle boards	SANS 50312-1to7
Decorative laminates	SANS 4586
Wooden doors	SANS 545
Fire doors	SANS 1253
Materials for thermal insulation of buildings	SANS 1381-1,2,4&6
Expanded polystyrene thermal insulation boards	SANS 1508
Mild steel nails	SANS 820
Metal screws for wood	SANS 1171
Wood-preserving creosote	SANS 539

Softwood shall bear the relevant SABS mark and shall be ordered in the sizes in which it will be used as no scantlings of marked timber will be allowed. Should SABS marked timber be unavailable, the Principal Agent's prior permission shall be obtained before using unmarked timber

I.2 HARDWOODS

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

I.3 INFECTION AND PRE-TREATMENT OF TIMBER

All timber used on the site, whether for permanent or temporary work, shall be free of borer or other beetle and termite infection. If the work under this contract falls within an area designated under Government Notice R2577 of 197812-29, permanent softwood fixed in the building shall be treated against borer etc in accordance with Government Notice R451 of 1969-03-28 using Class B or C preservative

When treated timbers are cut, the cut surfaces shall be effectively brushed with at least two coats of preservative solution

I.4 CONSTRUCTION IN GENERAL

Where applicable, construction methods shall comply with SANS 10082. Wood and laminate flooring shall be installed in accordance with SANS 10043. Roof trusses shall be manufactured, erected and braced in accordance with SANS 10243

I.5 STRUCTURAL TIMBER

Timbers generally shall be in single lengths and jointing of timbers will only be permitted when the required length is unobtainable. Only the absolute minimum of joints to obtain a particular length will be permitted and such joints are to be evenly spaced along the length of the timber

Finger-jointing of structural timber will be permitted, in which case it shall be manufactured in accordance with SANS 10096

I.6 PLATE NAILED TIMBER ROOF TRUSSES

Plate nailed timber roof trusses shall be of approved design and manufacture and constructed with softwood structural timber by a truss Fabricator holding a current Certificate of Competence awarded by the Institute of Timber Construction

Each roof truss shall have all its members accurately cut and closely butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, precision pressed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions

The design, manufacture and transportation of the roof trusses, bracing, etc shall be under the control of a registered Structural Engineer in accordance with SANS 1900, SANS 10160 and SANS 10163, who shall, after erection, provide a certificate confirming that the design, manufacture, transportation, erection and bracing has been carried out in accordance with this specification

The design shall include for all live loads, wind loads and for dead loads imposed by roof covering, purlins, ceilings, etc

Fully detailed shop drawings of all trusses etc, indicating sizes, bracing, loading, etc, shall be submitted to the Principal Agent for approval prior to fabrication

Unless specific erection instructions are given, erection shall be carried out in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research or as detailed by the designer

Roof trusses and bracing shall include design and preparation of shop drawings

I.7 TONGUED AND GROOVED BOARDING

Tongued and grooved boards for floors, panelling, etc shall be in long varying lengths with joints tightly cramped up and secret nailed. Flooring boarding shall be flush jointed with staggered heading joints and machine sanded after fixing

I.8 JOINERY

Skirtings, cornices, rails, etc shall be in single lengths wherever practicable and shall have splayed heading joints where
necessary. Skirtings shall be trenched at back

All horns of door frames shall be checked and splayed back where frames are fixed projecting or flush with surface and built in

Heads of screws in exposed faces of hardwood joinery shall be sunk and match pelleted

Joinery shall have arris rounded angles and shall be blocked and planted on

I.9 VENEERS

All face veneers shall be of kiln dried timber, free from knots, cracks, patchwork, sapwood and other defects, selected and glued, dried and machine-sanded to a smooth finish. All veneers shall be applied under hydraulic pressure

I.10 DOORS

Flush doors shall have solid timber edge strips with concealed edges. Where doors are to be finished with a transparent finish, the veneer and the edge strips shall be timber of the same species and as far as possible of matching colour. Unless otherwise described all flush doors shall be of interior quality, but where exterior quality doors are specified the glue used shall be of the WBP type

Framed and ledged batten doors described as filled in with V-jointed boarding shall be filled in flush on one side with tongued and grooved vertical boarding, V-jointed on one or both sides and of the thickness stated. The boarding shall be in narrow widths, closely cramped up, rebated or tongued on outer edges and housed to grooves in stiles and rails and twice countersunk brass screwed at each intersection with ledges and braces and the inner edges of the abutting stiles and rails shall be chamfered to form a V-joint at junction with the board

Unless otherwise described double doors shall have rebated meeting stiles

I.11 FIXING

All nails and screws shall be of the size, length and type appropriate to their respective uses. All screws for hardwood joinery work shall be brass

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs at not exceeding 600mm centres. Where items are described as "bolted", the bolts have been given separately

I.12 ADHESIVES

Adhesives shall comply with BS 1204 and 4071 where applicable. Adhesives used in the manufacture of external joinery exposed to excessive moisture (eg kitchen and laboratory worktops) shall be of the WBP type

J. CEILINGS, PARTITIONS AND ACCESS FLOORING

J.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Gypsum cove cornice	SANS 622
Wood-wool panels (cement-bonded)	SANS 637
Sawn softwood timber : Brandering and battens	SANS 1783-4
Sawn softwood timber : Timber for frame wall Construction	SANS 1783-2
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Raised access flooring	SANS 1549

J.2 TONGUED AND GROOVED BOARDING

Tongued and grooved boarding for ceilings shall be in long varying lengths, V-jointed one side and with joints tightly cramped up and secret nailed

J.3 CEILINGS ETC

J.3.1 Brandering

Brandering for ceilings and eaves soffit coverings shall be symmetrically arranged with necessary smaller panels. Main branders shall be at right angles to roof timbers, with cross branders cut in between and branders shall be fixed with galvanized wire nails driven in on skew alternately in opposite directions

J.3.2 Ceiling boards

Ceiling boards shall be in long lengths symmetrically arranged with necessary smaller panels, closely butted and secured at 150mm centres to brandering with galvanized or cadmium-plated clout-headed nails

J.4 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

J.5 EXPOSED TEE-SYSTEM SUSPENDED CEILINGS

The ceiling panels shall be as described in the items and the panels shall be stiffened at back as recommended by the manufacturer to prevent bowing or sagging

The exposed surfaces of all ceiling panels and supporting members shall be uniform in colour and free from surface blemishes

The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bearers. The exposed flange of the tees shall be 25mm wide, covered with a rolled aluminium cap painted a low sheen satin white. Cornices etc shall be as described in the items and shall be finished to match the exposed tees

The main tee bearers shall have holes for cross tees at 300mm centres and holes for hangers at 50mm centres. In addition, main and cross tee bearers shall be holed as necessary for and provided with timber wedges or steel clips where recommended by the manufacturer to prevent ceiling panels from lifting

The web of the exposed cross tee bearers shall extend to form a positive interlock with the main tee bearers and the lower flange shall be cut back to provide a joint free appearance

All hangers shall be galvanized and shall be at centres to meet the requirements of the specification with one end fixed to the suspension grid main bearers and the other end fitted with suitable galvanized fixing cleat securely fixed to the structure. Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducts. Where recommended by the manufacturer, hangers shall be of the rigid type

Component parts and fixings shall be non-corrosive and able to withstand atmospheric pollution. Surfaces of aluminium which are in contact with other materials when fixed, particularly metals, shall be suitably insulated to prevent electrolytic corrosion

Ceilings shall comprise hangers, suspension grid system and ceiling panels, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension systems modified as necessary to work around any pipes or light fittings

J.6 FLUSH PLASTERED SUSPENDED CEILINGS

Gypsum plasterboard panels of the specified thickness generally in 1200mm widths and in long lengths shall be fixed grey side down with self-tapping screws to the suspension system with the joints between boards loosely butt jointed and covered with 50mm wide strips of self-adhesive fibre tape

The plasterboard panels shall be finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness etc recommended by the manufacturer

The suspension system shall be an approved patent concealed suspension system consisting of galvanized mild steel bearers suspended on approved non-rusting metal hangers spaced generally at 1200mm centres or to suit layout of air-conditioning ducts and other services etc above ceiling with one end bolted to the bearer and the other end fitted with a galvanized fixing cleat securely fixed to the structure as required

Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducting

Ceilings shall comprise hangers, suspension system, ceiling panels and plaster finish, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension system modified as necessary to work around any pipes or light fittings

K. FLOOR COVERINGS, WALL LININGS, ETC

K.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Semi-flexible vinyl floor tiles	SANS 581
Resin modified vinyl floor tiles	SANS 586
Flexible vinyl flooring	SANS 786
Hardwood block and strip flooring	SANS 281
Wood mosaic flooring	SANS 978
Textile floor coverings (pile construction)	SANS 1375
Textile floor coverings (needle-punched construction)	SANS 141
Carpet underlays	SANS 1419
The installation of wood and laminate flooring	SANS 10043
The installation of resilient thermoplastic and similar flexible floor covering materials	SANS 10070
The installation of textile floor coverings	SANS 10186
Sheet linoleum (calendered types), cork, carpet and linoleum tiles	BS 810
Solid rubber flooring	BS 1711
Felt backed linoleum	BS 1863

K.2 LAYING OF MATERIAL

Floor tiles shall be laid with continuous joints in both directions

Patterned floor coverings shall be matched at joints

K.3 GENERAL

Floor coverings, wall linings, skirtings, nosings, etc shall include all preparatory work to screeded or plastered surfaces etc, priming coats and adhesives

Floor coverings and wall linings shall be dressed around and into corners. Wood block and wood mosaic flooring shall be sanded with a sanding machine and sealed with a coat of approved penetrating sealer

Plastic handrails shall have welded and polished butt joints

L. IRONMONGERY

L.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Locks, latches and associated furniture for doors. (Domestic type)	SANS 4
Kitchen cupboards: Built-in and free-standing	SANS 1385
Single action closers	SANS 1510
Padlocks	SANS 1533
Fasteners	SANS 1700
Chalk writing boards for schools	CKS 36

L.2 KEYS

Locks shall have the minimum possible number of interchangeable keys. Cylinder locks and locks described as "en suite" shall be clearly marked with consecutive numbers and each key shall be punched with the corresponding number of the relative lock

L.3 FIXING

Unless otherwise described, ironmongery is to be fixed to wood

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs

Screws, bolts, etc for fixing of ironmongery shall be of matching metal and finish, except for aluminium ironmongery or ironmongery fixed to aluminium in which cases stainless steel screws may be used

All necessary preparation of pressed steel door frames for the fixing of ironmongery to the frames has been included with the pressed steel door frames

L.4 KITCHEN CUPBOARDS

Steel cupboards shall be finished with baked enamel. Tops of floor cupboards shall have laminated plastic covering

Cupboards shall be fitted with all necessary hinges, handles, catches, etc. Cupboards shall be securely fixed with all necessary screws and fibre, plastic or metal plugs

Where cupboards are described as a "series", tops shall be continuous and cupboards shall be bolted or screwed together, including bolts, screws, holes, etc

M. STRUCTURAL STEELWORK

M.1 SPECIFICATION

All structural steelwork shall comply with SANS 1200H or 1200HA as applicable. Structural fasteners shall comply with
SANS 1700

Whenever the term "Engineer" appears in SANS 1200H or 1200HA or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

M.2 PROJECT SPECIFICATION INCORPORATING AMPLIFICATIONS, ADDITIONS AND AMENDMENTS TO SANS 1200H AND 1200HA

The following amplifications, additions and amendments to SANS 1200H and SANS 1200HA shall apply and clause numbers refer to either the existing clauses in the relevant SANS or to new clauses which are related to the clauses therein

SANS 1200H

3.1.1 **Weldable structural steel**

Weldable structural steel shall comply with SANS 1431

5.1.2 **Contractor provides shop details**

The Contractor shall be responsible for the preparation of all shop detail drawings

5.1.3 **Engineer provides shop details**

This clause shall not apply

5.3.9 **Protective treatment**

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

8. **Measurement and payment**

This clause shall not apply

SANS 1200HA

5.2.10 **Protective treatment**

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

5.3.7 **Repairs to paint and site painting**
This clause shall not apply

8. **Measurement and payment**

This clause shall not apply

N. METALWORK

N.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Fasteners	SANS 1700
Expanded metal	SANS 190-1&2
Windows and doors made of rolled mild steel sections	SANS 727
Hot-dip galvanized zinc coatings on fabricated iron and steel articles	SANS 121
Strongroom and vault doors	SANS 949
Anodized coatings on aluminium (for architectural applications)	SANS 999
Steel door frames	SANS 1129
Mushroom- and countersunk-head bolts and nuts	SANS 1143
Welding of metalwork	SANS 1044
Adjustable glass-louvred windows	CKS 413
Aluminium sheet and strips	BS 1470
Aluminium extruded tube and hollow sections	BS 1474
Aluminium bars and sections	BS 1476

N.2 STEEL

Steel shall be mild steel of approved commercial quality. Steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and given one coat of primer as specified before leaving the workshop

N.2.1 Galvanizing of steel

Steelwork described as "galvanized" shall be galvanized by means of the hot-dip process after fabrication. Where welding on site is unavoidable, such welded joints shall be cleaned down and cold galvanized to approval

N.3 STAINLESS STEEL

Stainless steel shall be AISI Type 304 stainless steel and shall be buffed to an even satin finish. Stainless steel screws shall be used for fixing stainless steel

N.4 ALUMINIUM

Aluminium extrusions shall be of 6063-T6 alloy and temper. Aluminium sheet and strips shall be of 1200-H4 alloy and temper.
Joints in all aluminium members shall be formed in an approved manner so that the joints are practically invisible. Screw heads, pins, rivets, etc shall be concealed as far as possible. 300 Series stainless steel screws and bolts shall be used for jointing and fixing aluminium work

The surfaces of all aluminium which are in contact with other materials when fixed shall be suitably insulated with a non-absorbent insulating material to prevent corrosion. All aluminium work shall be suitably protected against damage, deterioration or discolouration caused by mortar droppings, paint, etc by taping with removable tape, covering with temporary casings or by covering with motor oil

N.4.1 Anodizing of aluminium

Aluminium described as "anodized" shall be treated with Grade 25 coating thickness for exterior use or Grade 15 for interior use as specified, to the required finish. All alloys to be anodized shall be suited to anodizing

N.5 BOLTS AND NUTS

Nuts shall be of at least the strength grade appropriate to the grade of bolt or other threaded element with which they are used

N.6 SCREWING OF METALWORK TO STEEL, WOOD, CONCRETE, ETC

Metalwork described as "screwed" to steel, wood, etc or "plugged" to brickwork, concrete, etc shall be fixed at not exceeding 500mm centres, with necessary holes, countersinking, threading, screws, set screws, self-tapping screws and fibre, plastic or metal plugs

N.7 BOLTING OF METALWORK

Where metalwork is described as "bolted" to steel, wood, brickwork, concrete, etc the bolts are measured elsewhere

N.8 WELDING OF METALWORK

All welds shall be cleaned and filed or ground off smooth to approval. All welded joints shall be continuous

N.9 METALWORK GENERALLY

Metalwork shall have all sharp edges ground smooth. Tubular and pipe work shall include running joints. Rails etc described as "continuous" shall be in long lengths with welded joints

N.10 PRESSED STEEL DOORS, FRAMES, ETC

N.10.1 Door frames

Frames shall project not less than 20mm into floor finish. Except where described as galvanized, frames shall be primed as specified before leaving the factory. Frames are to jambs and heads of openings. Frames for single doors shall be provided with two 100mm steel butt hinges and an adjustable striking plate for a mortice lock and frames for double doors shall be provided with four 100mm steel butt hinges. Butt hinges shall be steel butts with loose pins, welded to frames. Where necessary mortar caps shall be welded to frames and back plates shall be welded on behind tappings for screws

N.10.2 Cupboard door frames

Cupboard door frames shall be as described in N.10.1, but with thresholds of unequal channel section, two 100mm steel butt hinges to hanging stiles, two 75mm steel butt hinges to hanging stiles above transoms, necessary striking plates for mortice locks and keeps for barrel bolts

N.10.3 Combination doors and frames

Combination doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be standard design and required profile, with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with two reinforcing rails welded on. The door shall be provided with two lever mortice lock with lock box welded to inside. Doors shall be welded to steel butts

N.10.4 Transformer room doors and frames

Transformer room doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be of standard design with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with three reinforcing rails welded on. Single doors shall be fitted with a padlock cleat and two 100mm brass pintle hinges and double doors shall be fitted with a padlock cleat, two 150mm bolts and four 100mm brass pintle hinges. Each leaf shall be fitted with a louvered ventilation panel of standard design backed with 6mm mesh galvanized wire vermin proof screen

N.10.5 Sizes

The frame widths given refer to unfinished wall thicknesses

N.10.6 Glazing beads

Where specified, glazing beads shall be 12 x 12mm standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

N.11 STEEL WINDOWS, DOORS, ETC

N.11.1 Windows, doors, etc

All fittings to windows, doors, etc shall be chromium plated. Fixed lights and opening sashes shall be in single squares. Windows etc of single unit construction shall have weather bars at transoms above opening sashes

Composite windows not of single piece construction shall be coupled with standard coupling mullions and transoms that correspond with the window section used

Kicking plates and panels shall be 1,6mm metal plate fixed with standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

Except where described as galvanized, windows, doors, burglar bars, etc shall be primed as specified before leaving the factory

N.11.2 Burglar bars and flyscreens

Where windows are described as fitted with burglar bars or flyscreens, these shall be standard type fitted over opening sashes

N.12 ADJUSTABLE LOUVRE UNITS

Adjustable louvre units shall be suitable for hand or longarm operation

Louvre units shall include glass louvres with polished edges and installation, including holes, screws, rivets, preparation of openings, etc

N.13 ALUMINIUM WINDOWS AND DOORS

The foregoing preambles "N.4 – ALUMINIUM" shall apply to aluminium windows, doors, etc in all respects in so far as they are applicable. Aluminium windows and doors shall be manufactured from extruded aluminium members of 6063T6, 6261-T6 or 6082-T6 alloy and temper

Ancillary members such as sills, flashings, infill panels and the like formed from flat sheet material shall be of an appropriate alloy selected from 1200, 3004 or 5251 complying with BS 1470 of a temper suitable for the method of forming and a composition suitable for anodizing or painting as required

Windows, doors, etc shall be of an approved standard system, manufactured by an approved firm experienced in this type of work, and shall meet with the minimum recommended performance requirements as set out by the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA) in the latest edition of the Selection Guide

The fittings for all opening sashes shall be substantial and, unless otherwise described, shall be of high quality aluminium alloy finished to match the windows, doors, etc on which they occur. Samples of all fittings shall be supplied to the Principal Agent for approval

Top, side and bottom hung opening sashes shall be hung on two aluminium hinges with 300 Series stainless steel pins, nylon bushes and stainless steel washers. Side hung sashes shall have fasteners and sliding stays, top hung sashes shall have peg stays and bottom hung sashes shall have spring catches and concealed arms

Projected out sashes shall have aluminium fasteners and concealed arms of a non-corrosive material compatible with aluminium

The frames which are to be built into openings in brickwork shall be fitted with the manufacturer's standard type fixing lugs, not less than 20 x 3 x 150mm long, screwed to frame and placed one near each corner and intermediately not more than 450mm apart to sides, top and bottom and where fixed to concrete reveals, wood sub-frames or to preformed openings in brickwork shall have countersunk holes for screws, one near each corner and intermediately not more than 450mm apart to sides, top and bottom

N.13.1 Glazing beads

Where so described, openings and sashes of windows and doors shall be fitted with approved channel section aluminium glazing beads sufficient in size and profile to suit the method of glazing employed, finished to match the windows, doors, etc and neatly mitred. Screws where necessary shall be of aluminium or 300 Series stainless steel and have pan or raised heads finished to match the beads

N.13.2 **Finishes**

Windows, doors, etc described as "anodized" shall be treated with Grade 25 coating thickness. Windows, doors, etc described as "factory painted" shall have an electrostatically applied oven baked polyester paint coating not less than 25 micrometres thick

N.13.3 **General**

Aluminium windows, doors, etc shall include glass as described, fixing in position, sealing and protection against damage, deterioration or discolouration by taping with removable tape or covering with temporary casings or motor oil and removing same on completion

N.14 STRONGROOM AND RECORD ROOM DOORS

Strongroom and record room doors shall not be built in as the work proceeds, but shall be fixed later in the openings provided. The Contractor shall ensure that the lock or other important parts of the door are not tampered with. Should any such tampering occur, the Contractor will be held responsible and at the Principal Agent's discretion shall provide a new door or lock and keys at his own expense. The keys shall not be delivered together with the doors to the building site. The Contractor shall arrange for the manufacturer to send the keys direct to the Principal Agent per registered post. If these instructions are not complied with, a new lock and keys shall be provided by the Contractor at his own expense

N.15 STEEL ROLLER SHUTTERS

Roller shutters shall be of approved manufacture comprising curtain, vertical channel guides and top mechanism. The curtain shall be constructed of 1mm thick machine-rolled galvanized interlocking slats with mild steel end locks spot welded to alternate strips. The bottom shall be provided with a galvanized rail riveted on and vertical edges shall slide in galvanized channel guides formed of steel not less than 2,5mm thick bolted to sides of openings

The mechanism shall be covered in a galvanized sheet iron box. The ungalvanized sections shall be primed as specified before leaving the factory

O. PLASTERING

O.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 225X)
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090

O.2 PREPARATORY WORK

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

O.3 FINISH

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

O.4 SCREEDS

Screeds shall be composed of one part cement and four parts sand

O.5 CEMENT RENDER

Cement render shall be composed of one part cement and three parts sand finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Cement render finish shall be divided into panels not exceeding $6m^2$ with V-joints and deep trowel cuts

O.6 GRANOLITHIC

Granolithic shall be composed of one part cement, one part fine sand, two parts coarse sand and one part granite or other approved stone aggregate that will pass through a 5mm sieve, finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid

Granolithic shall be divided into panels not exceeding $6m^2$ with V-joints and deep trowel cuts

O.7 TERRAZZO

Terrazzo shall be applied in two coats. The undercoat shall be composed of one part cement and three parts sand and shall be finished with a wooden float. The finishing coat shall be composed of one part cement and two parts marble or stone aggregate of a colour and size to obtain the required colour and texture and shall be at least 12mm thick, and applied before the undercoat has dried out. The finishing coat shall be compacted by tamping or rolling until superfluous water has been expelled, finished with a steel trowel and cured for at least seven days after laying. The finished surface shall show at least 80% of the aggregate

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "brushed" shall be brushed with a steel wire brush on the day the terrazzo has been laid to expose the aggregate as required

Where required, brass or other dividing strips shall be embedded in the undercoat to finish flush with the finished surface

Three sample blocks, each size 300 x 300mm, as separately measured shall be prepared for approval by the Principal Agent and kept in an accessible place on the site until the completion of the contract

O.8 SKIRTINGS

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

O.9 THICKNESS OF PLASTER

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

O.10 CEMENT PLASTER

Cement plaster shall comply with the following table:

1	2	3
Plaster Class	Cement:sand (common cement)	Cement:sand (masonry cement)
I	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

O.11 COMPO PLASTER

Compo plaster shall be composed of one part cement, two parts lime and nine parts sand

O.12 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

O.13 TWO COAT PLASTER WITH GYPSUM FINISH

Two coat plaster with gypsum finish shall comprise an undercoat of Class II cement plaster finished with a wooden float and a finishing coat of gypsum skim plaster

O.14 ROUGH-CAST PLASTER

Rough-cast plaster shall be applied in two coats. The undercoat shall be composed of one part cement and five parts sand finished with a wooden float. The finishing coat shall be composed of one part cement and three parts stone aggregate that will pass through a 4mm sieve. The finishing coat shall be flicked on with a machine before the undercoat has set to obtain an even texture

O.15 FINE ROUGH-CAST PLASTER

Fine rough-cast plaster shall be as for rough-cast plaster but the finishing coat shall be composed of one part cement and three parts coarse sand

0.16 GENERAL

Rates for plastering described as being on vertical surfaces of brickwork or blockwork shall include concrete columns, beams and lintels flush with the face of the wall

P. TILING

P.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glazed ceramic wall tiles and fittings	SANS 22
Ceramic wall and floor tiles	SANS 1449
Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 22,5X)
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090
The design and installation of ceramic tiling	SANS 10107

P.2 TILES, MOSAICS, ETC

Tiles, mosaics, etc shall be even in shape and size, free from cracks, twists or blemishes and uniform in colour

P.3 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any tiling is commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key

P.4 CERAMIC WALL AND FLOOR TILING

Where tiles are fixed to plaster or screeds with an adhesive, the adhesive shall be as recommended by the manufacturer of the tiles. Joints shall be straight, continuous and flush pointed with an approved grouting compound

P.5 GENERAL

Tiling described as "on walls" is on brick walls or block walls unless otherwise stated and shall include concrete columns, beams and lintels flush with the face of the wall

Q. PLUMBING AND DRAINAGE

Q.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sheet metal	
Sheet zinc	BS 849
Sheet aluminium	BS 1470
Sheet copper	BS 2870
Rainwater systems	
Unplasticized poly(vinyl chloride) (PVC-U) components for external rainwater systems	SANS 11
Pipes and fittings	
Steel pipes : Pipes suitable for threading and of nominal size not exceeding 150mm	SANS 62
Plain-ended solid drawn copper tubes for Potable water	SANS 460
Malleable cast iron fittings threaded to ISO 7-1	SANS 4
Polyethylene (PE) pipes for water supply – Specifications	SANS 4427
Cast iron fittings for asbestos cement pressure pipes	SANS 546
Vitrified clay sewer pipes and fittings	SANS 559
Reinforced concrete pressure pipes	SANS 676
Concrete non-pressure pipes	SANS 677
Cast iron pipes and pipe fittings for use above ground in drainage installations	SANS 746
Unplasticized poly(vinyl chloride) (PVC-U) sewer and drain pipes and pipe fittings	SANS 791
Fibre-cement pipes, couplings and fittings for sewerage, drainage and low-pressure irrigation	SANS 819
Pitch-impregnated fibre pipes and fittings and jointing	SANS 921
Unplasticized poly (vinyl chloride) (PVC-U) pressure pipe systems	SANS 966-1
Unplasticized poly(vinyl chloride) (PVC-U) soil, waste and vent pipes and pipe fittings	SANS 967
Rubber joint rings (non-cellular)	SANS 974-1
Copper-based fittings for copper tubes	SANS 1067-1&2
Fibre-cement pressure pipes and couplings	SANS 1223
Polypropylene pressure pipes	SANS 1315
Non-metallic waste traps	SANS 1321-1&2
Vent valves for drainage installations	SANS 1532
Heavy duty cast iron pipe fittings for drainage and gas and water supplies	BS 78

Lead pipes	BS 602
Cast iron pressure pipes for use in drainage and gas and water supplies	BS 1211
Stainless steel pipes for use with compression fittings	BS 4127
Sanitary fittings etc	
Stainless steel sinks with draining boards (for domestic use)	SANS 242
Stainless steel wash-hand basins and wash troughs	SANS 906
Stainless steel sinks for institutional use	SANS 907
Stainless steel stall urinals	SANS 924
Acrylic sanitary ware : Baths	SANS 1402-1
Glazed ceramic sanitary ware	SANS 497
WC flushing cisterns	SANS 821
Flush valves for WC flushing cisterns	SANS 1509
Taps, valves etc	
Water taps (metallic bodies)	SANS 226
Water taps (plastic bodies)	SANS 1021
Single control mixer taps	SANS 1480
Float valves	SANS 752
Plastic floats for ball valves	SANS 1006
Functional control valves and safety valves for Domestic hot and cold water supply systems	SANS 198
Cast iron gate valves for waterworks	SANS 664
Automatic shut-off flush valves for water closets and urinals	SANS 1240
Check valves (flanged and wafer types)	SANS 1551-1&2
Fire extinguishers	
Portable refillable fire extinguishers	SANS 1910
Portable rechargeble fire extinguishers : Halogenated hydrocarbon type extinguishers	SANS 1151
Water heaters and fire hose reels	
Fixed electric storage water heaters	SANS 151
Fire hose reels (with semi-rigid hose)	SANS 543
Drainage covers, gratings, etc	
Cast iron surface boxes and manhole and inspection covers and frames	SANS 558
Cast iron gratings for gullies and stormwater drains	SANS 1115
The installation of polyethylene and poly (vinyl chloride) (PVC-U and PVC-M) pipes	SANS 10112
Water supply and drainage for buildings	SANS 10252-1&2

Cast iron step irons	BS 1247

Q.2 GENERAL

Q.2.1 Excavations

Excavations shall be deemed to be in "earth". Backfilling to excavations shall be executed in 300mm thick layers, watered and compacted. Surplus excavated material shall be spread and levelled over site as directed

Q.2.2 Concrete

Unreinforced concrete shall be Class B prescribed mix concrete and reinforced and precast concrete shall be Class C prescribed mix concrete

Q.2.3 Brickwork

Brickwork shall be of extra hard burnt bricks built in Class I mortar

Q.2.4 Plaster

Plaster shall be 1:3 cement plaster finished smooth with a steel trowel. All angles shall be rounded

Q.2.5 Diameters of pipes etc

Diameters stated for pipes, traps, valves, etc are internal diameters except PVC, polyethylene, stainless steel and copper pipes and traps for which external diameters are stated

Q.3 SHEET METAL WORK

Q.3.1 Galvanized sheet iron

Galvanized sheet iron shall be rolled steel sheet coated on both sides with Class Z275, unless otherwise specified, zinc coating complying with SANS 3575/4998. Sheets shall be free from white rust

Q.4 EAVES GUTTERS

Q.4.1 Galvanized sheet iron gutters

Galvanized sheet iron gutters shall have beaded edges and all joints shall be riveted and soldered. Angles shall be strengthened with 50 x 0,6mm galvanized sheet iron strips soldered on over the internal faces of mitres

Gutters shall be fixed with falls to outlets on 30 x 3mm galvanized mild steel brackets, bent to the shape of gutters, with front ends taken up to the underside of beaded edge of gutter and each screwed to roof timbers or bolted to fibre-cement fascias with 6mm galvanized gutter bolts. Gutters shall be bolted to brackets at front with 6mm galvanized gutter bolts, one to each bracket

Brackets shall be positioned at joints of gutters and intermediately at not exceeding 1,25m centres

Q.4.2 Fibre-cement gutters

Fibre-cement gutters shall have spigot and socket joints. Gutters shall be fixed with falls to outlets on standard aluminium alloy brackets, screwed or bolted to roof timbers or fascias

Q.4.3 Unplasticized polyvinyl chloride (UPVC) gutters

Gutters shall be fixed with falls to outlets on brackets as supplied by the manufacturer, screwed or bolted to roof timbers or fascias

Q.4.4 Aluminium gutters

Aluminium gutters shall be roll formed on site to required lengths and profiles from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides with baked enamel and two coats of silicone modified polyester to a total minimum thickness of 20 micrometres. Angles, stopped ends, etc shall be prefabricated units pop riveted to gutters with joints sealed with mastic. The guttering shall be in continuous lengths between angles, stopped ends, etc

Q.5 RAINWATER PIPES

Q.5.1 Galvanized sheet iron pipes

Galvanized sheet iron pipes shall have seams at the back and shall be jointed with soldered slip joints. Pipes shall be fixed to walls etc with galvanized mild steel holderbats spaced at not exceeding 2m centres with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.2 Fibre-cement pipes

Fibre-cement pipes shall have spigot and socket joints. Pipes shall be fixed to walls etc with standard aluminium alloy holderbats with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.3 Unplasticized polyvinyl chloride (UPVC) pipes

Pipes shall be fixed to walls etc with patented UPVC or aluminium clips and holderbats as supplied by the manufacturer of the pipe

Q.5.4 Aluminium pipes

Aluminium pipes and fixing straps shall be formed from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides as described for aluminium gutters. Pipes shall be in continuous lengths with formed angles, offsets, shoes, etc. Pipes shall be fixed to walls etc with 20 x 0,6mm straps at not exceeding 1,5m centres screwed to 25 x 75 x 100mm hardwood chamfered and oiled blocks plugged to walls

Q.6 STORMWATER CHANNELS

In-situ concrete stormwater channels shall be constructed of unreinforced concrete with segmental channel formed in top. Channels shall be laid to falls on a well rammed earth bottom and finished smooth on exposed surfaces

Precast concrete channels shall be of 25 MPa concrete, generally in 1m lengths, finished smooth from the mould on exposed surfaces, laid to falls on a well rammed earth bottom, jointed in 1:3 cement mortar and pointed with keyed joints

Q.7 JOINTS

Joints of pipes not covered by SANS shall be as follows:

Pipes	Joints
Fibre-cement, concrete, pitch-impregnated fibre and vitrified clay pipes for use under ground in non-pressure pipe lines	Flexible joints in accordance with the manufacturer's instructions
Cast iron for use above ground	Spigot and socket joints with tarred rope yarn and caulking compound or Plain ended joints with stainless steel couplings with neoprene rubber sleeves
Cast iron for use below ground	Spigot and socket joints with tarred rope yarn and caulking compound
Galvanized mild steel	Joints of screwed galvanized steel sockets or bolted galvanized iron flanges Screwed joints with plastic jointing tape or hemp Flanged joints which shall be bolted and provided with rubber gaskets and with flanges screwed to pipes
Joints between pipes of different materials shall be as follows:	
Between cast iron and mild steel	Spigot and socket joints with tarred rope yarn and caulking compound
Between cast iron and clay	Spigot and socket joint with semi-dry cement caulking and 1:2 cement mortar fillet
Between mild steel or copper and clay	Spigot and socket joint with either bitumen or semi-dry cement caulking and 1:2 cement mortar fillet

Q.8 FIXING OF PIPES

Pipes shall be fixed as follows:

Q.8.1	Galvanized mild steel (except those stated in Q.8.3)	To walls with galvanized mild steel brackets for pipes not exceeding 80mm diameter and with galvanized cast iron hinged holderbats with brass pins or bolts for pipes exceeding 80mm diameter; both types with tails cut and pinned in 1:3 cement mortar To woodwork with screw-on type galvanized mild steel holderbats
Q.8.2	Copper and stainless steel	To walls with brass holderbats or screw-on type two- piece spacing clips for pipes not exceeding 75mm diameter and with purpose made holderbats for pipes exceeding 75mm diameter; both types with tails cut and pinned in 1:3 cement mortar To woodwork with screw-on type brass holderbats
Q.8.3	Cast iron and galvanized mild steel for soil, waste and vent pipes	To walls with hinged cast iron holderbats with brass bolts and with tails cut and pinned in 1:3 cement mortar To woodwork with screw-on type galvanized mild steel holderbats
Q.8.4	Polyethylene, polypropylene and patented UPVC or unplasticized polyvinyl chloride	To walls, woodwork, etc with aluminium clips and holderbats as supplied by the manufacturer of the pipes
Q.8.5	Fibre-cement	To walls with aluminium alloy holderbats with tails cut and pinned in 1:3 cement mortar

Q.8.6	Pipes fixed to ceilings	Fixed with holderbats and standard or purpose made hangers, with extended hangers for pipes to falls

Q.9 PIPES LAID IN GROUND

Q.9.1 Water pipes etc

Water pipes, gas pipes, etc laid in ground shall be at least 400mm deep from the crown of the pipe to the finished surface

Q92 Drain pipes

Excavations taken out too deep shall be filled in with selected soil and compacted. Backfilling to sides and up to 300mm above plastic pipes shall be free from stone or hard substances which will not pass a 10mm mesh

Q.10 CLEANING EYE LIDS

Cleaning eye lids for drain pipe fittings shall be fixed and sealed as follows:

Pipe fittings	Method of sealing and fixing
Fibre-cement	Sealed with synthetic rubber or bituminous mastic packing and fixed with screws
Vitrified clay	Polypropylene lid sealed with synthetic rubber packing and pressed into position
Polypropylene and unplasticized polyvinyl chloride	Sealed with synthetic rubber packing and screwed on or pressed into position
Cast iron	Sealed with tallow or putty and fixed with non-ferrous metal screws
Galvanized malleable cast iron and cast brass	Sealed with synthetic rubber packing and screwed in

Q.11 CLEANING EYES

Cleaning eyes shall consist of cast iron frames and lids with letters "CE" (or "SO") cast in lids. The lids shall be secured with non-ferrous metal screws. Frames shall be jointed to vertical drain pipes. Cleaning eyes shall be encased in unreinforced concrete taken up to ground level and plastered on exposed surfaces

Q.12 INSPECTION EYE MARKER SLABS

Inspection eye marker slabs shall be 350 x 350 x 50mm thick precast concrete finished smooth from the mould, with letters "IE" (or "IO") formed in top and placed flush in ground or paving

Q.13 GULLEYS

Gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete to finish flush with gulley head top and taken up to at least 50mm above surrounding finished surfaces. The outer top edge of the concrete encasing shall be splayed and the exposed surfaces plastered

Q.14 DISHED GULLEYS

Dished gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete and with dished unreinforced concrete hopper size 450 x 450mm overall around gulley head with rounded kerb 50mm wide to front and sides and 25mm wide at back, 100mm high above top of dishing and the hopper plastered on exposed surfaces. Top of hopper shall be taken up to at least 50mm above surrounding finished surfaces

Q.15 SUMPS, CATCHPITS, INSPECTION CHAMBERS, ETC

Q.15.1 Rainwater sumps

Rainwater sumps shall be built with half-brick sides on 100mm thick unreinforced concrete bottom, plastered internally on walls and with 80mm high unreinforced concrete kerb at top rebated for grating or cover and plastered on exposed surfaces

Q.15.2 Stormwater catchpits and inspection chambers

Brick catchpits and inspection chambers shall be built with one-brick sides on 150mm thick unreinforced concrete bottom projecting 100mm beyond walls all round, plastered internally on walls and with 100mm thick reinforced concrete cover slab with opening rebated for frame of grating or cover and plastered on exposed surfaces

Precast concrete catchpits and inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LE-1 of SANS 1200LE. Precast concrete manhole sections and slabs shall comply with SANS 1294 and pipes shall be SC type and in accordance with SANS 677

Q.15.3 Sewer inspection chambers

Brick inspection chambers shall be built as for brick stormwater inspection chambers and with the bottom of the chamber well benched around half round channels, bends, junctions, etc up to sides of chamber in unreinforced concrete finished smooth

Precast concrete inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LD-5 of SANS 1200LD. Precast concrete manhole sections and slabs shall comply with SANS 1294 and the pipes shall be SC type in accordance with SANS 677

Q.15.4 Stormwater drain junction boxes

Junction boxes shall be formed of 150mm thick unreinforced concrete bottom and sides to suit the various sizes of the drain pipes and built after the pipes have been laid, with the sides taken up slightly higher than the highest pipe and finished level on top for and covered with a 75mm thick loose precast concrete slab

Q.15.5 Step irons

Where inspection chambers exceed 1,2m deep, cast iron step irons shall be provided, built into the wall at 300mm centres and staggered regularly in vertical rows spaced at 200mm centres horizontally

Q.16 STOPCOCK AND METER BOXES

Stopcock and meter boxes shall be built with half-brick sides with a cast iron box and lid complying with SANS 558 set in 75mm wide unreinforced concrete kerb for the full depth of the cast iron box and plastered on exposed surfaces

Q.17 VALVE CHAMBERS

Valve chambers shall be built with half-brick sides with 100mm thick unreinforced concrete kerb to top with rebate for cover and frame to finish flush with adjacent paving or finished ground level and plastered on exposed surfaces

Q.18 CAST IRON COVERS, GRATINGS, ETC

All cast iron covers, gratings, frames and surface boxes shall be coated with preservative solution. Frames shall be cast into concrete. Covers, except covers to stormwater drainage or electrical cable inspection chambers, shall be set in grease

Q.19 CONCRETE ENCASING

Concrete encasing for pipes, bends, traps, gulleys, grease traps, etc shall be unreinforced concrete not less than 100mm thick all round

Q.20 SANITARY FITTINGS

Q.20.1 General

Glazed ceramic, acrylic and porcelain enamelled sanitary fittings and component parts shall be white. Accessories for sanitary fittings shall be chromium plated brass

Waste outlets for baths, basins, etc shall comprise chromium plated brass waste union with grating, rubber washers and locknut, fitted with rubber or vulcanite plug on a chromium plated brass chain and stay

Q.20.2 Stainless steel sanitary fittings

Stainless steel sinks and draining boards, basins, wash troughs and urinals shall be AISI Type 304 satin finished stainless steel. All stainless steel fittings shall be treated on the back with a vermin proof sound deadening coating. Sinks, basins and wash troughs shall be provided with 40mm diameter screwed waste outlets

Q.20.3 Precast concrete wash troughs

Reinforced precast concrete wash troughs shall have a sloping front with ribbed rubbing surface and shall be finished smooth on exposed faces with top edges and inner angles rounded. Each compartment shall be fitted with a 40mm diameter waste outlet. Wash troughs shall each be supported on two reinforced precast concrete pedestals finished smooth on exposed faces

Q.20.4 Steel baths

Steel baths shall be porcelain enamelled internally and painted externally and fitted with waste outlet and overflow grating with coupling

Q.20.5 Acrylic resinous baths

Acrylic resinous baths shall be fitted with waste outlet and overflow grating with coupling

Q.20.6 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins and vanity units shall have a smooth high gloss finish, with outlet openings, soap recesses, tap-holes and integral overflow and shall be fitted with waste outlet and overflow grating with coupling

Q.20.7 Glazed ceramic sanitary fittings

Sinks shall be provided with integral weir overflows

Washdown closet pans shall have washdown action and be provided with smooth finished injection moulded polypropylene heavy duty double flap seats fixed with non-ferrous bolts. Urinal channels shall be provided with outlet gratings fitted in bitumen

Q.20.8 Flush and sparge pipes

Flush pipes for high level cisterns shall be of plastic or drawn galvanized steel

Flushpipes for low level cisterns shall be of plastic

Flush and sparge pipes for urinals with high level cisterns shall be of chromium plated copper piping and of the sizes recommended by the manufacturer of the urinal

Q.21 INSTALLATION OF SANITARY FITTINGS

Sanitary fittings shall be installed as follows:

Q.21.1 Precast concrete wash troughs

Precast concrete wash troughs shall be bedded on top of pedestals which shall be bedded on floors in 1:3 cement mortar

Q.21.2 Stainless steel wash troughs and wash hand basins

Stainless steel wash troughs and wash hand basins shall be fixed to walls on a pair of galvanized mild steel gallows brackets bolted to wall with 6mm diameter expanding bolts

Q.21.3 **Acrylic resinous wash hand basins**
Acrylic resinous wash hand basins shall be fixed to walls on a pair of standard painted cast iron brackets screwed to underside of basin and bolted to wall with 6mm diameter expanding bolts

Q.21.4 **Ceramic wash hand basins**

Ceramic wash hand basins shall be fixed to walls on a pair of standard painted steel or cast iron brackets bolted to wall with 6mm diameter expanding bolts

Q.21.5 **Acrylic resinous baths**

Acrylic resinous baths shall be bedded in 1:5 cement mortar on three cross rows of bricks or bedded solid on a layer of dry river sand and fixed to wall with galvanized steel brackets under edges (in the middle of the sides against walls) bolted to wall with 6mm diameter expanding bolts and sealed along top against wall finishes with patent mildew resistant silicone rubber

Q.21.6 **Washdown closet pans and cisterns**

Washdown closet pans shall be bedded on floors in 1:3 cement mortar. Cisterns shall be fixed to walls with 6mm diameter expanding bolts

Q.21.7 **Ceramic urinals**

Ceramic stall and slab urinals shall be bedded on floors and against walls in 1:3 cement mortar. Slabs, channels, treads, etc shall be jointed in 1:3 cement mortar and pointed in white cement

Ceramic bowl urinals shall be fixed to walls on standard steel brackets bolted to wall with 6mm diameter expanding bolts. Cisterns shall be fixed to walls on standard brackets bolted to wall with 6mm diameter expanding bolts

Q.21.8 **Stainless steel urinals**

Stainless steel stall and slab urinals shall be bedded on floors in 1:3 cement mortar and with backs and sides against walls filled in with fine unreinforced concrete. Cisterns shall be fixed as cisterns for ceramic urinals

Q.22 FIRE HOSE REELS

Fire hose reels shall each be fitted with a 30m long hose of internal diameter not less than 19mm with a 4,8mm internal diameter chromium plated brass nozzle

Q.23 FIRE EXTINGUISHERS

All fire extinguishers shall be fully charged

Q.24 TESTS

Sewerage pipe lines, sanitary plumbing including fittings and hot and cold water supply and fire service shall be tested to the approval of the Principal Agent and Local Authority

The Contractor shall provide all testing apparatus, material and labour required for the tests and inspections

S. PAINTWORK

S.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Decorative paint for interior use	SANS 515
Decorative high gloss enamel paints	SANS 630
Primers for wood (for external work)	SANS 678
Primers for wood (for internal work)	SANS 678
Zinc phosphate primer for steel	SANS 1319
Undercoats for paints (except emulsion paint)	SANS 681
Aluminium paint	SANS 682
Varnish for interior use	SANS 887
Emulsion paints	SANS 1586

Materials for paintwork shall be delivered to the site in unopened containers and applied in accordance with the manufacturer's instructions. Materials shall be suitable for application to the surfaces concerned. Undercoats shall be as
recommended by the manufacturer of the finishing coats

S.2 PREPARATORY WORK

S.2.1 Plastered surfaces etc

Plastered surfaces shall be thoroughly inspected and, if necessary, washed down and brushed in order to remove any traces of efflorescence and allowed to dry completely before any paint finish is applied. Before any paint is applied, holes, cracks and irregularities in plaster and other surfaces shall be filled with a suitable filler and finished smooth. Unfinished concrete surfaces shall have all projections rubbed off and shall be thoroughly cleaned with a spirits-of-salts solution (1 part concentrated spirits-of-salts to 4 parts water)

S.2.2 Metal surfaces

Metal surfaces shall be sanded, where necessary, washed with a suitable cleaning agent and left smooth

Protective coatings applied by manufacturers to galvanized metal surfaces shall be removed with a suitable agent and the surfaces washed down

Rust, grease and defective factory primers on metal surfaces, as well as pitch on cast iron pipes, shall be removed

S.2.3 Wood surfaces

Knots in woodwork shall be treated with knotting. Minor blemishes shall be filled with a suitable filler. Wood surfaces shall be sanded smooth

S.3 APPLICATION OF PAINT

Primers to wood surfaces shall be applied by brush. Primers to other surfaces may be applied by roller with the approval of the Principal Agent. Undercoats and finishing coats may be applied by brush or roller

Paint shall not be sprayed on except in the case of cellulose and other special paints where spray painting is the accepted method of application

Before subsequent coats of paint are applied the previous coat shall be properly dry and shall be sanded down where necessary

S.4 COLOUR SCHEME

A colour scheme comprising colours and the blending of colours approved by the Principal Agent shall be used for the paintwork. The tints of the undercoats shall closely match the finishing coat but nevertheless differ sufficiently to indicate the number of undercoats. Colour samples of the finishing coats shall be provided in all cases

S.5 GENERAL

Paintwork shall include the preparation of surfaces, filling, stopping, sanding and priming of nail heads and screws. Where windows, sashes, etc are to be painted, the rebates of the openings to be glazed shall be primed

T. PAPERHANGING

T.1 PREPARATORY WORK

Plaster surfaces to be papered shall be dry, thoroughly cleaned down, filled with a suitable filler as necessary to obtain a smooth surface and painted thereafter with a single coat of emulsion paint

Wood surfaces to be papered shall be knotted, stopped and sanded

T.2 PAPERHANGING

Wallpaper shall be hung in vertical long lengths. Vertical joints shall be close-fitted and plumb and the paper shall be tightly fitted to skirtings, ceilings, door frames, windows, etc. Horizontal joints will not be allowed

U. EXTERNAL WORKS

U.1 GENERAL

U.1.1 Excavations

Excavations shall be deemed to be in "earth"

U.2 LANDSCAPING

U.2.1 Topsoil

Topsoil shall vary between sandy loamy soil and sandy clayey soil with an ideal composition of 15% to 25% clay, 10% silt/sludge and 65% to 75% sand, with a minimum ratio of organic material of 2%. All material shall be free of harmful deposits as well as unwanted seeds

U.2.2 Compost

Compost shall be composed of properly decayed organic material, free from harmful deposits, salts, seeds and other waste material and shall have a pH of more than 4 and less than 7

U.2.3 Mulch

Mulch shall be approved organic material free from small particles of bark residue, fungus, disease, etc

U.2.4 Lime

Lime shall be agricultural lime of an approved manufacture

U.2.5 Fertilizer

Fertilizer shall be of the type specified, mixed thoroughly into the soil as prescribed. No fertilizer shall be added more than two weeks prior to planting

U.2.6 Backfilling

Backfilling in plant and tree holes shall be composed of two parts topsoil to one part compost mixed thoroughly together and compacted by foot in 100mm layers. Fertilizer shall only be added if prescribed

U.2.7 Pebbles

Pebbles shall be smooth with a uniform colour and form and ranging in size from 50mm to 75mm diameter. Removal of pebbles from river beds shall be done selectively to avoid any major disruption to the ecology of the river and environment

U.2.8 Plant material

U.2.8.1 General

All plant material (plants, shrubs, trees, etc) shall be obtained from a registered nursery and shall be free from damaged parts, parasites, fungus, other plant diseases or insects. No container-bound plants will be acceptable

U.2.8.2 Trees

The height of trees described in the bills of quantities shall be measured from the top of the root ball to the top of the tree. Where trees are pruned, such prune wounds shall not be more than 25mm in diameter and be sealed with an approved sealing compound

U.2.8.3 Shrubs and small plants

Shrubs and small plants shall meet the requirements for height and spread as specified. Thin or sparsely branched plants shall not be accepted. Branches shall be well spread with ample young branches and the plant as a whole shall be growing well

U.2.8.4 Groundcover

Groundcover shall be dense and healthy and shall comply with the minimum requirements for leaf density as specified

Formal grass shall be planted as runners in 50mm deep drills at 150mm centres unless otherwise described

U.2.9 **Cultivation and preparation of planting areas etc**

All surface rocks and stones larger than 50mm shall be removed before commencing cultivation and preparation. The entire area shall be ripped and rotavated using approved machinery by breaking up the earth to a depth of 300mm at 600mm centres in both directions, unless otherwise described, and then levelled. Where fertilizer or compost is specified, it shall be worked into the topsoil after ripping and rotavation to a depth of 300mm and finished to final levels

All fertilizer to areas to be grassed shall be strewn on the final layer before final finishing is commenced and worked mechanically into the top 150mm soil

U.2.10 **Planting procedure**

Holes for shrubs and groundcover shall be as follows:

Shrubs – 500 x 500 x 500mm deep

Groundcover – 300 x 300 x 300mm deep (if not planted in drills)

Holes for trees shall be square, of adequate size to accommodate the root system and suitable for the height of the tree

All plant material shall be watered thoroughly before careful removal from the container and planted in the prescribed planting medium with the top of the soil in the container finishing level with the surrounding area. Water dams size 800mm diameter x 150mm deep and 500mm diameter x 150mm deep shall be formed around trees and shrubs respectively and all planting material shall be watered immediately after planting. Trees, shrubs, etc shall be properly staked or stayed, depending on their size, on the prevailing windy side with patent tree ties

U.2.11 **Maintenance**

All planted areas shall be maintained for a period of three months after practical completion as defined in the contract with the exception of hydroseeded areas which shall be maintained for 12 months after an acceptable cover has been obtained

This maintenance shall consist of keeping clear of weeds and litter, loosening soil where necessary every two weeks, replacing damaged, diseased or dead plants, pruning, cutting and mowing as necessary and watering so as to keep the plant material in a healthy growing condition

U.3 ROADWORK

U.3.1 **Filling**

Filling under roads etc shall be of inert material having a maximum plasticity index of 10, free from large stones etc spread, levelled, watered and compacted in layers not exceeding 200mm thick to a density of 98% Mod AASHTO

U.3.2 **Preparation of sub-grade**

The sub-grade shall be prepared by scarifying for a depth of 150mm and compacting to a density of 98% Mod. AASHTO, including trimming to the correct levels and grades

U.3.3 **Base course**

The base course shall consist of crusher run stone compacted to a density of 98% Mod. AASHTO and finished to the correct levels and grades

U.3.4 **Weed killer**

The completed sub-grade shall be treated with an approved total weed killer

U.3.5 **Bituminous premix road surfacing**

Before spreading the premix material, the base course shall be swept clean and free from all dust, dirt and loose particles, lightly wetted and sprayed with a prime coat of cutback bitumen complying with SANS 308 at the rate of 1 litre/m^2

The material shall consist of semi-gap graded crushed stone aggregate having the following grading:

Sieve size (mm)	% By mass passing sieve
13,2	100
4,75	45-60
2,36	42-55
1,18	40-52
0,3	25-45
0,075	5-12

The aggregate shall be mixed with bituminous road tar binder complying with SANS 748 at the rate of 1m3 of stone to 120 litre of emulsion at atmospheric temperature

The binder shall be added to the stone and mixed until the stone is uniformly coated. Thereafter 5% of clean, dry quartzitic sand shall be added and mixed until evenly distributed through the mixture

The premix shall be applied only after the primer has dried out completely and shall be spread immediately after mixing and rolled on the same day

Spreading shall be done evenly over the prepared base course to a loose depth sufficient to ensure the consolidated thickness specified

Rolling shall commence as soon as the binder has set sufficiently, followed after three days by a final rolling

U.3.6 Precast concrete block road surfacing

Paving blocks shall be precast concrete blocks complying with SANS 1058

Blocks shall be laid to true levels and grades on and including a 25mm thick layer of river sand with joints exceeding 2mm and not exceeding 6mm wide

After laying, the paving shall be compacted by means of a vibrating plate compactor, with joints between the blocks filled in, after compaction, by sweeping in fine sand

Infill areas at edges of paving constituting less than 25% of a full block unit and of 25mm minimum dimension shall be filled with Class C prescribed mix unreinforced concrete with top surface trowelled smooth to match blocks. Smaller areas shall be filled with 1:4 cement mortar

U.3.7 Precast concrete kerbs and channels

Precast concrete kerbs and channels shall comply with SANS 927, generally in 1m lengths and finished smooth from the mould on exposed surfaces. Kerbs and channels shall be bedded on and jointed in 1:3 cement mortar and pointed with keyed joints. Bases to kerbs shall be Class B prescribed mix unreinforced concrete

U.3.8 Process control tests

The Contractor shall be responsible for carrying out all necessary process control tests on the density and moisture content of the compacted sub-grade, base course, etc to ensure that the required compaction is being attained

U.4 FENCING ETC

U.4.1 Materials

Materials and workmanship shall comply with the following specifications and requirements :

Wooden poles, droppers, guardrail posts and spacer blocks	SANS 457-2&3
Zinc-coated fencing wire	SANS 675
Prefabricated concrete components for fencing	SANS 1372
Chain-link fencing and its wire accessories	SANS 1373

Fasteners	SANS 1700
Anti-intruder fences	CKS 451
Metal droppers and standards	CKS 451

U.4.2 **Galvanized wire**

All galvanized wire shall be zinc coated wire with Class B zinc coating. Straining wire shall be 4mm diameter galvanized mild steel wire. Tie wire shall be 1,6mm diameter galvanized mild steel wire

U.4.3 **Plastic coated wire**

Plastic coated straining wire shall be 3,15mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,95mm

Plastic coated tie wire shall be 1,8mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 2,5mm

U.4.4 **Galvanized barbed wire**

Galvanized barbed wire shall be 2,5mm diameter mild steel double strand reverse twist zinc coated barbed wire with Class A zinc coating

U.4.5 **Galvanized wire mesh**

Galvanized wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire

U.4.6 **Plastic coated wire mesh**

Plastic coated wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,25mm

U.4.7 **Galvanized welded wire mesh**

Galvanized welded wire mesh shall be fabricated from pre-galvanized wires to rectangular pattern welded together at each intersection using a welding method which forms a zinc oxide protective coating at each intersection

U.4.8 **Razor wire**

Razor wire shall be fabricated from 2,5mm diameter galvanized high tensile steel wire fitted with razor barbs formed of 0,5mm galvanized steel strip clipped on at 37,5mm centres

U.4.9 **Metal droppers and standards**

Droppers shall be of ridged T-section mild steel with a mass of not less than 0,55kg/m. Standards shall be of I- section mild steel with a mass of not less than 3kg/m or of ridged edge Y-section mild steel with a mass of not less than 2,5kg/m, and shall be driven 600mm deep into the ground

Droppers and standards shall have either galvanized, sprayed metal or painted finish as described in the items and in accordance with CKS 451. In addition, those surfaces of standards embedded in the ground shall be coated with bitumen

U.4.10 **Metal posts and stays**

Posts and stays shall comply with CKS 451 and shall be of black galvanized mild steel tubing as specified

Straining posts shall be of 108mm outside diameter x 3mm wall thickness tubing, each with a 300 x 300 x 5mm thick mild steel sole plate and a steel cap welded on

Intermediate posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate and a steel cap welded on
Stays for straining posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate welded on and fixed raking with top end flattened, bent, holed and bolted to straining post with and including a 5mm diameter galvanized mild steel bolt with nut and washer

Posts and stays shall have either galvanized or painted finish as described in the items and in accordance with CKS 451. In addition, sole plates and portions of posts and stays embedded in ground shall be coated with bitumen

U.4.11 **Timber posts, stays and droppers**

Timber posts shall be 125mm diameter, timber stays shall be 100mm diameter and timber droppers shall be 30mm diameter

U.4.12 **Prestressed concrete posts and stays**

Prestressed concrete posts and stays shall be finished smooth from the mould and uniformly stressed by means of high tensile longitudinal prestressing wires with concrete cover to wires of not less than 20mm

Corner and straining posts shall be 100 x 100mm and intermediate posts and stays shall be 75 x 75mm. Stays shall be fixed raking with top end splayed and glued to posts with a suitable epoxy compound

U.4.13 **Bolts, nuts and washers**

Straining eye bolts, hinge bolts, bolts, nuts and washers shall be galvanized

U.4.14 **Precast concrete fencing**

Precast concrete fencing over sloping terrain shall be stepped to suit terrain, including the use of increased lengths of posts as necessary, excavation, etc

U.4.15 **Concrete bases**

Bases in ground for posts, stays, etc shall be of Class B prescribed mix concrete with tops 100mm below surface of ground

Sizes of concrete bases for posts, stays, etc shall be as follows:

Straining and gate posts	–	450 x 450 x 700mm deep
Intermediate posts	–	300 x 300 x 600mm deep
Stays	–	600 x 300 x 500mm deep

U.4.16 **Security overhangs**

Where fencing is described as having a security overhang, the posts and standards shall have angular (single arm) extension arms

Extension arms shall be attached to the posts and standards by welding in the case of steel and by spiking in the case of timber

Concrete extension arms shall be cast integrally with the post or standard

Barbed wire to security overhangs shall be tightly strained and wired at each intersection with extension arms and shall have barbed wire braces at 450mm centres between standards, posts, etc wired onto the barbed wire and the top straining wire

U.4.17 **Gates**

Gates shall be formed of 40mm outside diameter x 2,5mm wall thickness mild steel tubular framework with welded joints, strongly braced as necessary and filled in with wire mesh as described above, properly strained and securely bound to framework with tie wire

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

GENERAL ELECTRICAL SPECIFICATION

GENERAL ELECTRICAL SPECIFICATION

(ALL IN CONTRACTS)

1. CONDUIT AND CONDUIT ACCESSORIES

1.1 Conduit

Conduit shall be of steel galvanised internally and externally, either solid drawn, or welded and not less than 20 mm diameter, with all rough edges removed. All tube ends removed. All tube ends are to be reamed. With screwed conduit one threaded end is to be fitted with a coupling and the other end is to be protected against damage.

UPVC conduit may only be used if permitted by the Head : Works and only in those areas which he may specify. In this case this conduit shall be according to SABS 950.

Conduit accessories, which are secured to the conduit by means of lugs, screws or setscrews, are not acceptable.

General requirements of conduiting to SABS IEC 60614 (1).

Metal conduits shall be fully in accordance with SABS 1065 PART I.

1.2 Conduit Accessories

All conduit accessories shall be galvanised both internally and externally and comply with SABS 1065 – PART II.

All screwed conduit fittings shall be of malleable cast iron.

Where fittings are fitted with covers, the covers shall be of galvanised pressed steel secured with brass screws.

1.3 Flexible Conduit

Flexible conduit shall be of the plastic covered metal type complete with brass connectors to the approval of the Head : Works.

2. INSTALLATION OF CONDUIT

2.1 General

Except where cables are specified for certain circuits, the installation(s) shall be tubed throughout in steel conduit. Split conduit is not permitted. All conduits shall, wherever possible, or unless otherwise specified or agreed, be concealed in the structural work.

Except where agreed or otherwise specified or indicated on the drawings, all conduit to points shall run via the ceiling and floor slabs or roof space. In damp situations and where exposed to the weather, the conduits shall be so installed as to avoid, as far as possible, the condensation of moisture within them. All running joints are to be painted with an approved metal primer.

Mechanical and Electrical continuity must be maintained throughout the installation. Each length of conduit and every conduit fitting must be inspected for defects and all sharp edges or burrs must be removed before it is installed. All joints are to be tightly fitted together.

Running joints with long threads, where used, are to be fitted with a lock nut and the running thread shall not be longer in length than a coupling and lock unit.

In conduits smaller than 32 mm elbows and normal bends are not to be used but conduits are to be set to the required angles.

Flexible connections between conduit and appliance or other equipment shall be by means of flexible tubing (see Par 1.3).

No wiring shall be drawn into conduits until the conduits have been installed.

Where more than one socket outlet is connected on a circuit, the conduit shall be looped from the one outlet box to the following outlet box.

All switch-boxes, socket outlet boxes and any other purpose made metal box including distribution board trays shall be suitable treated against corrosion before installation with "Rustodian" or other approved metal primer.

All conduits shall be securely fixed into chases, and all flush switch and socket outlet boxes must be firmly embedded in cement mortar.

The Contractor shall make himself familiar with the positions of all fittings, such as blackboards, pinning boards, cupboards, shelving, worktops, etc, before commencing the conduit installation. The position of switches and socket outlets as indicated on the drawings are approximate only. The Contractor must verify that the final position of these will not be covered by the installation of the fittings referred to above, or come midway between the junction of any dados and upper wall finishes.

No extras will be entertained for moving switches or socket outlets as a result of the Contractor's failure to verify the final positions of the fittings or type of wall finish.

2.2 **In Roof Spaces**

The conduit in roof spaces shall be installed parallel or at right angles to the roof truss members and shall be secured at centers not exceeding 1,2 m by means of galvanised saddles nailed to the timbers with galvanised clout nails. Crampets will not be allowed.

Crossing of conduits is to be avoided wherever possible. Where unavoidable, one conduit must be neatly set over the other. Where a number of conduits have to run back to the distribution board or switchboard, they shall run parallel to the distribution board or switchboard, and at saddle distance to each other wherever possible.

Conduit runs from distribution boards shall terminate in fabricated sheet steel draw boxes installed in the roof above the distribution boards. Each draw box shall be fabricated from 1,6 mm galvanised sheet steel with welded corners and

suitably treated against corrosion with "Rustodian" or other approved primer and finished in aluminium paint.
Each draw box is to be fitted with slip-on lid with a 13 mm skirt. The box shall be 75 mm deep, shall be rectangular in shape and the size of conduits entering or leaving the box. Conduits shall be fixed to the box by means of couplings and brass male bushes or lock nuts and brass bush-nuts.

Conduit droppers shall be neatly cut into timber wall plates and set to face the right direction. All sets must be uniform. Conduits may be set at angles only where droppers or ceiling points are within 230 mm of roof members.

No conduits are to be run over the top of gangplanks or trapdoors.

Draw-in boxes with metal covers shall be provided where required and shall be installed near the gangplanks, if any. All inspection conduit fittings in open roof spaces shall face upwards to facilitate wiring and to permit easy inspection. Three-way conduit boxes shall be used for tee-off purposed in open roof spaces. Inspection tees are not to be used except where otherwise agreed or specified.

All conduits extended into a roof space with a roof clearance of more than 900 mm shall be set onto the beam and extended into the roof for a distance where there is sufficient clearance. Under flat roofs or where there is less than 900 mm clearance, the conduit shall be installed as specified for tubing in concrete slabs, right angle bends should be kept to a minimum and the shortest route taken.

Where false ceilings occur they shall be tubed as called for in the detailed specification. Conduits in restricted spaces and run as for concrete slabs must however, be installed in a neat and orderly manner.

Conduits to ceiling points for all types of fittings must be firmly supported and shall terminate in a back entry conduit box. The conduit box shall be taken through to the face of the ceiling and finish flush. Where the ceiling brandering interferes with the installation of the ceiling point specified, the Contractor must trim the brandering to allow the conduit box to be taken through to the face of the ceiling as specified. Luminaires must be bonded to the conduit box by means of metal threaded screws.

2.3 In Concrete Slabs

In order not to delay building operations, the Contractor must ensure that all conduits and conduit fittings, which are to be cast in concrete, are laid in good time. The Contractor shall have a competent Electrical Artisan standing by during casting of concrete, etc, to ensure that the conduit boxes are not damaged during casting of concrete.

Draw boxes, expansion joints boxes and round conduit boxes are to be provided where necessary.

Deep type conduit boxes shall be used for side entering conduits and normal shallow boxes may be used for back entry conduits. No elbows, bends or sharp sets will be allowed in concrete slabs except in cases of conduits of 40 mm diameter or when larger sweeping bends will be permitted.

Common drawn and/or inspection boxes shall be used where there is more than one circuit involved. They shall be installed in lavatories, storerooms, or other inconspicuous places. Covers shall be of hardboard neatly finished to match the finished ceiling or wall surface, and shall be fitted parallel to the wall or ceiling.
All boxes, etc. are to be securely fixed to the shuttering to prevent displacement when concrete is cast. All conduits must be laid off the deck, supported and secured at regular intervals and installed as close as possible to the neutral axis of concrete beams and slabs.

Expansion joints shall be shown on layout drawings and shall consist of a metal box in which one conduit is fixed and the other capable of movement with the building's expansion and contraction. Earth continuity of these joints shall be maintained by means of stranded copper conductors bonded to the conduits in the box as shown on the drawing.

Earth conductors and clamps buried in concrete are not permitted.

Conduits must be spaced sufficiently apart to allow for proper concreting. All joints shall be painted with an approved metal primer after completion of the tubing installation, prior to the concreting. All exposed parts of the conduit installation shall be suitably, protected against corrosion at the discretion of the Head : Works.

Before any concrete slab is cast, all conduit droppers to switchboards shall be neatly spaced and rigidly fixed.

2.4 Surface Work

All conduit must be plumbed and leveled and only straight lengths shall be used.

In cases where doorframes are out of plumb, or fittings, beams etc, are out of level, the conduit shall be run parallel with the doorframes, fittings, beams etc.

No threads shall be visible when the conduit installation is complete, except on running couplings.

Running couplings shall only be used where unavoidable and shall be fitted with a sliced coupling as a lock nut.

No inspection or normal bends are to be used on surface work, except with the approval of the Works Inspector and where conduits of 32 mm diameter or larger are used. Conduits shall be set uniformly and inspection couplings shall be used where necessary.

Fittings, tees, boxes, couplings, etc, are to be cut into the surface to allow the conduit to fit flush against the surface or alternatively spacer bar saddles may be used. Conduit is to be bedded into any irregularities to avoid gaps between the surface and the conduit.

Double sets, where used, shall be parallel with no twists and shall be as short as possible. All conduits, which terminate at metal trays, boxes, industrial switches and plugs shall do so by means of couplings and male bushes. No couplings will be permitted in droppers of lengths less than 3.6 m.

Where crossings of conduits is unavoidable, purpose made metal boxes shall be used. The length of the box is to be 8 times the diameter of the largest conduit, the width one and half times the sum of the diameter of al the conduits, and the depth one and half times the diameter of the largest conduit with a minimum depth of 50 mm. The box shall be fitted with a neatly fitting cover and the finish shall be in keeping with the general layout.
Where a number of conduits are to be installed in parallel they shall be evenly spaced and grouped under one purpose made saddle. Conduit spacing shall not exceed 10 mm. The purpose made saddle shall be made of 25 x 2 mm galvanised steel strip or other approved material, formed to suit the curvature of the various conduits and shall be drilled and fixed by means of screws between. Saddles shall be spaced at intervals not exceeding 1.8 m, except for conduit droppers, which shall be saddled centrally between ceiling and accessory box. All saddles are to be secured to the wall by means of black japan or brass rounded head screws. Distribution boards, draw boxes, industrial switches and plugs, etc, shall be neatly recessed into the surface of plastered walls to avoid double sets or alternatively spacer bar saddles may be used. On face brick walls the conduit shall be tightly set into the switch or plug.

In situations where there are not ceilings, the conduits are to be run along the wall plates and tie beams.

No wiring is to be carried out until the tubing has been inspected and approved.

Where spacer bar saddles are used, these shall be installed at centers of 1 m for horizontal and 1.5 m for vertical runs.

All conduits shall be painted with an approved enamel paint to match the background colour.

2.5 Future Extensions

In roof spaces with a minimum clearance of 900 mm, switch and plug drips for future use are to be set 300 mm in the correct direction and shall be threaded and fitted with plugged couplings. Where the roof over a slab is to be removed for future expansions, conduits for future use are to terminate 40 mm above tie beams and shall be threaded and fitted with plugged couplings.

Where future extensions are to be below slabs, all switch, socket outlet and other conduit droppers are to terminate 130 mm below slabs or beams with conduit ends threaded and fitted with plugged couplings.

Where provision is made for future extensions to a concrete slab, all conduits required for future use are to project 130 mm from the slab. Conduit projections are to be painted with an approved anti-corrosive paint and must be fitted with plugged couplings.

All switch, plug and other outlet boxes required for future use shall be fitted with approved blank cover plates.

Unused lighting outlet boxes are to be fitted with round hardboard or plastic covers with brass cover screws, which shall fit flat on the finished ceiling.

2.6 **Fixing of Conduits**

Conduits shall be fixed to switch and socket outlet boxes by means of couplings and brass male bushes or lock nuts and brass bush nuts. Couplings and male bushes to be used on all surface work.

2.7 **Chases and Building Work**

Except where otherwise specified conduits, switch boxes, plug boxes and distribution boards are to be built into the brick walls by the Contractor. It will, however, remain the responsibility of the Contractor to ensure that the above-mentioned boxes and distribution boards are correctly built in and are firmly bedded and cemented into the walls, plumb and square.

The Contractor shall, unless otherwise specified, do all necessary chasing and cutting of bricks. All electrical materials (e.g. conduits up to 40 mm for UG cables, conduits, conduit boxes, distribution boards etc) must be supplied by the Contractor who must arrange to have these on site, and positioned when required for the building work. A competent Electrical Artisan must be in attendance and ensure that the conduits etc are correctly installed and positioned.

The Contractor is to ensure that tubing installed in chases is securely nailed and covered by a layer of 5:1 mixture of coarse sand and cement, finished flush with brickwork and that switch and plug boxes finish flush with the finished wall surface.

The Contractor is to ensue that below distribution boards connected by means of under-ground cables, a 230 mm wide by 115 mm deep cavity in the wall from the cable pipe to the distribution board is to be provided by the Contractor, or alternatively, cable sleeves as specified.

3. **PLUGGING OF WALLS**

Only approved plastic plugs shall be used to secure conduit or equipment up to 5kg mass. The use of round-headed screws only will be permitted.

Heavier equipment shall be secured by means of approved expansion bolts.

Wood plugs and any plugs in the joints in brick walls are not permitted.

4. **FIXING TO CONCRETE CEILINGS**

Ceilings mounted equipment other than luminaires shall be secured to concrete ceilings by means of expansion bolts, shot bolts or "Robot" tools bolts or as expressly specified for the service.

5. **WIRING**

5.1 **PVC Insulated Single Core Medium Voltage Conductor**

The conductor is to be of high conductivity copper wire insulated with Polyvinyl Chloride. The cable shall be finished in the required colours and shall be in accordance with SABS 1507 and 1574.

Circuit wiring shall be of the Loop-in system and no wiring joints in the conduit or conduit fittings will be permitted. Not more than two conductors of a kind will be allowed at any outlet point. the end strands of cables, whether single or looped which have to be connected to terminals of switched, plugs, lamp-holders, fittings and distribution boards, etc, are to be tightly twisted together. Cutting away of wire strands of any cable will not be allowed. Only one circuit in any one conduit will be permitted unless otherwise specified.

Conductor sizes shall be as follows except where otherwise specified:

Lighting circuits	1,5 mm^2	
Bells circuits	1,5 mm^2	
Clock circuits	1,5 mm^2	
Incinerator circuits	2,5 mm^2	
Ironing circuits	2,5 mm^2	with 2,5 mm^2 insulated earth wire
Plug circuits	4,0 mm^2	with 2,5 mm^2 insulated earth wire
Geyser circuits	4,0 mm^2	with 2,5 mm^2 insulated earth wire
Heater circuits	4,0 mm^2	with 2,5 mm^2 insulated earth wire
Stove	10 mm^2	with 6,0 mm^2 insulated earth wire
Motor circuits		
Up to 4kW single phase	4,0 mm^2	with 2,5 mm^2 insulated earth wire
Up to 11kW three phase	4,0 mm^2	with 2,5 mm^2 insulated earth wire

To avoid deformation of PVC insulated cables at temperatures in excess of 57° C, they shall not be brought directly on to the terminals of appliances such as electric heaters, or any other electrical appliances or apparatus (including luminaires) which have a temperature in excess of 57° C. They shall terminate in a suitable terminal box as near to the appliance or fittings as possible and connect up from thereon, with heat resistant conductor.

6. MOUNTING AND POSITIONING OF LUMINAIRES

Luminaires and installation to comply with SABS 1464 Parts 1 to 22 and IEC 598-1 and IEC 60598 as applicable.

The contractor shall, in the case of board and acoustic tile ceilings (i.e. as opposed to concrete slabs), ensure that the luminaires are symmetrically positioned with regard to the ceiling pattern.

The layout of the luminaires as indicated on the drawings shall be adhered to as far as possible. The exact positions must be confirmed on site with the Head : Works.

Except where otherwise specified, pendant luminaires are to be mounted with the bottom of the fittings 2,5 m above finished floor level, mounted on either metal discs or wood blocks.

Under no circumstances shall cover strips be cut to accommodate wood blocks. Wood blocks must be neatly slotted to fit over cover strips and are to be secured by a minimum of two screws, which shall penetrate at least 25 mm into solid wood. Ceiling cover strips shall be neatly cut to accommodate fluorescent luminaires.

Where ceilings are raked, all incandescent luminaires are to be mounted on shaped leveling wood blocks securely fixed to the ceiling. Batten holders shall be secured to woodblocks by suitable brass screws. Fluorescent luminaires are to be mounted direct on raked ceiling without leveling blocks.

Fluorescent luminaires to be mounted on concrete ceilings shall be screwed to the outlet boxes and additionally supported by means of 50 x 6 mm expansion bolts. The bolts are to be ¾ of the length of luminaires apart.

Where a number of luminaires are installed end to end, outlet points must be provided after every second luminaire unless otherwise indicated on the drawing.

The luminaires are to be joined together by means of 20 mm conduit nipples, lock nuts and male brass bushes, and the wiring led through the channels of the luminaires. The Contractor shall ensure that all such rows are correctly lined up and that the rows are parallel with the relevant building line.

The luminaires are to be jointed together by means of 20 mm conduit nipples, lock nuts and male brass bushes, and the wiring led through the channels of the luminaires. The Contractor shall ensure that all such rows are correctly lined up and that the rows are parallel with the relevant building line.

Incandescent luminaires are to be screwed directly to outlet boxes in concrete slabs and in board ceilings. In board ceilings the conduit box and the conduit shall be secured to the timberwork of the ceiling in such a manner that it shall support any incandescent luminaire, which is designed to be fixed to a normal conduit box.

Fluorescent luminaires shall be secured to board ceilings by means of the conduit box and 6 mm bolts passing through the boards and brandering.

7. BATTEN HOLDERS

B.C. batten holders shall be of brass or moulded plastic reinforced type complete with shade ring. The batten holders shall comply with SABS IEC 60238 and SABS IEC 61184. All lamp holders are to have brass terminals with screw type connection.

8. LAMP HOLDERS

Edison screw lamp holders	:	SABS IEC 60238
Bayonet lamp holders	:	SABS IEC 61184
Lamp holders for tubular fluorescent lamps	:	SABS IEC 60400

B.C. screwed lamp holders shall be of brass 20 mm E.T. complete with shade ring and shall comply with SABS IEC 60238 and SABS IEC 61184 with screw type connection terminals.

9. SWITCHES AND SOCKET OUTLETS

Switches SABS IEC 60669 as applicable and socket outlets SABS IEC 60884 as applicable shall be of the most modern manufacture and bear the SABS mark.

Flush switch and plug cover plates shall, unless otherwise specified, be of anodized aluminium of thickness not less than 0,9 mm, satin or other approved finish as directed and otherwise to be fully in accordance with SABS IEC 1084 for cover plates and SABS 1085 for wall boxes.

10. POSITIONS OF SWITCHES AND SOCKET OUTLETS

Except where otherwise specified, lighting switches and socket outlets are to be installed 1,4 m above finished floor level.

All mounting heights specified are to be measured from finished floor level to the bottom of the outlet box.
Where the lower portion of the wall consists of face brickwork and the upper portion of plastered finish, switches and socket outlets are to be mounted in the plastered surface, provided that the lower edge of the plasterwork does not exceed a height of 1,5 m above finished floor level in which case the switches or socket outlets are to be installed in the face brick dado.

Where socket outlet and switch boxes have been installed with fixing lugs below finished wall surface, only approved distance pieces required to compensate for the recess shall be used. The lengths of distance pieces are not to exceed 15 mm.

Unless otherwise approved, light switches adjacent to doors are to be installed at the lock side of the door. Where the lock position is not indicated on the drawings, its position shall be ascertained before the switch box is installed. Switches are to be installed 150 mm from the reveal, or centrally if there is a fitting near the door.

All switch and socket outlet boxes shall be installed plumb, and built into the wall with a 1:1 mixture of cement and sand.

Industrial type switches and socket outlets shall be neatly recessed into the surface of plastered walls to avoid sets or alternatively spacer bar saddles may be used.

Deep type boxes may be used where switches or socket outlets are back to back, but where one side only is to be utilized at the time and the other is for future use, the side for future use shall be suitably covered with a metal cover plate.

11. LOW TENSION SWITCHBOARDS

Low Voltage switch gear and control gear to comply with SABS 1473 and SABS IEC 60947 and SABS 60349.

Where switchboards are to be installed in switch rooms or switch cupboards, the Contractor must ensure that the boards are manufactured to suit the dimensions of the rooms or cupboards.

Low tension switchboards shall be specified in detail for each service, but shall generally conform to the following:

They are to be of strong and rigid construction, with suitable angle, channel or folded steel framework. They are to be flush fronted and totally enclosed with sheet steel panels suitably formed at the edges and reinforced to prevent distortion. Unless otherwise directed, all front panels must be at least 2 mm thick and all other panels at least 1.6 mm thick. Panels are to be secured to the

framework with studs and chromium plated dome nuts (self-tapping and similar screws are not permitted).

Switches, etc, are to be mounted on metal frames within the boards to give flush front panels. Equipment of normally surface mounted types such as energy meters, time switches and contractors, are to be mounted on inner metal trays behind hinged front panels. In the case of supply authority meters the hinged front panels must have transparent inserts.

All metal work of the boards must be thoroughly degreased, primed with PA 10 self etching primer and finished with one coat of undercoat and two coats of electrical orange high gloss enamel, unless otherwise specified.
All accessible current carrying parts, bus-bars, connecting strips, collector bars, etc, are to be adequately insulated in phase colours and suitably braced to withstand projected fault currents.

Connecting strips and collector bars must be of sufficient cross sectional area to carry full rated current of the switches served, irrespective of the fuse of trip rating.

The complete distribution board including bus-bars must be suitably constructed to withstand fault currents specified.

Connections to bus-bars are to be made by means of lugs suitably bolted and locked with high tensile bolts and connections to lugs must be effected by means of a crimping tools.

Incoming and outgoing bus-bar studs, where required, must be suitably insulated where they pass through panels of the board, and firmly supported within the board.

Where applicable, incoming and outgoing collector bars for cables in parallel must so arrange that the multiple cable ends can be connected to the bars with reasonably short tails which do not have to cross.
Cable supports must be placed at suitable heights having regard to the bending radius of the cables concerned and convenience in making off.

Wall-mounting and floor-standing back to wall type boards must be provided with full easy access to all equipment and wiring without any necessity of disconnecting or removing of any of the equipment mounted in the board.

Clear visible indication of all switch positions must be provided and the switches must be clearly labeled as directed by the Head : Works.

The details of construction proposed, and the Head : Works must approve all equipment of switchboards: Works before manufacture is commenced.

12. DISTRIBUTION BOARDS

12.1 Approval

The Head : Works must approve the details of construction proposed and all equipment within distribution boards: Works before manufacture is commenced.

12.2 Flush Mounting Distribution Boards

These shall be generally manufactured in accordance with SABS 1765. The board shall consist of two panels fitted side by side with common bonding tray and attached to a common architrave. One panel shall accommodate all single phase MCB's and the second panel shall accommodate the main isolator, main bus-bars and the triple pole MCB's. Chassis shall be of rigid channel section rust proofed steel with clip-on trays for the single pole MCB's. The main isolator is to be mounted at the bottom of the second panel with the triple pole circuit breakers above.

12.3 **Surface Mounting Distribution Boards**

These shall be generally manufactured in accordance with SABS 1765, with two panels as for flush boards.

2.4 **Single Phase Distribution Boards**

Single Phased boards shall be generally constructed as three phase boards except they shall have a single panel. Single phase boards shall be mounted with the bottom of the architrave 1,5 m above finished floor level unless specifically directed otherwise.

12.5 **Distribution Board – In Roof Spaces**

Where distribution boards are installed below a roof space, a minimum of 2 x 20 mm and 1 x 25 mm spare conduits are to be run from the distribution board into the roof space.

13. METER BOXES

The meter box shall be mounted with the top 1,7 m above finished ground level. Surface mounted meter boxes shall be secured by at least 4 x 10 mm expansion bolts.

Service cables entering the meter box shall be protected by means of a suitably sized galvanised pipe extended 450 mm below the ground surface and securely saddled to the wall and bonded to the meter box.

14. CONNECTIONS TO OUTLETS

14.1 General

Where connectors are used to connect to the wiring of luminaires and other appliances, the connectors shall comply with SABS Specification 1239.

14.2 Connection to Stoves

14.2.1 General

The connection to an electric stove, unless otherwise specified shall consist of 2 x 10 mm^2 conductors and a 6 mm^2 insulated earth wire in 25 mm conduit. The stove shall be controlled by a 60 Amp micro gap switch of approved make and the connection shall be by means of a 45 Amp 3 pin stove plug of the "Cape Town" type. Cable ends, which are to be connected to the stove, shall be equipment with

suitable soldered or crimped lugs. The connection between the stove plug and stove shall be by means of flexible conduit.

Except for high school domestic science unit kitchens (see Clause 14.2.2), the conduit shall be chased into the wall and fitted with a switchbox for housing the micro gap switch and a 25 mm circular conduit box over which the stove plug will be mounted. The stove plug shall be fitted with an adaptor plate and shall be screwed directly to the conduit box by means of round head metal screws. The plug outlet shall face downward.

The stove plug and switch shall be mounted 430 mm and 1,4 m respectively above finished floor level unless otherwise specified or indicated on the drawings.

14.2.2 **Stove Connections in High School Domestic Science Unit Kitchens**

Connections to stoves in High School Domestic Science Unit Kitchens, where the stoves are situated in front of a fitting, shall be generally as specified in Clause 14.2.1 except that the 25 mm diameter conduit shall be run in the floor slab, from the distribution board to a position to the right of the stove. A pedestal, which is complete with a 45 Amp 3 pin "Cape Town" type cooker plug, mounted on the back, shall be fitted over the conduit and securely bolted to the floor by means of expansion bolts. The plug circuit, which passes through the pedestal, is to be on a separate circuit.

14.3 **Connections to Hot-water Cylinders**

The connections to hot-water cylinders not exceeding 3kW loading shall consist of 2 x 4 mm^2 PVC conductors and 1 x 2,5 mm^2 earth wire in a 20 mm diameter conduit from the distribution board. The conduits shall be chased in the wall and shall terminate at the side of the cylinder in a box over which is to be mounted a double pole isolator with pilot light.

The final connection between the isolator and cylinder shall be by means of silicone heat resistant conductors in 20 mm diameter flexible conduit.

Connections to roof mounted hot-water cylinders shall generally be as specified above with an isolator with pilot light mounted adjacent.

14.4 **Connections to Power Points**

Connections to electric motors and fixed apparatus to vibration shall, unless otherwise specified or indicated on the drawings, have final connections consisting of conduit and flexible tubing or reinforced hose in accordance with Clause 1.3 of this specification and PVC cables and earth wire of the required size.

An isolator shall protect all fixed apparatus and where necessary a starter fitted with a no-volt coil and overload protection adjacent to such apparatus.

Power points for connection of fixed apparatus to be installed by others, shall terminate in an approved type wall mounted switch unless otherwise specified.

The minimum conductor size for all power points shall be 4 mm^2 unless otherwise specified.

14.5 **Underground Service Connection**

This clause refers to underground service connections not provided by the Supply Authority.

The service cable and earth wire to be connected at the supply point in accordance with Clause 15.8 of this specification, and unless otherwise specified, shall be aid 600 mm below ground level throughout and otherwise fully in accordance with Clause 15 and all applicable sub-clauses thereof. Cable entries to meter boxes shall be in accordance with Clause 13 and other entries shall be by pipe or duct as directed.

14.6 Connections to Outbuildings

Connections to outbuildings shall be made by means of underground cable only, laid in accordance with Clause 15 and all applicable sub-clauses.

Where the cable is run from the roof space of the main building, it shall be enclosed in suitably sized galvanised pipe built into the wall or run surface as directed. Surface run pipes shall be securely saddled at 1,8 m centers. Where the cable connects to the conduit in the roof space, a suitable joint box shall be provided or alternatively the cable may be taken through the roof space, a suitable joint box shall be provided or alternatively the cable may be taken through the roof space with fixings at regular intervals, and down to the main board. At the outbuildings, the cable shall be enclosed in a suitably sized galvanised sleeve pipe built into the wall or run surface and terminated in the distribution board tray.

14.7 Connection and Mounting of Cable Fed Street/Site Lighting

Street/site lights shall in all cases, except where otherwise specified, be fed by underground cable. Unless otherwise directed, a suitable terminal board shall be provided in the base of the lighting pole for the connection of the incoming and outgoing cables, the feeds from the terminal board to the fitting shall be as specified.

"Surfix" cable and compression glands shall be installed between terminal board and cross arm/bracket mounted luminaires. The terminal board shall also accommodate a miniature circuit-breaker in the phase connection to the fitting. Poles intended for mounting directly in ground are to be provided with a 300 x 300 mm base plate.

15. UNDERGROUND CABLES

1000 volt PVC SWA and 110 Volt PILCA cable and accessories shall be in accordance with the relevant SABS specifications to SABS 1507.

The storage, transportation, handling and laying of underground cables shall be according to the manufacturer's requirements and the Contractor shall have adequate and suitable equipment and labour to ensure that no damage is done to cables during such operation. All cable pipes and ducts entering buildings are to be sealed against the ingress of vermin, water, etc.

15.1 Trenching

Cables, unless otherwise specifically directed, shall be laid at a depth of 600 mm below ground level. Trenches shall not be less than 300 mm wide for one to three cables, and the width shall be increased where more than three cables are to be laid together so that the cables may be placed at least 75 mm throughout the run.

The Contractor shall take all necessary precautions to prevent trenching work being in any way a hazard to the public and to safeguard all structures, roads, sewer works, or other property from risk of subsidence and damage.

15.2 **Cable Joints**

Joints in underground cable runs will not be permitted unless unavoidable and at the discretion of the Head : Works. Where cable joints are unavoidable, the cable jointer is to work efficiently and cleanly and so that each end of the cables to be joined may have a minimum of 0,9 m of slack disposed in a loop without stress. Back-filling under joints must be firmly tamped to prevent any subsequent settling.

15.3 **Bedding**

In trenches made in intermediate, hard rock, or boulder material, the cables shall be laid on a 75 mm thick bed of earth and be covered with a 150 mm layer of earth before the trench is filled in. The Contractor to supply all earth required for trench filling.

15.4 **Laying**

Cables shall be removed from the cable drum in such a way that no twisting, tension or mechanical damage is caused, and must be adequately supported at short intervals during the whole operation. Particular care must be exercised where it is necessary to draw cables through pipes and ducts, to avoid abrasion, elongation or distortion of any kind. The ends of such pipes and ducts shall be sealed to approval after the drawing in of the cables.

15.5 **Back Filling**

Back filling after bedding (see Clause 15.3) is to be carried out with a proper grading of the material to ensure settling without voids, and the material is to be tamped down after the addition of every 150 mm. The surface is to be made good a required.

Back filling of cable trenches must not be commenced until after the cable trenches and laid cable(s) have been inspected by the Head : Works. Where a Contractor fails to observe this requirement he may, at the discretion of the Head : Works, be required to re-open such cable trenches for inspection at his own expense.

15.6 **Protection of Cables**

Where so directed by the Head : Works, concrete or other warning covers shall be placed over cables above the top bedding layer. Cable pipes when directed are to be installed at road and other crossings.

15.7 **Marking of Cables**

Cable marking tape is to be supplied by the Contractor and is to be laid 150 mm below ground over a cable run and as may be directed by the Head : Works to give early indication of underground cable runs.

15.8 **Joints and Termination of Cables**

Joints in underground cables and terminations shall be made by means of "Scotch Cast" or other approved epoxy-resin pressure type jointing kits. Low tension PVC cables are to be made off with sealing glands and materials designed for this purpose, which must be of approved make.

15.9 **Sealing of Paper Insulated Cable Ends**

Where cables are cut and not immediately made off, the ends must be sealed without delay. If cables are cut and the ends not immediately made off or sealed, the cable may be rejected and the Contractor will be required to replace it at his own expense.

15.10 **Earth Wires**

Except where specifically directed otherwise, earth continuity conductors are to be run with all underground cables constituting part of a low tension distribution system. Such earth continuity conductors shall be bare copper wire of a cross sectional area in accordance with the Code of Practice 0142 but shall not be less than 4 mm^2 nor more than 70 mm^2. The earth continuity conductor is to be bonded to the cable armouring, and to the lead sheath if any, at each termination, as well as to the local earth bard. The earth wire must be secured to the cable at 1,8 m centers.

15.11 **Opening Up of Existing Cables**

Where it is necessary to expose existing buried cables for any purpose, or to excavate in the vicinity of existing buried cables, pipes, etc, every care is to be exercised and only labourers experienced in such work, and duly warned by the Contractor, shall be employed thereon.

15.12 **Definitions for Classifying of Excavation**

(a) Soft Excavation – shall be excavation in material that can be efficiently removed by a back-acting excavator of flywheel power approximately 0,10kW per millimeter of tinned-bucket width, without the assistance of pneumatic tools such as paving breakers, or that can be efficiently loaded without prior ripping or stockpiling by a rubber tyred front-end loader approximately 15T mass and a flywheel power of approximately 100kW.

(b) Intermediate Excavation – shall be excavation in material that requires a back-acting excavator of flywheel power exceeding 0,10kW per millimeter of tinned-bucket width and the assistance of pneumatic tools prior to removal by equipment equivalent to that specified in (a) above.

(c) Hard Rock Excavation – shall be excavation in material that cannot be efficiently removed without blasting or without wedging and splitting prior to removal.

(d) Class A Boulder Excavation – shall be excavation in materials containing more than 40% by volume of boulders of sizes between 0,03 cubic meter and 20 cubic meter in a matrix of softer material or smaller boulders.

Note: (1) Excavation of solid boulders or lumps of size exceeding 20 cubic meter will be classified as hard rock excavation.

(2) Excavation of fissured or fractured rock will not be classed as boulder excavation but as hard rock intermediate excavation according to the nature of the material.

(e) Class B Boulder Excavation – shall be excavation of boulders only in a material containing 40% or less by volume of boulders of size between 0,03 cubic meter and 20 cubic meter in a matrix of softer material or smaller boulders.

Note: Those boulders that required individual drilling and blasting in order to be loaded by a back-acting excavator as specified in (a) above, or by a track type front-end loader, will each be separately classed as Class B Boulder Excavation.

16. EARTHING

16.1 Main Earthing

The type of main earthing shall be as required by the Supply Authority, if other than the Head : Works and in any case as directed by the Head : Works who may require additional earthing to meet test standards.

Where required, an earth mat is to be provided, the minimum size, unless otherwise specified, being constructed from copper straps 950 x 25 x 3 mm at 230 mm centers and braced at all intersections. Alternatively or additionally earth rods or trench earths may be required, as the Head : Works may direct, and installed according to his instructions.

All earth electrodes and connections thereto must be approved "in-situ" by the Head : Works before back-filling.

The electrical installation shall not be earthed by means of the lightning arrester earth electrode, if such is included in the installation, but may be bonded thereto.

16.2 Earthing in Installations

The installation shall be effectively earthed in accordance with the relevant sections of the Code of Practice 0142 and the requirements of the Supply Authority.

All hot and cold water and waste pipes are to be effectively bonded by means of 12 x 1,5 mm solid copper tape (perforated tape or wire will not be permitted), clamped by means of brass bolts and nuts. Bonding tapes exceeding 75 mm in length must be fixed to the wall by means of No. 6 x 20 mm brass screws and plastic plugs not exceeding 150 mm centers. Main earth copper tapes where installed less than 2,5 m from ground level, must be run in 20 mm diameter conduit securely saddled to the wall.

Gutters and down pipes are to be bonded by means of 6 mm round headed brass bolts, with nuts and washers. Self-tapping screws are not permitted.

Connections from the earth bar or terminal on the main board must be made to a visible cold water main, the incoming service conductor, if any, and the earth mat or plate (where such is required) by means of either 12 x 1,5 mm solid copper tape or bare 25 mm² copper wire, or such larger conductor as the Head : Works may direct. From each distribution board separate earth conductors are to be taken to the main earth bar or terminal on the main board. Each conductor shall consist to stranded copper conductors drawn into the conduit together with the distribution board feeders. The size of the earth conductors to be in accordance with the requirements of the Code of Practice 0142 or as specified.

Earthing clips shall be made of not less than 0,9 mm thick copper strips not less than 12 mm wide. They are to be complete with 25 x 7,7 mm brass bolts, washers and nuts and must be constructed so that the clips will fit firmly to the conduit without any additional packing.

Adjustable earth clips are not permitted.

17. EXISTING BUILDINGS

17.1 Occupied Buildings

Where work is to be carried out in occupied buildings the Contractor must arrange to carry out the installation with as little interruption to services and discomfort to the occupants as possible.

17.2 Temporary Connections

Temporary connections shall be provided where necessary for continuity of services, and as directed by the Head : Works. The contractor must ensure that such connections are both electrically safe and free from physical hazard.

17.3 Old Materials

Unless otherwise specified all existing materials removed by the Contractor shall remain the property of the Head : Works and are to be handed to the Head : Works.

17.4 Making Good

Any damage which may be done to the plaster work, floors, ceilings, wood and paint work, furniture and other equipment in the building, etc, during the progress of the electrical installation shall be repaired and made good by the Contractor to the satisfaction of the Head : Works.

18. COMPLETION

18.1 Balancing of Load

The Contractor is required to balance the load as equally as possible over multi-phase supplies.

18.2 Tests

The installation shall be tested by the Contractor as the service progresses or as required by the Head : Works and upon completion, for earth continuity and insulation. The final test before the taking over of the installation shall be made in the presence of the Head : Works.

The mandatory "Certificate of Compliance" shall be issued by the Contractor to the Supply Authority, with a copy to the Head : Works prior to first delivery being taken.

18.3 **Labelling**

All circuits and apparatus on switchboards shall be suitably correctly labeled by means of engraved plastic labels (white lettering on black), which are to be either bolted or screwed to the equipment panel, or fitted in channeling provided below the switch gear.

Sub-circuits are to be numbered and a legend detailing the circuits is to be framed and fitted to the door of the distribution board.

All other equipment is to be individually labeled to indicate the function.

All switchboards are to be fitted with a label on which the designation of the board is clearly indicated.

A separate engraved label depicting the origin and cable/conductor size shall be fixed below the main switch.

18.4 **Finishes**

Covers for all boxes, expansion boxes, etc, shall be finished to match the paint work of the ceiling or wall surface or as specified.

18.5 **Site Drawing**

On all completed new work or where specifically called for in the Tender Document, the Contractor shall, on completion of the works, submit to the Head : Works, a marked up site plan indicating the exact underground cable reticulation.

19. POWER DUCTING FOR SCHOOL SCIENCE LABORATORIES

The ducting shall be "Ductline 3" supplied by Messrs. Lascon Lighting, 102 Malbourne Road, P.O. Box 2479, Durban 4000: Telephone 031-2075081 or other approved.

20. SPEAKER AND MICROPHONE OUTLETS

Speaker and microphone outlets are to conform to the following details:

1. Speaker outlet – To have one flat and one round pin.

2. Microphone outlet – To have one round pin only.

Both female and male parts to be supplied and installed by the Contractor.

21. BELLS AND BUZZERS

21.1 Bells

Bells for schools and hostels shall be 220 Volt AC or 24 Volt DC as specified for the service. They are to be of robust construction encased in a sturdy cast metal weather-proof case. They are to operate on the frequency of the supply. They shall have an adjustable stabilizing spring, gold-silver contact points and 150 mm gongs.

21.2 Doorbells, Buzzers and Bell Transformers

These will be as specified for each service.

21.3 Bell Pushes

Except where otherwise specified, bell pushes shall be of the flush type suitable for mounting in a standard 100 x 50 mm box. They shall be clearly marked as a bell push and shall be fitted with satin finished anodized aluminium cover plates.

22. SIGNAL TIMERS

22.1 Primary Schools

The timer shall be designed to automatically signal the start and finish of school periods by the switching of a bell circuit and is to comply with the following specification:

1. The mechanism may be synchronous motor or quartz movement driven with a 24 hour dial or digital time read-out suitable for operation on a 220V 50Hz supply and is to be provided with a spring or battery reserve of a least 24 (twenty four) hours.

2. The unit is preferably to have minute to minute timing for a 24 (twenty four) hour period although 5 (five) minute intervals are acceptable, and is to be provided with Weekend lockout. Signal periods shall be adjustable from 5 – 45 seconds.

3. The unit shall be housed in a metal or plastic case with detachable front cover suitable for wall mounting.

4. Timers with punch tape programming are not acceptable.

22.2 High Schools and Colleges

Timers for these institutions shall generally be as for Primary Schools but are to have at least 3 (three) separate programmes and be fitted with three push buttons for independent manual operations for testing of each programme, plus an on/off switch for each programme, which does not affect the running of the clock.

23. CLOCKS

Electric clocks shall be of the quartz electronic battery operated type, with a dial of 250 mm diameter. The dial shall be white, with distinctive minute markings and

chapters shall be black Arabic figures. Time adjustment shall be simple. Where mains operated electronic clocks are specified, these shall be of the synchronous self starting type, suitable for a 200 – 250 V 50 Hz AC supply

24. **TIME SWITCHES**

The time switch shall consist of a single pole switch with silver to silver or other approved contacts operated by a quartz movement with a 24 hour reserve.

A suitable 24 hour, night and day dial, with hour indicator and two adjustable strikers, one OFF and one ON must be provided. The whole mechanism is to be totally enclosed in a dust proof case.

The current rating shall be required and the switch is to be suitable for operation on 220 volt 50 Hertz AC supply. Time switches used for under floor heating are to be fitted with weekend cut-out.

25. **MOULDED CASE CIRCUIT BREAKERS (INCLUDING MINIATURE)**

Circuit breakers shall be of the size and type as directed and specified for the service. They shall comply with SABS Specification 156 and SABS IEC 60947-2.

26. **SWITCHES: ON-LOAD FAULT MAKING (CIRCUIT BREAKER TYPE) WITHOUT TRIPS**

The switches shall be triple pole, hand operated, panel mounting air break type, having continuous current rating as specified and suitable for operation of 380 – 440 Volt 50 Hz AC system.

The contacts are to be of silver alloy and the switch mechanism shall be of the quick-make, quick-break type.

27. **SWITCHBOARD EQUIPMENT**

Switchboard equipment such as switches, circuit breakers, etc, shall be as directed and specified in the detail specification for the service.

Circuit breaker equipment of SABS IEC 60934.

28. **FUSE-SWITCH UNITS (WITH HRC FUSES)**

The fuse-switch unit is to be of the double pole, or triple pole or triple pole with neutral link type, and of the required current rating, as specified for the service and must be in accordance with BS EN 60947-3.

The fuse links must be fully isolated when the switch is in the open position, and interlocks must be provided to prevent the switch being operated with the cover open.

The fuse links shall comply with SABS Specification 172 and SABS IEC 60269-1 to 4.

29. **BUS-BAR COPPER**

Bus-bar copper must be fully in accordance with Tables A1 and A2 of SABS 1473-2 and SABS IEC 60439-2.

30. SPECIFICATION COMPLIANCE

The complete installation shall comply with the requirements of this specification. Should any differences or contradictions exist between this Specification and the detailed requirements for a specific installation, then the detailed requirements shall take precedence.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

GENERAL LIGHTNING PROTECTION SPECIFICATION

LIGHTNING PROTECTION INSTALLATION

GENERAL SPECIFICATION

1. SATISFACTORY INSTALLATION

The whole of the installation shall be carried out in accordance with:

(a) The latest S.A.B.S. Code of Practice for the Protection of Structures against Lightning - S.A.B.S. 03 ; SABS IEC 61024 (1) , 61024 (1 -1); SABS IEC 61312 (1) ; SABS IEC 61662 & NRS 042.

(b) The KwaZulu-Natal Department of Works General Electrical Specification.

(c) The Municipal By-Laws and any other special requirements as deemed necessary by the Local Supply Authority;

(d) Local Fire Regulations.

2. S.A.B.S. APPROVED DRAWINGS

SABS Approved drawings are not required for this project.

3. TEST ON COMPLETION

Upon completion of the lightning protection system, the following tests shall be witnessed by an appointed representative of the Employer. The results shall be recorded on suitable test certificates which must be signed by both the Contractor and the Employers representative. A sketch must be included on each test certificate indicating the positions of each earth electrode in relation to some permanent reference point. It must also indicate the positions at which tests were carried out, the type of test and the results of these tests.

3.1 Earth Resistance Test

The Earth Resistance Test shall involve measuring the resistance to earth of each rod-type electrode, or group of rod-type electrodes, or trench earth which would normally be connected to one down-conductor or earth terminal. This test must be made with the electrodes completely disconnected from any part of the structure or lightning protection system.

3.2 Electrical Continuity Tests

(a) **External Down-Conductors**

Electrical continuity between the lower ends of external down-conductors which must all be disconnected from the earthing system during the test shall not exceed 1 (one) ohm.

(b) Metallic Services

Electrical continuity between any metallic structures of services (e.g. rainwater pipes) which form an integral part of the lightning protection system shall not exceed 1 (one) ohm. These tests should be carried out with all other components of the lightning protection system disconnected from the component being tested.

4. DESCRIPTION OF MATERIAL

4.1 Air Terminals and Down-conductors

All conductors must be in accordance with the requirements of BSS 1474 or American Standards Specification 6063. All aluminium conductors shall have a cross-section area of not less than 30 mm^2 (domestic dwelling only) or 50 mm^2 for all other applications. The dimensions of flat section conductors to be 20 mm x 3 mm. Where conductors are mounted in stand-off guides, the cross-section area of the conductor must be not less than 70 mm^2 to give adequate mechanical strength.

4.2 Conductor Guides

The conductor must be mounted in aluminium alloy guides conforming with the material specification given in 4.1 above. The guides must allow for free longitudinal movement of the conductor to cater for expansion and contraction of the system caused by temperature variation. The minimum thickness of any part of the guide shall not be less than 3 mm. The guides must be securely attached to the structure using two stainless steel screws and plugs, the use of plated screws is not permitted.

The conductor system shall be supported in guides so that an air gap exists at all times between the aluminium and the surface of the structure, the guides being seated upon plastic or other similar insulating material. Should conductors be installed directly upon the surface of concrete or cement plaster, an insulating strip is to be installed over its whole length to prevent contact between the two surfaces. Guides shall be installed to support the conductor at intervals not exceeding 1,2 metres horizontally or 1,5 metres vertically.

N.B.: No part of an aluminium conductor system must be allowed to come into direct contact with concrete or cement plaster as this may cause the aluminium to corrode.

4.3 Expansion Loops

Where conductors are installed horizontally without deviation from a straight line over long distances, expansion loops must be provided at distances not exceeding 30 metres. These expansion loops must have a cross-sectional area which is at least equal to that of the conductor.

4.4 Protection of Down-conductors

Where external down-conductors are installed in areas which are readily accessible to the public, the lower ends of the conductors shall be enclosed in a semi-rigid insulating material. In the case of a circular section conductor this shall comprise a 2 metre length of 20 mm diameter P.V.C. conduit. This conduit shall be securely attached to the wall by means of galvanized steel saddles fixed with stainless steel screws and plugs, spaced at intervals not exceeding 1 m. Where a flat section conductor is used this shall be covered by a similar length of 25 mm P.V.C. conduit. The lower end of the conduit shall be positioned as close as practicable to ground level, i.e. immediately above an aluminium to copper joint. The ends of the conduit shall not be sealed.

4.5 Earthing Electrodes

Earthing electrodes must consist of either copper-clad steel rods not less than 12 mm in diameter and having a minimum copper thickness of 0,20 mm driven into the ground, or a 50 mm^2 (35 mm^2 for domestic dwellings) bare copper conductor buried in a trench, or a combination thereof. Where copper clad steel electrodes are used they must have a suitable bond between the steel core and copper exterior to prevent moisture ingress between the two metals. Where it is necessary to extend earth rods, an electrolytically compatible corrosion resistant, coupling device, which prevents ingress or moisture into the joint shall be used. The copper conductor below the down-conductor joint shall be covered by a semi-rigid P.V.C. conduit for a distance of approximately 200 mm above ground and 400 mm below ground.

4.6 Joints Above Ground

Circular section aluminium conductors shall be jointed by aluminium ferrules or lugs which are securely crimped into place. Aluminium lugs must be bolted together using 10 mm diameter aluminium bolts and washers. The material specification for these components must conform with that laid down in paragraph 4.1. Alternatively heavily tinned copper lugs and ferrules may be used. The lugs should be joined together by means of 10 mm diameter copper, brass or bronze bolts and washers. Care should be taken to inhibit corrosion where dissimilar metals are used by thoroughly cleaning the surfaces of the metal before assembly and subsequently sealing the joint with an inert tenacious compound or tape.

Flat section aluminium conductors shall be joined by double riveting, using aluminium rivets which comply with the material specification laid down in 4.1. Alternatively 2 x 6 mm diameter stainless steel bolts, nuts and washers may be used. Fold over type bends will not be permitted.

Down-conductors are to be terminated approximately 200 mm above finished ground level. Circular section aluminium is to be jointed to a 50 mm^2 (35 mm^2 in the case of domestic dwellings) stranded copper conductor by securely crimping in place two heavily tinned lugs and bolting these together using 10 mm diameter copper, brass or bronze nuts, bolts and washers.

N.B. : Under no circumstances shall aluminium conductors be buried in the ground.

4.7 Joints Below Ground

A joint in the stranded copper conductor which forms part of the earthing system must be made by using a crimped copper ferrule clamping (not lugs) using two copper line taps of suitable dimensions, or exothermic welding. The copper earth conductor must be joined to an earth rod by either clamping, using a standard earth rod clamp or copper line tap or by exothermic welding. Joints which are made between dissimilar metals (i.e. copper conductor to galvanized steel water main), must be thoroughly cleaned before assembly. They shall be rendered watertight using waterproof adhesive tape on a suitable compound for a minimum distance of 200 mm in all directions from the joint.

4.8 Bonds

Where it is necessary to bond the aluminium conductor to any other metallic surface, this must be done by bolting or riveting. When attaching aluminium to a dissimilar metal the joints are to be thoroughly cleaned and sealed to prevent corrosion.

5. GENERAL INSTALLATION PROCEDURE

5.1 Air Terminals for Non-metallic Pitched Roofs

Aluminium conductors are to be installed along all ridges of roofs and projections such as dormer windows, etc., terminating at the ends with conductors running downwards over the surface of the roof and the eaves. Non-metallic chimneys must be protected by means of a finial of sufficient length to cover the chimney within a 45° angle struck downwards from its point. Alternatively it should have a conductor installed in the form of a closed loop upon the upper surface. The conductors are to follow the outer contour of the stack and must be bonded at a convenient point to the nearest component of the air terminal system.

N.B. : This bond may run in a horizontal or downward direction, but under no circumstances must any part of it run above horizontal.

Conductors may be dead-ended (i.e. have one end free and unbonded), providing that the length of such a conductor does not exceed 10 metres and that the unbonded end is either at the same level or higher than the bonded end. This technique may be used where ridge conductors are installed over dormer windows, etc.

In all cases where metallic gutters have been installed along the eaves of a pitched roof, these must be bonded to the air terminal system. Where metallic gutters do not exist, however, a conductor must be installed over the surface of the roof at eaves level to which the remainder of the air terminal system is to be bonded, with the following exceptions :

(a) Where the maximum distance from the ground level to the eaves of the building is less than 4 metres and the pitch of the roof is more than 1 in 2 (27° from the horizontal).

(b) Where the maximum distances from ground level to the eaves is less then 7 metres and the pitch of the roof is more than 1 in 1,5 (34° from the horizontal).

(c) Where the distance from the ground level to the eaves is more than 7 metres and the pitch of the roof is more than 1 in 1 (i.e. the included angle at the apex of the roof is less than 90°).

Under these circumstances eaves conductors need not be installed.

Any non-metallic objects which protrude above the general roof lines, such as Cape Dutch gable ends, must be protected as described above with a suitable air terminal system. Any metallic objects which protrude above the general roof line, such as hot water expansion pipes must be bonded as directly as possible to the nearest eaves conductor, gutter or other part of the lightning system.

N.B. : These bonding conductors must run in a horizontal or preferably a downward direction, from the vent pipe, etc., to the lightning protection system.

5.2 Air Terminals for Metallic Pitched Roofs

Buildings with roofs covered with electrically continuous metal sheets do not require separate air terminals but must be earthed via down conductors generally as described in 5.6 and 5.7. Any non-metallic objects projecting above the general roof line must be separately protected as described in 5.1 and bonded to the metal roof covering.

5.3 Air Terminals for Non-metallic flat or Mono-pitched Roofs

For flat or mono pitched roofs of non-metallic construction the air terminal system must consist of aluminium alloy conductors installed around the outer perimeter of each section of the roof structure. These conductors must be installed on top of parapet walls if these exist. Lift motor rooms, tank rooms, penthouses, etc., which protrude above the general roof line must have air terminal conductors installed around the outer perimeter of each roof slab or parapet wall. Any metallic objects which protrude above the roof line, such as expansion pipes, signs, flag poles, handrails, etc., must be bonded directly to the nearest component of the lightning protection system as described in 5.1.

N.B. : It is not permissible for the ends of conductors to be bonded directly to the perimeter air terminal system if the latter is installed upon a parapet wall having a height exceeding 500 mm above roof slab level. In these circumstances the conductors are to be bonded directly to the down conductors.

5.4 Air Terminals for Metallic flat or Mono Pitched Roofs

Metallic flat or mono pitched roofs do not require separate air terminal conductors, providing that there is electrical continuity between the metallic roofing sheets, (see 5.2). A metallic roof surrounded by a non-metallic parapet wall shall have conductors installed at the top of the parapet wall and these must be bonded to the metallic roof at intervals not exceeding 20 metres. If the parapet wall is clad with metal over its upper surface or a handrail is installed which affords good electrical continuity, separate air terminal conductors need not be installed. Under these circumstances the metal handrail or cladding must be bonded to the metal roof covering at intervals not exceeding 20 metres.

All non-metallic covering such as slates, tiles, asbestos cement sheeting, etc., supported by a steel structure being electrically continuous throughout may be treated as being of a complete metal construction. In these circumstances no separate air terminal system need be installed providing the steel roof structure is bonded to earth at intervals given in 5.5.

5.5 Down Conductors for Non-metallic Structures

Down conductors must be installed at regular intervals around structures and to run as directly as possible between the air terminal and earthing system. They must, where practicable, be positioned at the external corners of the structure. The maximum separating distance between down conductors around the perimeter of the structure must not exceed 30 metres. In the case of very tall buildings having a slender base (i.e. chimney stacks, water towers, etc.), a minimum of two down conductors must be installed.

The lower ends of down conductors are to be terminated and bonded to the earthing system approximately 200 mm above finished ground level. Under no circumstances must aluminium conductors be buried underground. Test joints must be provided between the down conductors and earthing system. Down conductors must run vertically between the air terminal and earthing systems. Where this is impracticable, their course may be deviated to run at any angle up to and including horizontal.

Where it is necessary to run conductors horizontally over the upper surface of a structural protrusion, such as an exposed concrete slab, the conductor may run down vertically over the edge of the slab and return to the main structure, so that the distance between the upper and lower conductors exceeds one third of the length of the horizontal run. Looped down conductors are not permitted. Down conductors must not run over the underside of large overhangs which are less than 6 metres above ground level, or other areas where people are likely to be present during a thunderstorm.

External or internal metallic rainwater pipes may be used as down conductors providing these are of substantial section and are jointed by screwing one length into another or welding. Thin gauge galvanized steel pipes whose sections are held together by friction, rivets or screws must not form part of a lightning protection system.

5.6 Down conductors for reinforced concrete framed structures

The steel reinforcement of this type of structure may be used in place of down conductors. Where the reinforcing system is used, the air terminal system must be bonded to it at a maximum of 30 metre intervals using steel clamps. This bond may be achieved by clamping, with a steel clamp, a steel conductor to a selected reinforcing bar, the opposite end of this conductor must terminate at a corrosion resistant metallic terminal such as Grade 316 stainless steel.

The reinforcing system of prefabricated concrete buildings must not be used unless special provision is made for bonding the various prefabricated sections together.

The terminals should be mounted flush with the face of the concrete. An aluminium alloy bond must then be taken from the air terminal system and be connected to the stainless steel terminal by means of a heavily tinned crimp lug for circular section aluminium, or a suitable bi-metallic joint in the case of flat section aluminium. A similar system must be used to bond the reinforcing system at ground level to the earthing system at points directly below the air terminal bonds. Here copper conductors must be used as the external bonding material.

Under no circumstances must copper, or other non-ferrous material be allowed to come into contact with steel reinforcing bars, as this may cause severe corrosion and subsequent structural damage. The lightning protection system must not be bonded to any part of the structure which is electrically isolated from the remainder of the building, i.e. cantilevered sections. In these circumstances, or where it is otherwise impracticable to use the reinforcing system, external down conductors must be installed as described in 5.5.

5.7 Down conductors for steel framed structures

Where the framework of a building is constructed of structural steel columns, these may be used in place of down conductors providing the separating distance between them does not exceed 30 metres. The upper ends of the columns must be bonded to the air terminal systems and the lower ends to the earthing system.

5.8 Earthing by means of vertically installed rod type electrodes

Rod-type electrodes must be driven into the ground at a position directly below each down connector. The maximum earthing resistance of each electrode or number of electrodes bonded to any one down conductor shall not exceed N X 30 ohms, where N equals the total number of down conductors which are bonded to a common air terminal system, or 200 ohms whichever is the lower value.

The minimum horizontal separating distance between rod-type electrodes bonded together must not be less than their installed depth. The upper ends of installed rod-type electrodes are to be terminated approximately 500 mm below finished surface level. A 50 mm^2 copper bonding conductor must be installed to run between each earthing electrode system and the lower ends of the adjacent down conductors. A joint is to be made between each of these bonding conductors and the down conductors at a position approximately 200 mm above finished ground level. These bonding conductors must be installed in P.V.C. conduit securely affixed to the wall (see 3.4). The length of this P.V.C. conduit must be approximately 600 mm and must be installed so that approximately 200 mm protrudes above ground level, the remainder being buried into the soil.

5.9 Earthing by means of metallic water mains

Where two or three down conductors are installed the water mains may serve as an earth terminal for one of these. Where three of more down conductors are installed the water mains may serve as an earth terminal for two of these. Regardless of whether the water mains are used as an earth terminal or not, the incoming metal water pipe must be bonded to the lightning protection earthing system underground.

5.10 Earthing by means of trench type electrodes

Where the soil conditions prevent the satisfactory installation of rod-type electrodes, a trench earth system must be installed. This method is to comprise a 50 mm^2 stranded copper conductor installed horizontally into a trench at a depth of 500 mm below finished ground level. The conductor is to follow the general outline of the structure to be protected and be installed 1 metre away from the outside walls. Where the building stands on rocky ground, the trench earth may be attached to the lower part of the wall in areas where rock protrudes through the soil. The conductor must, however, be buried wherever possible as described above.

Each down conductor must be bonded to the trench earth system as directly as possible by means of a copper conductor.

Trench earth systems must have a maximum earth resistance of 30 ohms. An isolated length of trench earth mat must be bonded to the down conductor system in such a way as to reduce the length of dead-ends to the minimum.

Should trench earths be installed beneath pathways where people are likely to be present during a thunderstorm, a plastic, bitumastic or ceramic pipe must be installed having a length similar to the width of the pathway and the trench earth conductor run inside it.

N.B. : The maximum useful length of a dead-ended trench earth is 80 metres.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

MAP OF TENDER SUBMISSION LOCATION


MAYVILLE - DURBAN
DOPW- Tender Box Location
455A King Cetshwayo Hwy
Mayville
DOP
N
King Cetshwayo Hwy
Exclusive Books Westwood
Flight Centre - Westwood
Locksley Dr
Rippon Rd
Moses Kotane Rd
E B Cloete
SHERWOOD
Westmeath Ave
Richill Grove
Cornforth Ave
Wiggins Rd
WIGGINS
Mary Rd
Harris Cres
Carlisle Rd
Wattle Grove
165

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

JOINT VENTURE AGREEMENT

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

Annexure 5

Joint Venture Agreement

(March 2004)

(First Edition of CIDB document 1017)

1. **PREAMBLE**

This agreement is made and entered into by and between

_____

_____

_____

of the first part and

_____

_____

_____

of the second part and

_____

_____

_____

of the third part.

(allow for additional parties as necessary).

Whereas the foregoing parties have resolved to form a Joint Venture under the title of

_____

_____

_____

for the exclusive purposes of securing and/or executing the Contract to be awarded by

(name of Employer)

to the KZN Department of Public Works in respect of the following project:

for *(brief description of Contract)*

eThekwini Region: Empungeni primary school: Storm Damage Phase 16 (Only Bidders Registered in the Eyesizwe Contractor Development Programme Phase 3 within eThekwini Region are Eligible to Tender)

Now it is hereby agreed as follows :

2. **DEFINITIONS AND INTERPRETATION**

2.1 Definitions

The following words and expressions shall have the meanings indicated, except where the context otherwise requires. Defined terms and words are, in general, signified in the text of the Agreement by the use of capital initial letters, but the absence of such letters does not necessarily signify that a term, or word, is not defined.

'Agreement' means the agreement between the Members of the Joint Venture and includes this model form of agreement together with the Preamble, Specific Provisions, if any, Schedules 'A', 'B' and 'C' and any relevant Documents prepared prior to the signing of the Agreement and appended thereto.

'Contract' means the contract with the Employer for the supply of the Deliverables, for the purposes of securing and executing which, the Joint Venture has been formed.

'Deliverables' means the works and/or services, equipment, materials, goods, etc. to be furnished by the Joint Venture to the Employer in terms of the Contract.

'Document' means any written, drawn, typed, printed, or photographic material, which relates to the Agreement.

'Employer' means the person, or body, which is to award the Contract and will employ the Joint Venture if it is awarded the Contract.

'Joint Venture' means the joint venture formed by the Members in accordance with the Agreement.

'Management Committee' means the body established in terms of the Agreement to manage all aspects of the work of the Joint Venture in securing and executing the Contract and in meeting the provisions for the Agreement.

'Member' means a person, or body which, being a party to the Agreement, is a member of the Joint Venture.

'Member's Interest' means the proportion expressed as a percentage, which the total monetary value of all resources provided and contributions made by a Member towards the execution by the Joint Venture of the Contract bears to the total of such values by all Members and, unless otherwise indicated in the Agreement, represents the extent to which the Member participates in the fortunes of the Joint Venture.

'Representative' means the person representing a Member on the Management Committee.

'Schedules' means Schedules 'A', 'B' and 'C' which set out general, financial and other information relating to the Members and the obligations, duties, rights, risks and benefits arising from their participation in the Joint Venture.

'Specific Provisions' means the variations, if any, required to this standard form of agreement for the specific purposes of the Agreement.

2.2 Interpretation

Unless inconsistent with the context, an expression in the Agreement which denotes:

- any gender shall include the other genders
- a natural person shall include a juristic person and vice versa
- the singular shall include the plural and vice versa

2.3 Headings

The headings to clauses of the Agreement shall not be considered part thereof, nor shall the words they contain be taken into account in the interpretation of any clause.

2.4 Law

The Agreement shall be construed in accordance with and governed by the laws of the Republic of South Africa and the English language versions shall prevail.

2.5 Language

English shall be exclusively used by the Members in the preparation of Documents unless otherwise indicated.

2.6 Conflict between Agreement and Contract

Should any provision of the Agreement be in conflict with the terms of the Contract, the Agreement shall be amended to the approval of the Management Committee so as to eliminate the conflict.

3. JOINT VENTURE GENERAL

3.1 Establishment and Purpose

The Joint Venture established by the Members in terms of the Agreement is an unincorporated association with the exclusive purposes of securing and executing the Contract for the benefit of the Members.

3.2 Termination

The operation of the Joint Venture and the validity of the Agreement shall terminate if and when it becomes evident that the Joint Venture will not be awarded the Contract, or, if the Joint Venture secures the Contract, when all obligations and rights of the Joint Venture and the Members in connection with the Contract and the Agreement have ceased and/or been satisfactorily discharged.

Unless otherwise decided by the Management Committee, the Agreement shall not terminate if a Member changes its name, or is taken over by, or merged with, another body.

This agreement will terminate when any one of the Members resigns, are liquidated or opts out of this agreement and the Joint Venture will be in breach of contract with the Employer and their contract could be cancelled.

3.3 Exclusivity

Unless otherwise agreed by the Management Committee, or provided for in the Contract no Member shall engage in any activity related to the Contract other than as a Member of the Joint Venture and Members shall ensure that their subsidiaries and other bodies over which they have control comply with this requirement.

3.4 Participation of Members

Except as may otherwise be stipulated in the Agreement, each Member shall be responsible for all costs incurred by it prior to the date of inception of the Agreement.

Subsequent to the date of inception of the Agreement, each Member shall, participate in the operations, risks, responsibilities and fortunes of the Joint Venture including, inter alia, the provision of funding, sureties, guarantees, insurances, human and other resources and participation in profits and losses to the extents indicated in the Schedules. Participation in any aspect not covered in the Schedules shall, if an agreement cannot be reached between the Members, be to the same extents as indicated by the Members Interests.

3.5 Management

The affairs of the Joint Venture shall be directed and controlled by the Management Committee, as set out in Section 4 hereof.

3.6 Confidentiality

All matters relating to the Agreement and the Contract shall be treated by the Members as confidential and no such matter shall be disclosed to any third party without the prior written approval of the Management Committee.

No Member shall be party to the dissemination of publicity relating to the Contract, or the Agreement, without the prior written approval of the Management Committee and the Employer.

3.7 Assignment

No Member shall cede, assign, or in any other way make over any of its rights, or obligations, under the Agreement without the prior written consent of the Management Committee.

3.8 Subcontracting

No Member shall subcontract any obligation, work or duty for which it is, itself, responsible in terms of the Agreement without the prior written consent of the Management Committee.

3.9 Variations to Agreement

No variation, modification, or waiver of any part of the Agreement shall be of any force, or effect, unless unanimously agreed by the Members and reduced to writing.

3.10 Liability

Each Member warrants that it will indemnify the other Members against all legal liabilities arising out of, or in connection with the performance of its obligations under the Agreement.

It is acknowledged by the Members that they may be held jointly and severally liable in respect of claims against the Joint Venture by the Employer or third parties.

4. MANAGEMENT OF JOINT VENTURE

4.1 General

The affairs of the Joint Venture shall be directed, controlled and managed by the Management Committee, which, within the terms of the Agreement and the Contract, shall have full authority to bind the Members in all matters relating to the affairs of the Joint Venture.

Communication between the Joint Venture and the Employer, or third parties, relating to the Contract shall be conducted exclusively by the Management Committee, or by such person as it may delegate to perform this function.

The Management Committee shall have the power to appoint a project manager and/or such other persons as it may see fit to appoint for the purpose of executing the Contract and may delegate such of its powers, responsibilities and duties as it may consider necessary, or desirable, to persons or bodies appointed or seconded for this purpose.

Such administrative functions as are necessary to ensure the effective operation of the Management Committee shall be performed by its chairman.

4.2 Management Committee

4.2.1 *Composition*

The Management Committee shall, unless otherwise agreed by all the Members, consist of one Representative of each Member and each Member shall be obliged, at all times, to maintain a Representative on the Management Committee.

Each member shall, not later than three working days after the signing of the Agreement, appoint its Representative and notify the other Members of the name and contact details of the Representative. Such Representative shall have the power to bind the Member that he represents in all matters relating to the execution of the Contract and the performance of the Agreement.

A Member shall be entitled, after giving the other Members not less than three working days written notice of his intention to do so, appoint, remove and/or replace, an alternate who shall, at any meeting of the Management Committee from which the Representative whom he represents is absent, be vested with all rights and powers and subjected to all the obligations of the absent Representative.

The chairman of the Management Committee shall be the Representative of the Member which has the largest Member's Interest. If two, or more, Members have the same, largest Member's Interest, the chairmanship shall rotate between the Representatives of such Members at three monthly intervals, the order of rotation to be determined by ballot.

Notwithstanding the foregoing, the chairmanship of the Management Committee may be determined, or changed, at any time by unanimous decision of the Management Committee.

No remuneration shall be paid by the Joint Venture to Representatives or their alternates for serving on the Management Committee,

4.2.2 *Meetings*

Meetings of the Management Committee shall take place at such times and places as the Management Committee may determine, provided that the chairman shall convene a meeting of the Management Committee to be held not later than ten working days after he has been requested, in writing, by a Member to do so. Not less than five working days written notice of any meeting of the Management Committee shall be given to all Representatives and their alternates.

The Management Committee may permit, or invite, persons other than Representatives or alternates to attend any of its meetings, but such persons shall not have voting rights.

4.2.3 *Decisions*

Each Representative shall have one vote on the Management Committee and where, in terms of this clause, a casting vote is required, this shall be exercised by the chairman.

All decisions of the Management Committee shall, desirably, be unanimous. Accordingly, if unanimity cannot, initially, be achieved in regard to a decision, the meeting at which that decision is sought shall be adjourned for a period of 48 hours to enable Representatives to consult with their principals. If, on resumption of the adjourned meeting, unanimity can still not be achieved, the decision, provided it is not one requiring unanimity of the Members, shall be taken by majority vote and, in the event of a tie, the chairman shall exercise a casting vote.

A Member not satisfied with a majority decision of the Management Committee may declare a dispute, to be dealt with in terms of Clause 8 hereof, but the majority decision shall, nevertheless, be implemented with immediate effect.

Decisions of the Management Committee, whether taken at a meeting, or otherwise, shall be recorded in written minutes, which shall be distributed by the chairman to reach the Representatives not later than five working days after those decisions were taken. Such minutes shall be deemed to have been affirmed by the Representatives unless written notice of dissent is received by the chairman not later than three working days after receipt of the minutes by the Representative.

4.2.4 Powers and duties

The functions, responsibilities and powers of the Management Committee shall include, inter alia, those listed below:

4.2.4.1 Formulating overall policy in regard to the achievement of the objectives of the Joint Venture.

4.2.4.2 Managing the day to day affairs of the Joint Venture.

4.2.4.3 Monitoring, directing and co-ordinating the activities of the Members to ensure that the objectives of the Joint Venture are achieved and that the obligations and responsibilities of the individual Members are met.

4.2.4.4 Monitoring and controlling the financial affairs of the Joint Venture and ensuring that proper books of account and financial records relating to affairs of the Joint Venture are maintained in an approved form and submitted to the Management Committee for approval at regular intervals, which shall not be longer than one month.

4.2.4.5 Determining the necessity for and the details of any changes in the duties and responsibilities of Members provided that any resulting changes in Members' Interests shall be unanimously approved by the Members.

4.2.4.6 Determining the terms and conditions of employment of personnel and the emoluments applicable to staff seconded to the Joint Venture by the Members.

4.2.4.7 Controlling and approving the appointment of all subcontractors.

4.2.4.8 Procuring, after the completion of the Contract and the release of all bonds, guarantees and sureties given in respect of the performances of the Joint Venture and the Members, the preparation and auditing of a final set of accounts, on the basis of which the final profits, or losses, attributable to the individual Members shall be determined and any necessary adjustments effected.

5 RESOURCES OF JOINT VENTURE

The resources to be utilised by the Joint Venture in securing and executing the Contract shall, insofar as these are to be provided directly by the Members, be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Member's Interests are not, except with the unanimous approval of the Members, affected thereby.

Similarly, specific areas of responsibility of the Members for the performance of work and the provision of facilities shall be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Members' Interest are not, except with the unanimous approval of the Members, affected thereby.

5.1 Schedule 'A' (General)
Schedule 'A' shall contain general information relating to the Joint Venture including, inter alia, the following :

1. The Employer's name and address.
2. A brief description of the Contract and the Deliverables.
3. The name, physical address, communications addresses and domicilium citandi et executandi of each Member and of the Joint Venture.
4. The Members' Interests.
5. A statement indicating whether, or not, Specific Provisions apply to the Agreement.
6. A schedule of insurance policies which must be taken out by the Joint Venture and by the individual Members.
7. A Schedule of sureties, indemnities and guarantees that must be furnished by the Joint Venture and by the individual Members.
8. Details of the persons, who, in the event of failure by the Members to reach agreement on the appointments of mediator and arbitrator, will nominate appointees to these positions in terms of Clauses 8.2 and 8.3.

5.2 Schedule 'B' (Financial)
Schedule 'B' shall contain information regarding the financial affairs of the Joint Venture including, inter alia, the following :

1. The working capital required by the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the individual Members from time to time.
2. The banking accounts that are to be opened in the name of the Joint Venture and the manner in which these are to be operated.
3. The rates of interest that will be applicable to amounts by which Members are in debit, or credit, to the Joint Venture.
4. The names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.
5. The intervals at which interim financial accounts and forecasts will be prepared for approval by the Management Committee.
6. Insofar as not covered in Schedule 'C', the basis on which contributions of various types by the Members towards the work of the Joint Venture in securing, executing, managing and satisfactorily completing the Contract, will be valued.
7. The basis on which profits and/or surplus cash will, if available from time to time, be distributed to Members.
8. The basis upon which losses, if any, are to be apportioned to Members.

5.3 Schedule 'C' (Contributions by Members)
Schedule 'C' shall set out the contributions of various types, other than cash, that will be made by the individual Members towards the work and obligations of the Joint Venture and shall, as far as possible, indicate the monetary values to be placed on such contributions, which may include, inter alia, the following :

1. Staff seconded to the Joint Venture.
2. Work carried out and services provided to, or on behalf of, the Joint Venture.
3. Plant, equipment, facilities etc. made available for use by the Joint Venture.
4. Materials and goods supplied to, or on behalf of, the Joint Venture.
5. Licences, sureties, guarantees and indemnities furnished to, or on behalf of, the Joint Venture.
6. Joint Venture Disclosure form required for the Contract.

6. BREACH OF AGREEMENT

If a Member breaches any material provision of the Agreement, or delays or fails to fulfil its obligations in whole, or in part, and does not remedy the situation within fourteen calendar days of receipt of notice from the Management Committee, or another Member, to do so, the other Members shall have the right, without prejudice to any other rights arising from the default, to summarily terminate the Agreement and re-assign the defaulting Member's rights and obligations in the Joint Venture as they see fit and withhold any moneys due to the defaulting member by the Joint Venture.

Each Member shall indemnify the other Members against all losses, costs and claims which may arise against them in the event of the Agreement being terminated as a result of breach of the Agreement by the said Member.

7. INSOLVENCY OF MEMBER

Should a Member be placed in liquidation, or under judicial management, whether provisionally or finally, or propose any compromise with its creditors, the other Members shall be entitled to proceed in terms of Clause 6, as if the Member had breached the Agreement.

8. DISPUTES

8.1 Settlement

The Members shall negotiate in good faith and make every effort to settle any dispute, or claim, that may arise out of, or relate to, the Agreement.

If agreement cannot be reached, an aggrieved Member shall, if he intends to proceed further in terms of Clause 8.2 hereof, advise all other Members in writing that negotiations have failed and that he intends to refer the matter to mediation in terms of Clause 8.2.

8.2 Mediation

Not earlier than ten working days after having advised the other Members, in terms of Clause 8.1, that negotiations in regard to a dispute have failed, an aggrieved Member may require that the dispute be referred, without legal representation, to mediation by a single mediator.

The mediator shall be selected by agreement between the Members, or, failing such agreement, by the person named for this purpose in Schedule 'A'. The costs of the mediation shall be borne equally by all Members.

The mediator shall convene a hearing of the Members and may hold separate discussions with any Member and shall assist the Members in reaching a mutually acceptable settlement of their differences through means of reconciliation, interpretation, clarification, suggestion and advice. The Members shall record such agreement in writing and thereafter they shall be bound by such agreement.

The mediator is authorised to end the mediation process whenever in his opinion further efforts at mediation would not contribute to a resolution of the dispute between the Members.

8.3 Arbitration

Where a dispute or claim is not resolved by mediation, it shall be referred to arbitration by a single arbitrator to be selected by agreement between the Members or, failing agreement, to be nominated by the person named for this purpose in Schedule 'A'.

The Member requiring referral to arbitration shall notify the other Members, in writing, thereof, not later than thirty calendar days after the mediator has expressed his opinion, failing which the mediator's opinion shall be deemed to have been accepted by all Members and shall be put into effect.

Arbitration shall be conducted in accordance with the provisions of the Arbitration Act No. 42 of 1965, as amended, and in accordance with such procedure as may be agreed by the Members or, failing such agreement, in accordance with the rules for the Conduct of Arbitrations published by the Association of Arbitrators and current at the date that the arbitrator is appointed.

The decisions of the arbitrator shall be final and binding on the Members, shall be carried into immediate effect and, if necessary, be made an order of any court of competent jurisdiction.

9. DOMICILIUM

The Members choose domicilium citandi et executandi for all purposes of and in connection with the Agreement as stated in Schedule 'A'. A Member shall be entitled to change his domicilium from time to time, but such change shall be effective only on receipt of written notice of the change by all other Members.

Member No. 1

Thus done and signed at _____ this _____ day of _____ 20___

For and on behalf of _____ *[Company]*

by *[name]* _____ who warrants his authority to do so.

As witnesses 1. _____ As witnesses 2. _____

Member No. 2

Thus done and signed at _____ this _____ day of _____ 20___

For and on behalf of _____ *[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

Member No. 3

Thus done and signed at _____ this _____ day of _____ 20___

For and on behalf of _____ *[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

[Allow for additional parties as necessary].

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

Project Name:	**eThekwini Region: Empungeni primary school: Storm Damage Phase 16**

Health and Safety Specification

September 2018
Edited: Nov 2022

public works

Department:
Public Works
PROVINCE OF KWAZULU-NATAL

Occupational Health, Safety and Environmental Specification (OHSE SPEC)

Project Name : Empungeni Primary School, Maphumulo: Repairs and Renovations to Storm Damage

WIMS no. : 069027

Client OHS Representative: L. Bailey

Region : eThekwini Region

District : iLembe

Ward no. : N/A

TABLE OF CONTENTS

1. Introduction

The *KwaZulu / Natal Department of Public Works* is deemed as the "**Client**" in terms of the definitions of Construction Regulations of 2014 as published in *Government Gazette No. 37305*.The Construction Regulations of 2014 under *CR (5) (1)* stipulates that the client must prepare a suitable, sufficiently documented and coherent site specific Occupational Health and Safety Specification for the intended construction work based on the baseline risk assessment.

The purpose of this Occupational Health and Safety Specification document (*which hereinafter will be referred to as OHSE Spec*) is to provide designers and the successful tenderer with essential OHS information to ensure effective safety management during the design and construction phase of the project.

This OHSE Spec forms an integral part of the contract between the Client and the Principal Contractor, so as to ensure compliance with the Occupational Health and Safety Act, Act 85 of 1993 and its applicable regulations and must serve as the basis for the Principal Contractor to develop his/her Project Safety, Health and Environmental Management Plan. As with any other plan for it to be implemented and managed effectively it requires the allocation of sufficient funds to achieve the objectives set out in the plan. In line with this requirement Construction Regulation 5(1) (g) requires the Client to ensure that the Principal Contractor has made adequate provisions for the cost of Health and Safety Measures in their tenders.

It must be noted that this OHSE Spec as much as it is detailed it is not exhaustive and the onus is on the Principal Contractors to ensure that they comply with Section 8 of the OHS Act, Act 85 of 1993 which states that "*Every Employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.*" this means that Principal Contractors as they are employers in their own right must at all times ensure continuous assessments are done for continued provision and maintenance of a healthy and safe working environment.

2. Definitions

For the purpose of the OHSE Spec, the abbreviations or definitions given hereunder shall apply and the reference to on gender will also apply to the other gender.

"CR" refers to the Construction Regulations 2014

"Agent (*Pr. CHSA***)"** means a competent person who acts as a representative for a Client in terms of regulation (5)5.

"Client" means Department of Public Works

"Competent person" means a person who-

(a) Has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific for that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and

(b) Is familiar with the OHS Act, Act 85 of 1993 and with the applicable regulations made under the Act;

"Construction Manager (*Site Agent***)"** means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;

"Construction Site" means a workplace where construction work is being performed;

"Construction Supervisor" means a competent person responsible for supervising construction activities on a construction site;

"Construction Vehicle" means a vehicle used as a means of conveyance for transporting persons or material, or persons and material, on and off the construction site for the purposes of performing construction work;

"Construction work" means any work in connection with –

(a) The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or

(b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;

"Construction Work Permit" means a document issued in terms of regulation 3 of the Construction Regulations 2014;

"Contractor" means an employer who performs construction work;

"COVID-19" Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus.

"COVID-19 compliance officer" designated person that oversee the implementation of the COVID-19 site management plan.

"Demolition Work" means a method to dismantle, wreck, break, pull down or knock down of a structure or part thereof by way of manual labour, machinery, or the use of explosives;

"**Fall Protection Plan**" means a documented plan, which includes and provides for-

(a) All risks relating to working from a fall risk position, considering the nature of work undertaken;
(b) The procedures and methods to be applied in order to eliminate the risk of falling; and
(c) A rescue plan and procedures;

"**Health and Safety File**" means a file, or other record containing the information in writing required by these Regulations;

"**Health and Safety Plan**" means a site, activity or project specific documented plan in accordance with the client's health and safety specification;

"**Health and Safety Specification**" means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;

"**Medical Certificate of Fitness**" means a certificate contemplated in regulation 7(8) of Construction Regulations 2014;

"**Principal Contractor**" means an employer appointed by the client to perform construction work;

"**Safety Officer**" – a person deemed competent by SACPCMP under the relevant category of registration.

"**Professional Engineer or Professional Certificated Engineer**" means a person holding registration as either a Professional Engineer or Professional Certificated Engineer in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000);

3. Scope of Application

3.1 This OHSE Specification document stipulates the minimum Occupational Health, Safety, and Environmental requirements that the tenderer need to address in his / her OHSE Plan. This Specification also addresses legal compliance, hazard identification, risk assessment, risk control, and the promotion of a Health and Safety culture amongst those working on the project.

3.2 This Specification also makes provision for the protection of persons other than employees. This OHSE Spec is exclusively applicable to the following project pending any change of scope which may necessitate changes to the OHSE Specification;

Empungeni Primary School, Maphumulo: Repairs and Renovations to Storm Damage.

3.3 This OHSE Specification further seeks to achieve the following;

3.3.1 To provide Principal Contractors with the Structure of the Detailed OHSE Plans they will have to prepare and submit for this project. ***See Annexure A***

3.3.2 Provide the overarching framework within which the Principal Contractor is required to demonstrate compliance with certain requirements for occupational health and safety established by the Occupational Health and Safety Act, Act 85 of 1993, all applicable regulations and Client Specific Requirements. ***See Annexure B***

3.3.3 To bring to the attention of the Bidding Principal Contractors that they need to make an undertaking that the costs for executing the project includes the costs of complying with the OHS Act, Act 85 of 1993, all applicable regulations including Client Specific requirements. Such undertaking is made by appending signatures on the OHS Declaration for Tenders. ***See Annexure C***

3.3.4 Ensure that the Principal Agent as the Professional Service Provider appointed by the Department to manage the project on its behalf in terms of the Conditions of Contract applicable to this project ensures that the contents of this document and the attached Baseline Risk Assessment are taken into consideration during design by all professionals appointed and that the OHSE Specification is incorporated into the tender documents. ***See Annexure D***

4. Contractual Issues

4.1 Acceptance by the Principal Contractor of the contract with KZN DOPW shall constitute acknowledgement that the Principal Contractor has familiarised him / herself with the contents of the OHSE Spec and that he / she will comply with all its obligations in respect thereof.

4.2 Due to fact that this document is based on legislative requirements, the Client requires that all Contractors comply with the requirements of this document and all other relevant legislative requirements not covered by this document.

4.3 The Client or its duly appointed Construction H & S Agent reserves the right to stop any Principal Contractor or Sub-Contractors from working whenever Safety, Health or Environmental requirements are being violated as required by regulation *5(1)(q)*. Any resultant costs of such work stoppages will be for the relevant Contractor's account.

4.4 The requirements as specified by the Client in this document must not be deemed to be exhaustive and the Client reserves the right to make changes as and when the Client deems fit to address issue of OHSE Compliance.

4.5 The Client will not entertain any claim of any nature whatsoever which arises as a result of costs incurred or delays being experienced due to the Contractor not complying with the requirements of this document and / or any other applicable legislative requirements imposed on the Contractor.

5. Administrative Requirements

5.1 Notification of Construction Work

The successful tenderer must at least within 07 working days before commencing with construction work notify the Provincial Director in writing using **Annexure "2"** if the project meets the following threshold. A copy of the notification once stamped by a DoL Official must be submitted to the client prior to commencing with construction work.

6. Construction Safety Officer Requirements

6.1 Appointment of a Construction Safety Officer– SACPCMP registered

Further to the above criteria, should the KZN DoPW or its Representative having considered the risks present and lack of compliance to the Occupational Health and Safety Act, Act 85 of 1993 and its applicable Regulations the KZN DoPW or its Representative may issue an instruction that a Full Time Construction Health and Safety Officer must be appointed, such a requirement will have to be met.

6.2 Appointment of a COVID-19 compliance officer

The Principal Contractors will have to appoint a **COVID-19 Compliance Officer** to oversee the implementation of the COVID-19 Site Management Plan and conduct daily inspection of the work areas.

6.3 Communication, Documentation and Site Audit

All HS&E communication during the project between the parties will be in writing, including the issue and responses to non-conformances and H&S audit results. Communication between the DPW OHS Practitioner and the Principal Contractor will be via the Project Manager.

A comprehensive site SHE audit will be conducted monthly and DTSI`s to be completed by construction work supervisor (CR8.7) prior to work daily. The site will be inspected by the appointed CHSO (CR8.5) and the documentation audited relative to verify past or completed activities, verify compliance of current activities and the H&S plan.

The Construction Health & Safety Officer (CHSO) must accompany the Client on all OHSE audits and inspections. It is preferable that a Health & Safety Representative (known as SHE Rep.) is present during all SHE audits. The CHSO is to apply a similar approach to managing their Contractors. The frequency of the SHE audits may be increased if the Principal Contractor or Sub-contractors are not performing adequately.

SHE Audit results will be acted upon as per section 5(c) of this document. The Client, Designer may act, or require further outcomes if non-compliances are noted or unsafe acts are noted on site. Weekly internal SHE audits are to be completed and include site conditions as well as ensuring that H&S files are appropriate and compliant. Comprehensive SHE Audit Reports are to be made available, the format of the audit reports are to be agreed upon between the CHSO and DPW.

6.4. The Project Team

Initials and Surnames	Organisation	Discipline	Tel. No.	Email

Annexure A
Structure of the Detailed OHSE Plan

A detailed OHSE Plan is to be submitted by the successful tenderer as per section 3.3.1 above. The following are the minimum standard legal documentation that must form part of the OHSE Plan based on the risks attached in executing this project –

Empungeni Primary School, Maphumulo: Repairs and Renovations to Storm Damage

1. The notification to commence with construction work made to the Provincial Director of Labour using Annexure 2. *(Filled in only to be submitted on approval of the Safety Plan)*
2. Letter of Good Standing with Compensation Commissioner or Compensation insurer.
3. The Contractor's Health, Safety & Environmental Policy, signed by the chief executive officer, which outlines the Contractor's OHSE compliance objectives and how they will be achieved.
4. Pre-Construction risk assessment.
5. Fall Protection Plan.
6. Relevant checklists and registers.
7. Site specific OHSE Organogram
8. Preliminary Induction Program
9. Demolition Plan
10. Environmental Management Plan
    10.1.1. DOL Registered Asbestos Contractor to remove and dispose asbestos.
11. Proof of competency for the following legal appointees;

    11.1. Construction Manager – *Detailed CV reflecting qualification, relevant experience and references from previous clients.*

    11.2. Construction Supervisor - *Detailed CV reflecting qualification, relevant experience and references from previous clients.*

    11.3. Assistant Construction Supervisor - *Detailed CV reflecting qualification, relevant experience and references from previous clients.*

    11.4. Construction H&S Officer – *SACPCMP certificate*

    11.5. Risk Assessor – *SAMTRAC or equivalent*

    11.6. Fall Protection Planner - *SAMTRAC or equivalent*

    11.7. Demolition work inspector – *Registered Engineer or Technologist*

    11.8. Electrician – *wireman's licence*

    11.9. COVID-19 Compliance Officer

Legal appointments to be appointed	
Prior Site Handover	**After Site Handover on commencement with Construction work**
• 16.2 • Construction Manager • Construction Work Supervisor • Assistant Construction Work Supervisors *(Necessity to be determined)* • Construction H&S Officer • Risk Assessor • Fall Protection Planner • Incident / Accident Investigator • DoL Registered Asbestos Contractor • Electrician • COVID-19 Compliance Officer	• Scaffold Erectors • Scaffold Inspectors • Excavation inspector • Demolition Work Supervisor • Bulk Mixing Plant Supervisor • Explosive actuated fastening device controller • First Aider • SHE Representative • Ladder Inspector • Emergency co-ordinator • Fire Marshalls • Fire team members • Portable Electrical tool inspector • Hand tools inspector • Housekeeping inspector • Stacking and storage inspector • Lifting equipment inspector • Temporary electrical installation inspector • Temporary works inspector • Mobile plant Operator • Flammable liquids Storage Inspector • Hazardous substance storage inspector

Annexure B

Client Specific Requirements

Items	Client Specific Requirements
Site Office location	• The location of the site office should be in an area that will not require visitors to pass through or enter area where construction work is active and will not require the re-location of the office as the project progresses.
Medical Certificates	• In compliance with the requirements of the Construction Regulations 2014 section 7(8) the Contractor must ensure that all of his employee's onsite have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.
Compliance with COVID-19 Regulations 2020 requirements	In compliance with the requirements of the **COVID-19 Regulations 2020,** the Businesses which are permitted to operate must - a) Designate a COVID -19 Compliance Officer who must oversee the – i. the implementation of the plan referred to in paragraph (b); and ii. adherence to the standards of hygiene and health protocols relating to COVID - 19 at the workplace; b) Develop a plan for the phased -in return of their employees to the workplace, prior to reopening the workplace for business. which plan must correspond to Annexure E and must be retained for inspection and must contain the following information: i. which employees are permitted to work; ii. what the plans for the phased -in return of their employees to the workplace are; iii. what health protocols are in place to protect employees from COVID-19; and iv. the details of the COVID -19 compliance officer; c) SHE Plan, Risk Assessment, Safety Induction and Toolbox Talk Training must reflect the COVID-19 requirements; and • Develop measures to ensure that the workplace meets the standards of health protocols, adequate space for employees and social distancing measures for the public and service providers, as required.
Compliance with Asbestos Regulations	• To comply with Asbestos Regulations as published in Government Notice No. R. 155 dated 10 February 2002. • Removal to be done by an accredited asbestos contractor • Proof of accreditation to be kept on site. • Medical fitness certificates to accordance to Asbestos Regulations • Proper signage to be displayed • Proof of safe systems of work and training (Wet method) • Disposal certificate. • Under no circumstances may asbestos be handed over to the community irrespective of shape or condition.
Appointment of a Part - Time Construction Health & Safety Officer	• Should the KZN DoPW or its Representative having considered the risks present and lack of compliance to the Occupational Health and Safety Act, Act 85 of 1993 and its applicable Regulations the KZN DoPW or its Representative may issue an instruction that a (Full / Part Time) Construction Health and Safety Officer) must be appointed, such a requirement will have to be met. • The appointed Construction Health and Safety Officer must be registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the Contract.
Public Safety	• When working in a occupied facility the contractors risk assessment and subsequent safe work method statement must take into consideration the negative effect the Contractors activities may have on the health and safety of the occupants of the facility and make provisions for the implementation of all reasonably practicable measures to ensure the health and safety of the occupants of the building.
Extreme weather conditions	• If the weather condition poses a threat to the health & safety of employees be it extreme heat, cold, lighting or any adverse weather condition appropriate safety

	measures have to be taken.
Change to scope of work	• Should there be changes to the original scope of work, the Principal Agent must inform appointed Construction Health and Safety Agent to effect changes to the OHSE Specification.
Safety Plan Submission	• The successful Tenderer must submit a copy of the detailed OHSE Plan for approval and keep the original for onsite use during construction. The principal Contractor will not be allowed to start site establishment before his/her SHE Plan has been approved in writing.
Bylaws	• The Principal Contractor must incorporate any aspects of the Local Municipal bylaws which affect the, Safety and Environmental wellbeing of the employees and the public into his/her OHSE Plan and ensure compliance to such bylaws.
Risk assessment for construction work	• To comply with CR (9) and to also address environmental issues *See the attached baseline risk assessment to be considered by both the designer and the principal contractor.*
Fall protection	• To comply with CR (10), • Edge protection and protection of floor openings need to be of such a manner as to properly protect employees from falling off elevated positions or falling into floor openings.
Structures	• To comply with CR (11)
Construction vehicles	• To comply with CR (23) and the following;
Electrical installations and machinery on construction sites	• To comply with **CR (24)**
Use and temporary storage of flammable liquids on construction sites.	• To comply with **CR (25)**
Water environments	• To comply with **CR (26)**
Housekeeping and general safeguarding on construction sites	• To comply with CR (27) and the following; • Contractor to designate areas for placing refuse and rubble prior to being removed from site • Contractor must implement a daily task site clean-up for all activities these should cover work areas, stairways, walkways etc. to free of any construction debris obstruction. • Refuse to be separated for recycling purposes • Hazardous materials such as asbestos may not be included in general rubble and need to be disposed of as per applicable legislative requirements.
Stacking and storage on construction sites	• To comply with CR (28).
Fire precautions on construction sites	• To comply with CR (29) and the following; • No smoking may be permitted on site except in designated smoking areas.
Construction employees' facilities	• To comply with CR (30) and the following; • Gender signs to be placed at appropriate locations • All welfare facilities to be kept in a hygienic condition at all times • Employees to be trained in good hygiene practices.
Public Safety & Signage	• The Principal Contractor engaged in construction work must ensure that each person working on or visiting a site, and the general public in the vicinity of the construction site, shall be made aware of the dangers likely to arise from onsite activities and the precautions to be observed to avoid or minimise those dangers. • Appropriate signage shall be posted at conspicuous points within and around the perimeter of the site. The steps to comply with this requirement must be outlined in the OHSE Plan. • The public or visitors may only be permitted on site if they go through an appropriate

	health and safety induction detailing hazards and risks they may be exposed to and what measures are in place to control these hazards and risks • The entire project site must be secured against unauthorized access and provided with appropriate warning signage. Where roadways or walkways must be encroached or closed due to work, adequate barriers shall be installed to safely redirect the flow of vehicles and pedestrians and protect them from construction activities. • Whenever it is necessary to maintain public use of work areas (such as sidewalks, ramps, entrances to buildings, corridors, or stairways), the public shall be protected with appropriate guardrails, barricades, temporary fences, overhead protection, or temporary partitions and hoarding. The public must also be adequately protected from any work created hazards, such as excavations. Appropriate warnings, signs, warning lights and instructional safety signs shall be conspicuously posted and placed where necessary. • The public must also be protected from falling debris and objects from the project site. Overhead protection shall be provided that will fully protect the public and be capable of withstanding the maximum forces that could be applied from potential falling objects. Special attention shall also be given to developing adequate means to protect against wind-blown debris and construction-related materials.
On Site Health and Safety Training & Induction	• The Principal Contractor shall ensure that all site personnel and visitors undergo a risk-specific health & safety induction training session before starting work or being permitted to enter the site. A record of attendance shall be kept in the health & safety file. • The Principal Contractor shall ensure that, on site periodic toolbox talks take place at least once per week. These talks should deal with risks relevant to the construction work at hand. A record of attendance shall be kept in the health & safety file. The above should also cover all sub-contractors that are onsite. • All Contractors have to comply with this minimum requirement. Environmental issues to be included in toolbox talks where required.
General Record Keeping	• The Principal Contractor and all Sub Contractors must keep and maintain Health and Safety records to demonstrate compliance with this Specification, The OHS Act 85 / 1993; and with the Construction Regulations of 2014. The Principal Contractor shall ensure that all records of incidents / accidents, training, inspections; audits, etc. are kept in a health & safety file held in the site office, which must be present on site at all times. The Principal Contractor must ensure that every Sub Contractor opens its own health & safety file, maintains the file and makes it available on request.
Health & Safety Audits, Monitoring and reporting	• The Client or its duly appointed Agent shall conduct monthly health & safety audits. The Principal Contractor is obligated to conduct similar audits on all Sub Contractors appointed by them at least once a month. Detailed audit reports must be presented and discussed at all levels of project management meetings and a copy of such audit will be provided to the Client or its duly appointed Agent within 7 working days of such audit. Copies of the Client's audit reports shall be kept in the Principal Contractors Health & Safety File.
Emergency Procedures	• The Principal Contractor shall submit a detailed Emergency Plan for approval by the Client prior to commencement on site. The plan shall detail the response procedure including the following key elements: 1. List of key competent personnel; 2. Details of emergency services; 3. Actions or steps to be taken in the event of the specific types of emergencies; 4. Information on hazardous material/situations.
First Aid Boxes and First Aid Equipment	• The appointed First Aider(s) to be in possession of a valid first aid training certificate Level 2. Valid certificates are to be kept in the Site Safety File. All Sub Contractors with more than 5 employees shall supply their own first aid box, except if otherwise agreed upon between Principal and Sub- Contractor in writing.
Accident / Incident Reporting and Investigation	• Injuries are to be categorised into Near miss, first aid, LTI, fatal etc. Fatal accidents to be reported in addition to applicable legislative requirements to the Client or its duly appointed Agent with immediate effect. The Principal Contractor must stipulate in its construction phase OHSE Plan how it will handle each of these categories. When reporting injuries to the Client, these categories shall be used. The Principal

	Contractor shall investigate all injuries, with a report being forwarded to the Client immediately. All Sub- Contractors have to report on the abovementioned categories of injuries to the Principal Contractor at least monthly. All categories of incidents/accidents must be in the Statistics Section of the Monthly Audit Reports, submitted to the Client or it's duly appointed Agent.
Hazards and Potential Situations	• The Principal Contractor shall immediately notify other Sub Contractors as well as the Client of any hazardous or potentially hazardous situations that may arise during performance of construction activities. • Should a hazardous situation require work stoppages, the work must be stopped and corrective steps taken such as the issue of Written Safe Work Procedures and the issue of Personal Protective Equipment.
Personal Protective Equipment (PPE) and Clothing	• The Principal Contractor must ensure that all workers are issued with the required PPE as required by the risks associated with the activities they perform. The minimum PPE to be worn on site will be Safety Shoes/Boots, Hard Hats, Overalls. No Visitors may enter the site without Safety Shoes/Boots and Hard hats. The Principal Contractor and all Sub Contractors shall make provision and keep adequate quantities of SABS approved PPE on site at all times. All employees issued with PPE to be trained in correct use, records of training and issue to be kept in the Site SHE File. Procedure to be in place to deal with: 1. Lost or stolen PPE; 2. Worn out or damaged PPE replacement; and 3. Employees not utilising PPE as required. The above procedure applies to Principal Contractors and their appointed Sub-Contractors, as they are all employers in their own right.
Speed Restrictions and Protections	Unless otherwise stipulated, the maximum speed limit on sites must be limited to 10 km/h. 1) Vehicle movement routes on site must be clearly indicated where applicable. 2) Signage to ensure the safe movement of vehicles on site, as well as to ensure the health and safety of all employees and visitors on site, must be displayed in strategic locations.
Hazardous Chemical Substances (HCS)	1) To comply with Hazardous Chemical Substances Regulations as published in Government Notice No. R. 1179 dated 25 August 1995. 2) In addition to the abovementioned, Material Safety Data Sheets must be kept on site for all materials, which may contain hazardous chemical substances.
Asbestos ***(Asbestos Material)***	To comply with Asbestos Regulations as published in Government Notice No. R. 155 dated 10 February 2002. ***Note:*** ***Proof (i.e. Asbestos Disposal Certificate and Bridge way Slip) of Asbestos waste disposal to be produced, and a copy to be submitted to OHS Section & Project Manager.***
Fire Extinguishers and Fire Fighting Equipment	1) The Principal Contractor and Sub-Contractors must allow for and provide adequate provision of regularly serviced temporary firefighting equipment located at strategic points on site, specific for the classes of fire likely to occur. 2) The appropriate notices and signs must be allowed for and be erected as required. 3) Contractors may not utilize fire protection equipment belonging to the Client without prior consent.
Ladders and Ladder Work	1) The Principal Contractor must allow for and ensure that all ladders are inspected at least monthly, are in a good safe working order, are the correct height for the task, extend at least 1m above the landing, are fastened and secured and are placed at a safe angle. 2) Records of inspections must be kept in a register on site.
General Machinery	To comply with Driven Machinery Regulations as published in Government Notice No. R. 1010 dated 18 July 2003.
Portable Electrical Tools	1) The Principal Contractor shall ensure that all electrical tools, electrical distribution

and Hand Tools	boards, extension leads, and plugs are kept in a safe working order. 2) The Principal Contractor shall ensure that all portable electrical Equipment, is clearly numbered, inspected by a Competent appointed person and records of such inspections to be kept on record in an appropriate register on the site SHE file. 3) The Principal Contractor shall allow for and ensure the following in relation to hand Tools: That a "Competent Person" undertakes routine inspections and records are kept on site. o That only authorized trained persons use the tools. o That safe working procedure applies. o That PPE is provided and used.
Adequate Lighting	All Contractors must allow for and ensure that adequate lighting is provided to allow for work to be carried out safely.
Transportation of Workers	1) In addition to CR 23 the following will apply The Principal Contractor and Sub-Contractors shall not: • Transport persons together with goods or tools unless there is an appropriate area or section of the vehicle in which to store such goods. • Transport persons on the back of trucks except if a proper canopy (properly covering the sides and top) has been provided with suitable seating areas. • Permit workers to stand or sit on the edge of the transporting vehicle. • Transport workers in LDVs unless they are closed / covered and have the correct number of seats for the passengers • No driver may transport more than six people on the back of a 1 Ton LDV and more than four passengers on the back of a ½ Ton LDV. 2) The driver of any LDV may not permit more than two passengers to occupy the cab of any LDV. 3) Drivers of such vehicles must have a valid driver's license for the code of vehicle being driven by them. 4) No servicing of vehicles will be permitted on a Construction Site. No Vehicles or machinery leaking oil will be permitted on site due to the risk posed to the environment. 5) Any oil or diesel spilled on site must be cleaned up as per accepted environmental practice. In the event that Earth Moving Machinery is present on site the following must be adhered to: • Drivers of vehicles must be instructed to avoid parking behind earth moving machinery in order to ensure that their vehicles are visible to the operators of earth moving machinery. • Right of way must be afforded to earth moving machinery at all times. • Vehicles must only be permitted to park, where possible, in designated areas.
Occupational Hygiene	1) Occupational exposure is a major problem and all Contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. 2) All Contractors must prevent inhalation, ingestion and absorption of any harmful chemical or biological agents. 3) Water to be utilized for drinking purposes may only be drawn from taps designated for drinking water purposes. Fire hydrants and fire hose reels may not be utilized for drinking water purposes.
Environmental Management	• The Principal Contractor and Sub-Contractors must comply with the requirements of NEMA Act No. 107 (*National Environmental Management Act No 107, 1998).* • The Principal Contractor must develop a waste management plan, implement and maintained it onsite. • Cement mixing to be done at a predetermined location on site which must include a solid, slab, and bunded edges to prevent runoff. • Contaminated run off water from the site must be treated such as to ensure that it

	does not pose a risk to the environment. • Any material which may have a harmful effect when disposed of by normal means must be disposed of in an appropriate manner to eliminate its harmful effect on the environment after disposal. • The Principal Contractor must allow for and ensure that adequate procedures are implemented and maintained to ensure that waste generated is placed in suitable receptacles and removed from the site promptly. • Plans to deal with spillages must be in place and maintained. • No waste materials (liquid or solid) may be disposed of in drains. • No burning of waste material may take place on site as such material being burned may result in pollution of the air or give off toxic vapours which could be harmful to the health of employees or any other person present on site.
Alcohol and other Drugs	• No alcohol and other drugs will be allowed on site without the express permission of the Principal Contractor • No person may be under the influence of alcohol or any other drugs while on the construction site. • Any person on the construction site who is on prescription drugs must inform his / her Employer accordingly and the Employer shall in turn report this to the Principal Contractor immediately. • Any person on the construction site who is suffering from any illness / condition that may have a negative effect on his/her safety performance must report this to his / her Employer, who in turn must report this to the Principal Contractor forthwith. • Any person on the construction site who is suspected of being under the influence of alcohol or other drugs must be removed from site immediately and be instructed to report back the next day for a preliminary inquiry. A full disciplinary procedure must be followed by the Contractor concerned and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

Covid-19 Site Management Safety Requirements

The KZN Department of Public Works has developed the COVID-19 site management guidelines to assist contractors in relation to managing and prevention of the Coronavirus Disease (COVID–19) on construction sites. The contractor as employer has an obligation to assist government in limiting the spread of COVID-19 on site. In view of the COVID-19 pandemic the contractor is mandated to continuously review and update the Risk Assessment and provide training to employees.

Contractors are advised to develop an emergency response plan in case someone displays signs of COVID-19 at the workplace (dry cough, fever, headache, shortness of breath). Allocate a room or area where someone who is feeling unwell or has symptoms can be safely isolated. Immediately stop all activities on site and contact the nearest health facility or the COVID-19 centre. If you are advice by the Department of Health to transport the worker to a health facility, you must have a plan for how they can be safely transported from there to a health facility. All activities on site must be ceased and all the details. A site emergency plan to dealing with COVID-19 must be conspicuously displayed onsite.

Onsite Record keeping and management requirements

Every employer (contractor) has an obligation to assist government in enabling contact tracing in the workplace. These obligations include the following measure:

- ✓ Contractors are advice to observe confidentiality of employee's details and medical results at all times.
- ✓ A register containing the details of employees, visitors and service providers that enter the site in a particular day to be kept in a secured environment only accessible to authorised personnel.
- ✓ The following details should be contained in the register, date, time (of entry and departure), name, surname, identity number, residential address, mobile number and next of kin details.
- ✓ All employees, service providers, sub-contractors, visitors and consultants must sign the register with the above details on entering the site.
- ✓ Adequately trained health and safety personnel, to perform daily workplace COVID-19 symptom screening.
- ✓ Provide compulsory medical screening equipment.
- ✓ Provide prescribed personal protective equipment (PPE) to all employees onsite.
- ✓ All personnel and visitor entering the site must be temperature screened with a laser temperature scanner and records must be kept of the site register. If the temperature is above 37.3 C or more, advice the individual to stay at home, self-isolate, and observe the symptoms. They should also telephone the nearest health facility or the COVI-19 centre; provide them details of their recent travel and symptoms.

Annexure D

Baseline Risk Assessment

Empungeni Primary School, Maphumulo: Repairs and Renovations to Storm Damage.

PLEASE NOTE THAT THIS IS A BASELINE RISK ASSESSMENT AND NOT A DETAILED RISK ASSESSMENT OF ALL ANTICIPATED ACTIVITIES ON SITE:

Main Activity	Sub Activity	Safety Risks	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
SITE ESTABLISHMENT	Identification of existing services *(i.e. water pipes, live electricity cables, sewer, etc.)*; etc.	Electrocution; multi-body burns; struck by tools; poisonous insects bites; etc.	Dust inhalation; body fatigue; heat exhaustion; etc.	Land Pollution from poor housekeeping	None	Safe systems of work; trainings; PPE; Good Housekeeping Practise; Supervision; etc.	**Contractor**
	Water & Electricity services provision *(i.e. electricity connections, etc.)*; etc.	Electrocution; multi-body burns; struck by tools; etc.	Dust inhalation; body fatigue; heat exhaustion; etc.	Land Pollution from poor housekeeping	Electrocution; dust inhalation; etc.	Safe systems of work; trainings; PPE; Good Housekeeping Practise; Supervision; etc.	**Contractor**
	Temporal fencing of active construction areas.	Cuts; abrasion; Trip & Falls; finger injuries; etc.	Back strain; dust inhalation; heat exhaustion; etc.	Littering from poor housekeeping	Trips & Falls; etc.	Safe systems of work; trainings; PPE; Good Housekeeping Practise; Supervision; etc.	**Contractor**
	Placement of site office & Construction Facilities *(i.e. toilets, changing areas, etc.)* on site.	Eye injuries; cuts; abrasion; Trip & Falls; finger injuries; etc.	Back strain; dust inhalation; heat exhaustion; etc.	Littering from poor housekeeping	Trips & Falls; etc.	Safe systems of work; trainings; PPE; Good Housekeeping Practise; Supervision; etc.	**Contractor**
	Vehicles entering & exiting a construction site	Death; serious multi-body injuries; nocked / run-over by construction vehicles; etc.	Dust inhalation; death; etc.	Petrol & Oil leaks spillages; etc.	Dust inhalation; etc.	Safe systems of work; trainings; PPE; Good Housekeeping Practise; Supervision; etc.	**Contractor**
	Moving and stacking of materials	Finger injuries; trip & falls; struck or bumped against any construction materials; etc.	Back strain; dust inhalation; etc.	Land pollution (from poor housekeeping)	none	Safe systems of work; trainings; PPE; Good Housekeeping Practise; Supervision; etc.	**Contractor**

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
REMOVAL OF EXISTING PURLINS , BATTERNS, ETC.	Removal of old purlins	Falls at height; Struck by Tools; Cuts; Abrasion; Hands caught between; Trips & Falls; Head Injury; etc.	Back strain; Heat Exhaustion; Dust Inhalation; Muscular strains; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; Practise of Proper Manual Lifting technique; etc.	**Contractor**
	Fitting of battens	Cuts; Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Back strain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; etc.	**Contractor**
	Securing insulation	Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; etc.	**Contractor**
	Fitting of roof sheets	Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Muscular strain; Back Pain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing PPE; Use Proper Manual Lifting technique; etc.	**Contractor**

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
REMOVAL OF GUTTERS, DOWNPIPES AND FASCIA BOARDS	Removal of old existing gutters, down pipes and facia boards	Falls from heights; strike by falling materials; Cuts; Trip & Fall; Head Injury; etc.	Back strain; Dust Inhalation; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Safe systems of work; Trainings; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Lifting off position	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	None	None	Trainings; Practise SWP; Good Housekeeping; Safe use of Hand Tools; Wearing required PPE; Supervision; Practise of Proper Manual Lifting technique; etc.	**Contractor**
REMOVING EAVES SOFFFIT COVERINGS	Removing Eaves Soffit	Falls at height; Struck by Tools; Cuts; Abrasion; Hands caught between; Trips & Falls; Head Injury; etc.	Back strain; Heat Exhaustion; Dust Inhalation; Muscular strains; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; Practise of Proper Manual Lifting technique; etc.	**Contractor**
ROOF COVERING: Installation of Profiled Fibre-Cement Roof Sheeting & Accessories *(i.e. Roof Trusses Timber Purlins, etc.)*	Installation of timber roof Trusses	Cuts; Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Back strain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; etc.	**Contractor**
	Fitting of battens	Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; etc.	**Contractor**
	Fitting of roof sheets *(i.e. Profiled Fibre-Cement & Metal Roof Sheeting)*	Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Muscular strain; Back Pain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing PPE; Use Proper Manual Lifting technique; etc.	**Contractor**

	Installation of Roof Accessories *(i.e. Ridge capping in pitches, Eaves fillers, etc.)*	Cuts; Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Back strain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing PPE; Use Proper Manual Lifting technique; etc.	**Contractor**
CARPENTRY & JOINERY	Plate nails timber roof truss, sawn soft wood, ceiling	Falls; Cuts; Trip & Falls; Eye Injury; Finger Injury; Struck by tool; etc.	Dust Inhalation; Muscular Strain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; etc.	**Contractor**
FITTING GUTTERS, DOWNPIPES AND FASCIA BOARDS	Securing Hangers	Cuts; Laceration; Electrical shocks; Trips &Falls; Eye Injury; Abrasion; etc.	Dust Inhalation; Heat Exhaustion; etc.	Littering due to poor housekeeping	None	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Placement of gutters and fascia boards	Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Muscular strain; Back Pain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing PPE; Use Proper Manual Lifting technique; etc.	**Contractor**
	Fitting down pipes and brackets	Cuts; Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Back strain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing PPE; Use Proper Manual Lifting technique; etc.	**Contractor**
CEILINGS AND CORNICE	Securing ceiling sheets	Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing required PPE; etc.	**Contractor**

	Nailing Up Ceiling, *(Including: nailing up ceiling, Gypsum Plaster Board Cornices, Trapdoors, etc.)*	Abrasion; Trips & Falls; Falls from height; Struck by tool; Bruises; Eye Injury; Laceration; Electrical shocks; etc.	Back strain; Electrocution; Muscular strain; Dust Inhalation; etc.	Littering from poor housekeeping; etc.	None	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Fitting cornices	Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Muscular strain; Back Pain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing PPE; Use Proper Manual Lifting technique; etc.	**Contractor**
	Skim filling and finishing	Cuts; Falls at height; Struck by Tools; Hands caught between; Trips & Falls; Head Injury; etc.	Back strain; Heat Exhaustion; etc.	Littering from poor housekeeping; etc.	None	Trainings to employees; Practise SWP; Safe use of hand tools; Wearing PPE; Use Proper Manual Lifting technique; Good Housekeeping; etc.	**Contractor**
PAINTWORK (INTERNAL & EXTERNAL WALLS)	Preparatory surface & painting on previously painted plastered surface	Slip & Fall; Bruises; Eye Injury; Abrasion; Trips & Falls; etc.	Dust Inhalation; Muscular Pain; Heat Exhaustion; Paint & Thinners Vapours Inhalation; etc.	Poor Housekeeping; Paint & Thinners; Spillage; etc.	Exposure to paint vapours	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; Use of respirators; etc.	**Contractor**
	Preparatory surface & painting on previously painted metal surface	Slip & Fall; Bruises; Eye Injury; Abrasion; Trips & Falls; etc.	Dust Inhalation; Muscular Pain; Heat Exhaustion; Paint & Thinners Vapours Inhalation; etc.	Poor Housekeeping; Paint & Thinners; Spillage; etc.	Exposure to paint vapours	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; Use of respirators; etc.	**Contractor**
	Preparatory surface & painting on previously painted wood surface	Slip & Fall; Bruises; Eye Injury; Abrasion; Trips & Falls; etc.	Dust Inhalation; Muscular Pain; Heat Exhaustion; Paint & Thinners Vapours Inhalation; etc.	Poor Housekeeping; Paint & Thinners; Spillage; etc.	Exposure to paint vapours	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; Use of respirators; etc.	**Contractor**

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
ELECTRICAL INSTALLATION	Wall Chasing	Electric burns; eye injuries from flying wall particles; etc.	Burns; Electrocution; dust inhalation; exposure to noise; etc.	Littering from poor housekeeping; etc.	None	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Fitting of plug boxes, junction boxes ,Distribution boards	Skin Burns; Cuts; Bruises; Abrasions; Trips & Falls; falls from ladders; etc.	Electrocution; Dust Inhalation; Heat Exhaustion; Muscular pains; etc.	Littering from poor housekeeping; etc.	None	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Wiring, PVC Conduit, light switches, socket outlets, etc.	Cuts & abrasion; trips & falls; Electric shock; Electrocution; etc.	Back strain; dust inhalation; Electrocution; etc.	None	Electrocution	Lock-out procedure; Issuing of CoC before use; Registered Electrician; etc.	**Contractor**
	Low Voltage Cabling underground	Electric burns; eye injuries from flying wall particles; etc.	Burns; Electrocution; dust inhalation; exposure to noise; etc.	Littering from poor housekeeping; etc.	None	Safe Work Procedure; Training; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Lights and Photo Electronic Control Installations	Cuts & abrasion; trips & falls; Electric shock; Electrocution; etc.	Back strain; dust inhalation; Electrocution; etc.	None	Electrocution	Lock-out procedure, issuing of CoC before use. a registered person as per EIR	**Contractor & Consultant**
WASTE REMOVAL *(with Asbestos waste)*	**Waste Removal** *(Asbestos material to be removed by an Hazardous Chemical Waste Truck and be disposed to the Hazardous Chemical Material Landfill Site)*	Serious Body Injuries; Death; Run-over by Truck; Truck colliding with other vehicles; etc.	Dust Inhalation; Death; Heat Exhaustion; Asbestos Inhalation; etc.	Petrol & Oil leakages & spillages; Asbestos Spillages; etc.	Exposed to intermittent noise levels; General Dust & Asbestos particles Inhalation; etc.	Trainings; Practise SWP; Pre-Use Inspection; Safe Tools; Display proper signage; Wearing required PPE *(i.e. Overalls, hard hats, safety shoes, goggles, etc.)*; etc.	**Contractor**

Onsite General Construction Activities					
Activity	**Risk to safety**	**Risk to Health**	**Risk to Environment**	**Risk to Public Safety**	**Control Measures**
Drilling	Entanglement, struck by flying objects, electricity, hazardous substance dust , noise	Electrocution, dust inhalation, noise induced hearing loss, muscle strain, foreign objects in eyes	Contamination of natural resources (spillages)	dust , noise	Safe systems of work ,Training, PPE, barricading, Supervision etc.
Sanding	Grazing, wrist strain, bumping	Dust inhalation, dust in eyes, minor abrasions	none	dust nuisance	Safe systems of work ,PPE, Housekeeping, barricading, Supervision etc.
Painting	Bumping against, wrist strain	Inhalation of vapours, paint in eyes , minor abrasions	Contamination of natural resources (spillages)	None	Safe systems of work ,PPE, ventilation of area, good housekeeping
Grinding	Electrocution, entanglement,, tripping hazards, struck by flying materials etc.	Noise induced hearing loss, cuts, loss of limbs, electrocution	none	Noise, dust etc.	Safe systems of work ,Wet cutting, barricading, temporary guarding, signage Supervision ,etc.
Breaking of concrete	Struck by flying particles, impact hazards, vibration, electrocution etc.	Noise induced hearing loss ,dust inhalation , particles in eye, electrocution , etc.	None	Noise, dust etc.	Safe Systems of work , barricading, temporary guarding, signage Supervision etc.
Cement Mixing	Struck by ,sharp edges, poor working position , hazardous substances	Inhalation of cement dust, back strain , dermatitis	Contamination of natural resources (spillages)	Noise, dust	Safe Systems of work ,PPE, Housekeeping, barricading, bunding, Supervision etc.
Plastering	Grazing abrasions, bumping against, struck by flying/falling objects, slipping hazards, hazardous substances etc.	Minor bruising, particles in eyes, dust inhalation, hazardous substances exposure effects	Contamination of natural resources	None	Safe systems of work, training , PPE Supervision ,etc.
General brickwork	Abrasive surfaces, hazardous substances , straining of muscles	Cut and abrasions, crushing injuries etc.	None	dust	Safe systems of work, barricading, signage PPE ,Supervision etc.
Loading and unloading by hand	Bumping against edges , Hands caught between , Sharp edges, muscle strain	Back strain, exhaustion, bruising, hand injuries,	None	None	Safe systems of work, PPE, Training in correct lifting procedures , Supervision etc.

Ladder use	Incorrect positioning, overreach , Overhead hazards , dropping of tools from ladder , Falls	Broken bones , death, electrocution	None	None	Safe systems of work , PPE usage, Supervision etc.
Extension cords	Electricity , tripping hazards	Electrocution , fractures etc.	none	None	Safe systems of work, PPE, Supervision etc.
Hand tools	Tripping, struck by, bumping against, abrasions, sharp edges, caught between surfaces, flying metal particles etc.	Cuts ,Bruising ,Foreign material in eyes	none	None	Safe systems of work, PPE, Supervision etc.
Scaffolding erection, dismantling	Falls from height, dropping of items, sharp edges, scaffolding collapse, etc.	Back strain, bruising, cuts, abrasions, broken bones, death	none	None	Safe system of work, use of fall arrest equip, erection of safe scaffolding, Supervision, etc.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

Project Name:	**eThekwini Region: Empungeni primary school: Storm Damage Phase 16**

Health and Safety Bill Of Quantities

Health & Safety Bill of Quantities					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Hi Visibility conti-suit	Annual/ As required or needing replacing			R-
2	Hi- Visibility T-Shirts	Annual/ As required or needing replacing			R-
3	Steel Toe-Capped Safety Boots	Annual/ As required or needing replacing			R-
4	Hi-Visibility Safety Vest	Annual/ As required or needing replacing			R-
5	SABS Approved Hard Hat	Annual/ As required or needing replacing			R-
6	Hi-Visibility Rain Suits	Annual/ As required or needing replacing			R-
7	Steel Toe Capped Gumboots	Annual/ As required or needing replacing			R-
8	Dust Masks (Stipulate FFP):	Annual/ As required or needing replacing			R-
9	Safety Glasses	Annual/ As required or needing replacing			R-
10	Gloves (Stipulate Type):	Annual/ As required or needing replacing			R-
11	Safety Harnesses	Annual/ As required or needing replacing			R-
12	Other:				R-
13	Trainings:				R-
14	Safety Representative Training	Once off			R-
15	First Aider Training	Once off			R-
16	Fire Fighting Training	Once off			R-
17	Legal liability	Once off			R-
18	H&S Salaries:				R-
19	CHS Manager	Monthly			R-
20	CHS Officer	Monthly			R-
21	Other:				R-
22	Specific H&S Items:				R-
23	Medicals	Pre-placement, Annual & Exit			R-
24	Spill Kit	Once off			R-
25	Accommodation of Traffic as per Client tender BOQ	Once off			R-
26	Inductions	Annual			R-
27	First Aid Kits	Once off			R-
28	Fire Extinguishers	Once off			R-
29	Ablutions	Once off			R-
30	Barrier Netting	Once off			R-
31	Appointment of AIA for asbestos	Not applicable			R-
32	Asbestos Management plan	Not applicable			R-
33	Asbestos removal by competent asbestos contractor	Not applicable			R-
34	Disposal of products containing asbestos	Not applicable			R-
35	Disposal of hazardous chemicals and contaminated soil	Once off			R-
36	Safety Signage:				R-
37	Construction Boards	Once off			R-
38	Fire Extinguisher	Once off			R-
39	Directional signs	Once off			R-
40	Emergency Assembly point	Once off			R-
41	No Smoking	Once off			R-
42	Ladies and Men's Toilets (Gender sign)	Once off			R-
43	No Naked Flames	Once off			R-
44	Other:				R-
45					
46					

_____ .....

Principal Contractor **CHS**

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

WAIVER OF CONTRACTOR'S LIEN

WAIVER OF CONTRACTOR'S LIEN

DEFINITIONS

Contractor: _____

Employer: Head: Public Works (KZN Department of Public Works: Province of KwaZulu-Natal)

Agreement: GCC FOR CONSTRUCTION WORKS - SECOND EDITION 2010

Works (description): **eThekwini Region: Empungeni primary school: Storm Damage Phase 16**

Site: Region: Ethekwini , District Municipality: Ilembe District Municipality, Local Municipality: Ndwedwe, Ward Nr 52903014.

AGREEMENT

The Contractor waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works to be executed on the Site

Thus done and signed at _____ on _____
[Date]

_____ _____
Name of signatory Capacity of signatory

_____ _____
As witness For and on behalf of the contractor who by signature hereof warrants authorisation hereto

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

ADDITIONAL SPECIFICATION - EPWP

ADDITIONAL SPECIFICATION - EPWP

SL **EMPLOYMENT AND TRAINING OF EPWP BENEFICIARY ON THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) Infrastructure Projects:**

CONTENTS

SL 01 SCOPE

This project is part of the Expanded Public Works Programme aims to train young people and provide them with practical work experience as part of this programme. Youth aged between 18 and 35 will be recruited and trained in skills relevant to the work to be done on this project. These youth will have to be employed by the contractor as part of this project so that they can gain their work experience on these projects. The training of the youth will be coordinated and implemented by a separate service provider. This service provider will provide the contractor with a list of all the youth and the training each of these youth have received. The Contractor will be required to employ all of these youth for a minimum period of 6 months. Furthermore the Contractor will be required to supervise these youth to ensure that the work they perform is of the required standard. If necessary the contractor's staff will be required to assist and mentor the youth to ensure that they are able to perform the type of work they need to do to the satisfactory standards required. The contractor will not be required to employ all youth in the programme at the same time, but may rotate the youth on the project, as long as all youth are employed for the minimum duration stated earlier.

This specification contains the standard terms and conditions for workers employed in elementary occupations and trained on a Expanded Public Works Programme (EPWP) for the Infrastructure Programme.

SL 02 TERMINOLOGY AND DEFINITIONS

SL 02.01 TERMINOLOGY

(a) EPWP — The Code of Good Practice for Expanded Public Works Programmes, which has been gazetted by the Department of Labour, and which provides for special conditions of employment for these EPWP projects. In terms of the Code of Good Practice, the workers on these projects are entitled to formal training, which will be provided by training providers appointed (and funded) by the Department of Labour. For projects of up to six months in duration, this training will cover life-skills and information about other education, training and employment opportunities.

(b) EPWP — Expanded Public Works Programme, a National Programme of the government of South Africa, approved by Cabinet.

(c) UYF — Umsobumvu Youth Fund.

(d) DOL — Department of Labour.

SL 02.02 DEFINITIONS

(a) "employer" means the contractor or any party employing the worker / beneficiary under the EPWP Programme.

(b) "client" means the Department of Public Works.

(c) " worker / trainee" means any person working or training in an elementary occupation on a EPWP.

SL 03 APPLICABLE LABOUR LAWS

In line with the Expanded Public Works Programme (EPWP) policies, the Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of labour in government Notice No. R63 of 25 January 2002, of which extracts have been reproduced below in clauses SL 04 shall apply to works described in the scope of work and which are undertaken by unskilled or semi-skilled workers. The Code of Good Practise for Employment and Conditions of Work for Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R64 of 25 January 2002 shall apply to works described in the scope of work and which unskilled or semi-skilled workers undertake.

SI 04 EXTRACTS FROM MINISTERIAL DETERMINATION REGARDING EPWP

SL 04.01 DEFINITIONS

(a) "department" means any department of the State, implementing agent or contractor;

(b) "employer" means any department that hires workers to work in elementary occupations on a EPWP;

(c) "worker" means any person working in an elementary occupation on a EPWP;

(d) "elementary occupation" means any occupation involving unskilled or semi-skilled work;

(e) "management" means any person employed by a department or implementing agency to administer or execute a EPWP;

(f) "task" means a fixed quantity of work;

(g) "task-based work" means work in which a worker is paid a fixed rate for performing a task;

(h) "task-rated worker" means a worker paid on the basis of the number of tasks completed;

(i) "time-rated worker" means a worker paid on the basis of the length of time worked

(j) "Service Provider" means the consultant appointed by Department to coordinate and arrange the employment and training of labour on EPWP infrastructure projects.

SL 04.02 TERMS OF WORK

(a) Workers on a EPWP are employed on a temporary basis.

(b) A worker may NOT be employed for longer than 24 months in any five-year cycle on a EPWP.

(c) Employment on a EPWP does not qualify as employment and a worker so employed does not have to register as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

SL 04.03 NORMAL HOURS OF WORK

(a) An employer may not set tasks or hours of work that require a worker to work–

(i) more than forty hours in any week
(ii) on more than five days in any week; and
(iii) for more than eight hours on any day.

(b) An employer and a worker may agree that the worker will work four days per week. The worker may then work up to ten hours per day.

(c) A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks (based on a 40-hour week) allocated to him.

Every work is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next dav.

SL 04.04 MEAL BREAKS

(a) A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

(b) An employer and worker may agree on longer meal breaks.

(c) A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

SL 04.05 SPECIAL CONDITIONS FOR SECURITY GUARDS

(a) A security guard may work up to 55 hours per week and up to eleven hours per day.

(b) A security guard who works more than ten hours per day must have a meal break of at least one hour duration or two breaks of at least 30 minutes duration each.

SL 04.06 DAILY REST PERIOD

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

SL 04.07 WEEKLY REST PERIOD

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

SL 04.08 WORK ON SUNDAYS AND PUBLIC HOLIDAYS

(a) A worker may only work on a Sunday or public holiday to perform emergency or security work.

(b) Work on Sundays is paid at the ordinary rate of pay.

(c) A task-rated worker who works on a public holiday must be paid –
  (i) the worker's daily task rate, if the worker works for less than four hours;
  (ii) double the worker's daily task rate, if the worker works for more than four hours.

(d) A time-rated worker who works on a public holiday must be paid –
  (i) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
  (ii) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

SL 04.09 SICK LEAVE

(a) Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.

(b) A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a

(c) A worker may accumulate a maximum of twelve days' sick leave in a year.

(d) Accumulated sick-leave may not be transferred from one contract to another contract.

(e) An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

(f) An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

(g) An employer must pay a worker sick pay on the worker's usual payday.

(h) Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –

(i) absent from work for more than two consecutive days; or

(ii) absent from work on more than two occasions in any eight-week period.

(i) A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

(j) A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

SL 04.10 MATERNITY LEAVE

(a) A worker may take up to four consecutive months' unpaid maternity leave.

(b) A worker is not entitled to any payment or employment-related benefits during maternity leave.

(c) A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

(d) A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

(e) A worker may begin maternity leave –

(i) four weeks before the expected date of birth; or

(ii) on an earlier date –

(1) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or

(2) if agreed to between employer and worker; or

(iii) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

(f) A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

(g) A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the EPWP on which she was employed has ended.

SL 04.11 FAMILY RESPONSIBILITY LEAVE

(a) Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -

(i) when the employee's child is born;

(ii) when the employee's child is sick;

(iii) in the event of the death of –

(1) the employee's spouse or life partner

(2) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling

SL 04.12 STATEMENT OF CONDITIONS

(a) An employer must give a worker a statement containing the following details at the start of employment –

(i) the employer's name and address and the name of the EPWP;

(ii) the tasks or job that the worker is to perform;

(iii) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;

(iv) the worker's rate of pay and how this is to be calculated;

(v) the training that the worker may be entitled to receive during the EPWP.

(b) An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

(c) An employer must supply each worker with a copy of the relevant conditions of employment contained in this specification.

(d) An employer must enter into a formal contract of employment with each employee. A copy of a pro-forma is attached at the end of this specification.

SL 04.13 KEEPING RECORDS

(a) Every employer must keep a written record of at least the following –

(i) the worker's name and position;

(ii) in the case of a task-rated worker, the number of tasks completed by the worker;

(iii) in the case of a time-rated worker, the time worked by the worker;

(iv) payments made to each worker.

(b) The employer must keep this record for a period of at least three years after the completion of the EPWP.

SL 04.14 PAYMENT

(a) A task-rated worker will only be paid for tasks that have been completed.

(b) An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer. Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

(c) A time-rated worker will be paid at the end of each month and payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

(d) Payment in cash or by cheque must take place –

(i) at the workplace or at a place agreed to by at least 75% of the workers; and

(ii) during the worker's working hours or within fifteen minutes of the start or finish of work;

(e) All payments must be enclosed in a sealed envelope which becomes the property of the worker.

(f) An employer must give a worker the following information in writing –

(i) the period for which payment is made;

(ii) the number of tasks completed or hours worked;

(iii) the worker's earnings;

(iv) any money deducted from the payment;

(v) the actual amount paid to the worker.

(g) If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

(h) If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

SL 04.15 DEDUCTIONS

(a) An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

(b) An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

(c) An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

(d) An employer may not require or allow a worker to –

(i) repay any payment except an overpayment previously made by the employer by mistake;

(ii) state that the worker received a greater amount of money than the employer actually paid to the worker; or

(iii) pay the employer or any other person for having been employed.

SL 04.16 HEALTH AND SAFETY

(a) Employers must take all reasonable steps to ensure that the working environment is healthy and safe and that all legal requirements regarding health and safety are strictly adhered to.

(b) A worker must:

(i) work in a way that does not endanger his/her health and safety or that of any other person;

(ii) obey any health and safety instruction;

(iii) obey all health and safety rules;

(iv) use any personal protective equipment or clothing issued by the employer;

(v) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

SL 04.17 COMPENSATION FOR INJURIES AND DISEASES

(a) It is the responsibility of employers to arrange for all persons employed on a EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

(b) A worker must report any work-related injury or occupational disease to their employer or manager.

(c) The employer must report the accident or disease to the Compensation Commissioner.

(d) An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

SL 04.18 TERMINATION

(a) The employer may terminate the employment of a worker provided he has a valid reason and after following existing termination procedures.

(b) A worker will not receive severance pay on termination.

(c) A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

(d) A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

(e) A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

SL 04.19 CERTIFICATE OF SERVICE

(a) On termination of employment, a worker is entitled to a certificate stating –

(i) the worker's full name;
(ii) the name and address of the employer;
(iii) the SPWP on which the worker worked;
(iv) the work performed by the worker;
(v) any training received by the worker as part of the EPWP;
(vi) the period for which the worker worked on the EPWP;
(vii) any other information agreed on by the employer and worker.

SL 05 EMPLOYER'S RESPONSIBILITIES

The employer shall adhere to the conditions of employment as stipulated in the *Code of Good Practice for Employment and Conditions of Work for Expanded Public Works Programmes*. Over and above the conditions stipulated above, he shall be responsible to:

(a) formulate and design a contract between himself/ herself and each of the recruited EPWP beneficiary, ensuring that the contract does not contravene any of the Acts stipulated in South African Law, e.g. Basic Conditions of Employment Act, etc. (A copy of a pro-forma contract is attached at the end of this specification);

(b) screen and select suitable candidates for employment from the priority list of EPWP beneficiary provided by the Umsobumvu Youth Fund (UYF);

(c) ensure that the recruited EPWP beneficiary are made available to receive basic life skills training which will be conducted and paid for by the Umsobumvu Youth Fund;

(d) ensure that all EPWP beneficiary receive instruction on safety on site prior to them commencing with work on site;

(e) ensure that all EPWP beneficiary are covered under workmen's compensation for as long as they are contracted to the contractor. Payment to the Compensation Commissioner shall be the responsibility of the contractor;

(f) assist in the identification and assessment of potential EPWP beneficiary to undergo advanced technical training in respective trades;

(g) test and implement strict quality control and to ensure that the health and safety regulations are adhered to;

(h) provide all EPWP beneficiary with the necessary protective clothing as required by law for the specific trades that they are involved in.

(i) provide overall supervision and day-to-day management of EPWP beneficiary and/or sub-contractors; and

(j) ensure that all EPWP beneficiary are paid their wages on time through a pre-agreed payment method as stipulated in the contract with the EPWP beneficiary.

SL 06 PLACEMENT OF RECRUITED EPWP BENEFICIARY

Employers will be contractually obliged to:

(a) employ EPWP beneficiary from targeted social groups from the priority list provided by the Service Provider/ Umsobumvu Youth Fund.

(b) facilitate on-the-job training and skills development programmes for the EPWP beneficiary;

(c) achieve the following minimum employment targets:

  (i) 55% people between the ages of 18 and 35

  (ii) 55% women;

  (iii) 2% people with disabilities.

(d) brief EPWP beneficiary on the conditions of employment as specified in sub clause SL 04.09 above;

(e) enter into a contract with each EPWP beneficiary, which contract will form part of the Employment Agreement;

(f) allow EPWP beneficiary the opportunity to attend life skills training through DOL. This shall be arranged at the beginning of the contract;

(g) ensure that payments to EPWP beneficiary are made as set out in sub clauses SL 04.14 and SL 04.15 above.

(h) set up of personal profile files as prescribed by EPWP beneficiary and as set out in sub clause SL 04.13 above.

(i) in addition to (h)
- a copy of the I.D;
- qualifications;
- career progress;
- EPWP Employment Agreement, and
- list of small trade tools;

must be included in the EPWP beneficiary's personal profile file.

SL 07 TRAINING OF EPWP BENEFICIARY

Three types of training are applicable, namely

- Life skills;
- On the job training and
- Technical Skills training.

Training will be implemented by training instructors accredited by DOL and/or CETA :

- EPWP beneficiary shall be employed on the projects for an average of 6 months.
- EPWP beneficiary shall be deployed on projects in the vicinity of their homes. The same arrangements as for other workers regarding accommodation, subsistence and travel shall be applicable to EPWP beneficiary.

(a) Life skills training

All EPWP beneficiary are entitled to undergo life skills training. Training of this module will be flexible enough to meet the needs of the employer. Training should take place immediately after site hand-over and during the period of site establishment and pre-planning before actual construction starts, alternatively this will be spread over the duration of the contract period. The contractor will be required to work closely with the person to schedule the training sessions so that the timing of the training is aligned with the contractors work schedule and his demand for workers.

(b) On-the job training

The Employer shall provide EPWP beneficiary with on-the-job training to enable them to fulfil their employment requirements. The employer shall also be expected to closely monitor the job performance of EPWP beneficiary and shall identify potential EPWP beneficiary for skills development programmes.

(c) Technical skills training
The Employer shall assist in identifying EPWP beneficiary for further training. These EPWP beneficiary will undergo further technical training to prepare them for opportunities as semi-skilled labourers.

Such training will comprise of an off-site theoretical component and practical training on-site. The contractor will be responsible for on-site practical work under his supervision. EPWP beneficiary who graduate from the first phase of the training programme will be identified and given opportunities to register for skills development programmes. These can ultimately result in a accredited qualification. The programme will consist of theoretical instruction away from the construction site as well as on-site practical work under the supervision of the employer. Candidates will be entitled to employment to complete all training modules.

SL 08 BENEFICIARY (EPWP BENEFICIARY) SELECTION CRITERIA

SL 08.01 PREAMBLE

The *Code of Good Practise for Employment and Conditions of Work for Expanded Public Works Programmes* encourages:

- optimal use of locally-based labour in a Expanded Public Works Programme (EPWP);
- a focus on targeted groups which consist of namely youth, consisting of women, female-headed households, disabled and households coping with HIV/AIDS; and
- the empowerment of individuals and communities engaged in a SPWP through the provision of training.

SL 08.02 BENEFICIARY (EPWP BENEFICIARY) SELECTION CRITERIA

(a) The EPWP beneficiary of the programmes should preferably be non-working individuals from the most vulnerable sections of disadvantaged communities who do not receive any social security pension income. The local community must, through all structures available, be informed of and consulted about the establishment of any EPWP

(b) In order to spread the benefit as broadly as possible in the community, a maximum of one person per household should be employed, taking local circumstances into account.

(c) Skilled artisans from other areas may be employed if they have skills that are required for a project and there are not enough persons in the local communities who have those skills or who could undergo appropriate skills training. However, this should not result in more than 20% of persons working on a programme not being from local communities.

(d) Programmes should set participation targets for employment with respect to youth, single male- and female-headed households, women, people with disabilities, households coping with HIV/AIDS, people who have never worked, and those in long-term unemployment.

(e) The proposed targets as set out in sub clause SL 06 (c)

- 55% youth from 18 to 35 years of age;
- 55% women;
- 2% disabled.

SL 09 CONTRACTUAL OBLIGATIONS IN RELATION TO YOUTH LABOUR

The EPWP beneficiary to be employed in the programme (EPWP) shall be directly contracted to the employer. Over and above the construction and project management responsibilities, the employer will be expected to perform the tasks and responsibilities as set out in clause SL 05 above.

SL 10 PROVINCIAL RATES OF PAY

It is stipulated that youth workers on the EPWP receive a minimum of R 1 000 per month whilst working and R 600 per month whilst on training in ALL provinces. Should EPWP beneficiary be attending training whilst employed by the contractor, the contractor will still be responsible for payment to the EPWP beneficiary whilst at training.

SL 11 MEASUREMENTS AND PAYMENT

The number of EPWP beneficiary specified for this contract that will receive life skills training is 50 and technical training is 50

SL 11.01 PAYMENT FOR TRAINING OF EPWP BENEFICIARY
(TARGET:- 50 EPWP BENEFICIARY)

SL 11.01.01 Skills development and Technical training for EPWP beneficiary for an average of 10 days .....(Prov.Sum).....Unit: R/EPWP beneficiary

The above item is only applicable if DoL does not fund the Technical Training PRIOR to site handover.

SL 11.01.02 Penalty due to not meeting the target as in SL 11.01.01.....Unit: EPWP beneficiary

LESS R 2000 per EPWP beneficiary

SL 11.02 PAYMENT FOR TRAVELLING AND ACCOMMODATION DURING OFF-SITE TRAINING

SL 11.02.01 Life skills training for 26 days:

01 Travelling (based on 50 km/EPWP beneficiary) .....Unit: km

02 Accommodation.....(Prov.Sum).....Unit: R/EPWP beneficiary

03 Profit and attendance..... Unit: %

SL 11.02.02 Skilled development and Technical training:

01 Travelling (based on 50 km/EPWP beneficiary).....Unit: km

02 Accommodation.....(Prov.Sum)....Unit: R/EPWP beneficiary

03 Profit and attendance ..... Unit: %

The units of measurement for sub items SL 11.02.01 (01) and SL 11.02.02 (01) above shall be the distance travelled in km by the EPWP beneficiary trained off site. The tendered rate shall include full compensation to safely transport the youth workers to and from the training venue/s.

The unit of measurement for sub items SL 11.02.01 (02) and SL 11.02.02 (02) above shall be the amounts in Rand expended for accommodation and daily meal allowances for the EPWP beneficiary trained off site that must be arranged by the contractor. Amounts quoted shall be corrected according to re-measurement based on actual invoices.

The tendered percentages under sub items SL 11.02.01 (03) and SL 11.02.02 (03) will be paid to the contractor on the value of each payment pertaining to the accommodation and advance meal allowances to cover his expenses in this regard.

SL 11.03 ALTERNATIVE WORKERS FOR THE PERIOD OF OFF-SITE TRAINING

SL 11.03.01 Life skills training for 26 days ..... Unit: worker-days

SL 11.03.02 Skilled development and Technical training for EPWP beneficiary for (.....) days..... Unit: worker-days

The unit of measurement shall be the number of EPWP beneficiary replaced while in training multiplied by the number of days absent from the site.

The rates tendered shall include full compensation for additional replacement labour during periods of off-site training.

SL 11.04 EMPLOYMENT OF EPWP BENEFICIARY

SL 11.04.01 Employment of EPWP beneficiary.....(Prov.Sum)¼.Unit: R/ worker-month

SL 11.04.02 Employment of EPWP beneficiary.....(Prov.Sum)¼.Unit: R/ worker-month

The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R ....., multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for the training shall be excluded from this item. This item is based on 6 months appointment for EPWP beneficiary.

SL 11.05 PROVISION OF EPWP DESIGNED OVERALLS TO EPWP BENEFICIARY

SL 11.05.01 Supply EPWP designed overalls to EPWP beneficiary ..... (Prov.Sum).....Unit: R

EPWP beneficiary overalls should be orange (top and bottom) as per EPWP specification with the exception of Correctional Services contracts where the EPWP beneficiary top would be blue and the bottom orange.

SL 11.05.02 Profit and attendance..... Unit: %

An amount has been provided in the Schedule of Quantities under sub item SL 10.05.01 for the supply of EPWP designed overalls, as per the specification provided by the EPWP unit, arranged by the Service Provider. The Engineer will have sole authority to spend the amounts or part thereof. The tendered percentage under sub items SL 10.05.02 will be paid to the contractor on the value of each payment pertaining to the supply of overalls to cover his expenses in this regard.

SL 11.06 PROVISION OF SMALL TOOLS FOR EPWP BENEFICIARY

SL 11.06.01 Provide all EPWP beneficiary with prescribed tools for their respective trades. Specification for the mentioned tools to be provided by the EPWP Service Provider. These tools will become the property of the EPWP beneficiary after the completion of the programme.....(Prov.Sum)....Unit: **R 500-00** /youth worker

SL 11.06.02 Profit and attendance..... Unit: %

SL 11.07 APPOINTMENT OF EPWP BENEFICIARY TEAM LEADER/S

SL 11.07.01 Appointment of (_____) EPWP beneficiary team leader/s for the duration of the contract.....(Prov.Sum)..... Unit: R / EPWP beneficiary team leader

The EPWP beneficiary Team Leader will act as CLO/PLO to facilitate the project work between the EPWP beneficiary and the contractor. Umsobumvu Youth Fund can assist with the sourcing of EPWP beneficiary Team Leader for employment by the contractor.

SL 11.08 LIAISON WITH SERVICE PROVIDER.....Unit: hours

The tendered rate shall include full compensation for the cost of liaising with the Service Provider and Social Facilitators on all issues regarding the works.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

EPWP - BOQ AND SCOPE

PAGE NO	ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1		**BILL NO 2**				
1		**EMPLOYMENT AND TRAINING OF LABOUR ON THE EPWP BENEFICIARY INFRASTRUCTURE PROJECTS**				
1		**PREAMBLES**				
1		Tenderers are advised to study the Additional Specification SL: Employment and training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Projects as bound elsewhere in the Bills of Quantities and then price this Bill accordingly				
1		**TRAINING OF EPWP BENEFICIARY**				
1		(TARGET: 50 EPWP BENEFICIARY)				
1		Skills development and Technical training:				
1	1	Skills development and technical training for EPWP beneficiary for an average of 10 days (ref. SL11.01.01)	Item	1		
1	2	Penalty due to not meeting the target as in SL 11.01.02	Y/Work	R 2 000,00		
1		**TRAVELLING AND ACCOMMODATION DURING OFF SITE TRAINING:**				
1		Life skills training for 26 days (ref. SL 11.02.01)				
1	3	Travelling (based on 50km/EPWP beneficiary)	km	2500		
1	4	Profit and attendance on Items 1, 2 & 3	%			
1		**EMPLOYMENT OF EPWP BENEFICIARY**				
1	5	Employment of EPWP beneficiary (30 youth) [New Office Block]	Item	1		
1		The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 100/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 6 months appointment for EPWP beneficiary				
1	6	Employment of EPWP beneficiary(40 youth) [Parking garage]	Item	1		
		TOTAL CARRIED TO SUMMARY				

			UNIT	QUANTITY	RATE	AMOUNT
2		The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 110/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 12 months appointment for EPWP beneficiary				
2	7	Employment of EPWP beneficiary (30 youth) [Conference Centre & Canteen]	Item	1		
2		The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 120/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 12 months appointment for EPWP beneficiary				
2		**PROVISION OF EPWP DESIGNED OVERALLS TO YOUTH WORKERS**				
2	8	Supply EPWP designed overalls to EPWP beneficiary (ref. SL 11.05.01) for 100 workers	Item	1		
2	9	Profit and attendance on Items 5 - 8 (ref. SL 11.05.02)	%	7,5		
2		**PROVISION OF SMALL TOOLS FOR EPWP BENEFICIARY**				
2	10	Supply of small tools to EPWP beneficiary. Specification to be supplied by the EPWP-NYS Serviced Provider for the respective trades (ref. SL 11.06.01) for 100 workers	Item	1		
2	11	Profit and attendance (ref. SL 11.06.02)	%	7,5		
2		**APPOINTMENT OF YOUTH TEAM LEADERS**				
2	12	Appointment of EPWP beneficiary Team Leaders for the duration of the contract (ref. SL 11.07)	Item	1		
2	13	Liaison with Service Provider (ref. SL 11.08)	Hrs	30		
2	14	Profit and attendance on Items 12 & 13	%	7,5		
		FINAL TOTAL CARRIED TO PRELIMINARY AND GENERAL IN BILL OF QUANTITIES				

SCOPE OF WORKS IN RESPECT OF WORK RELATING TO THE EXTENDEND PUBLIC WORKS PROGRAMME (EPWP)

Project title:	**eThekwini Region: Empungeni primary school: Storm Damage Phase 16**		
Project Code:	**069027**	EPWP NO:	**0**

Introductory notes:

1. The works, or parts of the works will be constructed using labour-intensive methods only in terms of this specification. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters **LI** are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.
2. Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

DESCRIPTION OF THE WORKS

Employer's objectives

The employer's objectives are to deliver public infrastructure using labour-intensive methods in accordance with EPWP Guidelines.

Labour-intensive works

Labour-intensive works comprise the activities described in the Labour-Intensive Specification. Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work.

LABOUR-INTENSIVE COMPETENCIES OF SUPERVISORY AND MANAGEMENT STAFF

Contractors shall only engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/ Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/ Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (See Appendix C). at NQF outlined in Table 1. (See GUIDELINES FOR THE IMPLEMENTATION OF LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS UNDER THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) -THIRD EDITION 2015)

Emerging contractors shall have personally completed, or be registered on a skills programme for the NQF level 2 unit standard. All other site supervisory staff in the employ of emerging contractors must have completed, or be registered on a skills programme for the NQF level 2 unit standards or NQF level 4 unit standards. Table 1: Skills programme for supervisory and management staff.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour-Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	

		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain structures	
Personnel	**NQF level**	**Unit standard titles**	**Skills programme description**
Foreman/supervisor	4	Implement Labour-Intensive Construction Systems and Techniques	This unit standard must be completed, and
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain Water an Sanitation Services	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain structures	
Site Agent /Manager (i.e. the contractor's most senior representative that is resident on the site)	5	Manage Labour-Intensive Construction Processes	Skills Programme against this single unit standard
Details of these skills programmes may be obtained from the CETA ETQA manager (e-mail :gerard@ceta.co.za , tel: 011-265 5900)			

EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

1.1 Requirements for the sourcing and engagement of labour.

1.1.1 Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

1.1.2 The rate of pay set for the SPWP per task or per day will be an acceptable rate determined by the Department of Labour.

1.1.3 Tasks established by the contractor must be such that:

a) the average worker completes 5 tasks per week in 40 hours or less; and
b) the weakest worker completes 5 tasks per week in 55 hours or less.

1.1.4 The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.

1.1.5 The Contractor shall, through all available community structures, inform the local community of the labour-

a) where the head of the household has less than a primary school education;
b) that have less than one full time person earning an income;
c) where subsistence-agriculture is the source of income.
d) that who are not in receipt of any social security pension income

1.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of unskilled and semi-skilled workers is in the following proportions:

a) 55% women;
b) 55% youth who are between the ages of 18 and 35; and
c) 2% on persons with disabilities.

1.2 Specific provisions pertaining to SANS 1914-5

1.2.1 Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

1.2.2 Contract participation goals

1.2.2.1 There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.

1.2.2.2 The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

1.2.3 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

1.2.4 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

1.2.5 Variations to SANS 1914-5

1.2.5.1 The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.

1.2.5.2 The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

1.3 Training of targeted labour

1.3.1 The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

1.3.2 The cost of the formal training of targeted labour, will be funded by the local office of the Department of Labour. This training will take place as close to the project site as practically possible. The contractor must access this training by informing the relevant regional office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The Employer and the Department of Public Works (Fax: 012 3258625/ EPWP Unit, Private Bag X65, Pretoria 0001) must be furnished with a copy of this request.

1.3.3 The contractor shall do nothing to dissuade targeted labour from participating in training programmes and shall take all reasonable steps to ensure that each beneficiary is provided with two days of formal training for every 22 days worked.

1.3.4 An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of the above.

1.3.5 Proof of compliance with the above requirements must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

GENERIC LABOUR-INTENSIVE SPECIFICATION

1 Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

a) trenches having a depth of less than 1.5 metres
b) storm water drainage
c) low-volume roads and sidewalks

2 Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

3 **Hand excavateable material**

Hand excavateable material is material:

a) Granular materials:

i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) Cohesive materials:

i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note: 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.

2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of. 60 degrees with respect to the horizontal) into the material being used.

Table 2: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	**DESCRIPTION**	**CONSISTENCY**	**DESCRIPTION**
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in upto 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of a geological pick; requires many blows for excavation.	stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail' with difficulty; slight indentation produced by blow of a geological pick point.

4 **Trench excavation**

All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

5 **Compaction of backfilling to trenches (areas not subject to traffic)**

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers

a) to 90% Proctor density;

b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or

c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

6 **Excavation**

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

7 **Clearing and grubbing**

Grass and small bushes shall be cleared by hand.

8 **Shaping**

All shaping shall be undertaken by hand.

9 **Loading**

All loading shall be done by hand, regardless of the method of haulage.

10 **Haul**

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

11 **Offloading**

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

12 **Spreading**

All material shall be spread by hand.

13 **Compaction**

Small areas may be compacted by hand provided that the specified compaction is achieved.

14 **Grassing**

All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

15 **Stone pitching and rubble concrete masonry**

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

16 **Manufactured Elements**

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

eThekwini Region: Empungeni primary school: Storm Damage Phase 16

EMPLOYMENT AGREEMENT
CONTRACT

(Insert Your Company Logo)

(This shall serve as the cover page on employment contracts for local labour)

EMPLOYMENT AGREEMENT

BETWEEN

[CONTRACTOR NAME].....

AND

[WORKER NAME].....

1. PARTIES

The Parties to this Agreement are -

1.1. Contractor: _____

herein represented by: _____

duly authorised thereto

And

1.2. Mr / Me: _____
[worker's name]

2. DEFINITIONS AND INTERPRETATION

2.1. In this Agreement and any Annexure thereto, unless inconsistent with or otherwise indicated by the context-

"Agreement"	means the contents of this Agreement.
"Company"	means the company that employs the worker
"Department"	means the Department of Public Works
"Worker"	is a person that performs a specific or necessary task or who completes tasks in a certain way
"EPWP"	The Expanded Public Works Programme is a government programme aimed at the alleviation of poverty and unemployment. The programme ensures the full engagement on Labour Intensive Methods of Construction (LIC) to contractors for skills development. The EPWP focuses at reducing unemployment by increasing economic growth by means of improving skills levels through education and training and improving the enabling environment for the industry to flourish.

3. PURPOSE

The purpose of this agreement is to:-

Ensure that the agreement is binding to both the Worker and the Employer.

4. TERMS AND CONDITIONS

- The worker will have no entitlement to the benefits of a full time employee, namely;

_____

_____

- The worker should not have the expectation that this contract will be renewed or extended.
- The worker will be subject to all laws, rules, policies, codes and procedures applicable to the;

_____

- The worker must meet the standards and requirements of the contractor
- The worker must render his/her services during normal working hours of minimum of forty to fifty five hours in any week; which comprise of an eight-hour working day in a five-day week.

5. REMUNERATION

The worker will receive compensation to the amount of R_____00 which must be paid by the 25th or on the last day of each month.

6. ROLES AND RESPONSIBILITIES

6.1 Employer / Worker

- Work for _____ in terms of the period as specified in the employment agreement contract.
- Be available for and participate in all learning and work experience required by the company.
- Comply with workplace policies and procedures.
- Complete any attendance or any written assessment tools supplied by the contractor to record relevant workplace experience.
- Demonstrate willingness to grow and learn through work experience.

Provide the following documentation to the employer,

- Certified identity document not longer than 3 months
- ID size photos
- Sign employment contract

6.2 Employer

- Employ the worker for a period specified in the agreement.
- Provide the worker with appropriate work based experience in the work environment.
- Facilitate payments of wages / stipends.
- Keep accurate records of workers.
- Where a worker/ learner is disabled, the employer will have to provide in the additional needs e.g. special materials, learning aids and in some cases physical or professional support (such aids remain the property of the employer).
- Keep up to date records of learning and discuss progress with the intern on a regular basis.
- Apply fair disciplinary, grievance and dispute resolution procedures to the worker.
- Prepare an orientation/ induction course to introduce worker/ learner to the workplace and specific workplace requirements.
- Ensure the daily attendance register is signed by the worker.

7. DURATION.

This agreement commences on: _____

and

expires on: _____

8. BREACH.

If either party commits any breach of the terms of this contract (and fails to rectify it within 30 days of receipt of a written notice calling it to do so, then) the other party shall be entitled to terminate the contract or to claim specific performance without prejudice to any of its other legal rights, including its rights to claim damages.

9. CONDITIONS OF EMPLOYMENT

9.1. Meal Breaks

9.1.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

9.1.2 An employer and worker may agree on longer meal breaks.

9.1.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

9.1.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

9.2. Special Conditions for Security Guards (Only applicable to security Guards)

9.2.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

9.2.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

9.3. Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

9.4. Work on Sundays and Public Holidays

9.4.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

9.4.2 Work on Sundays is paid at the ordinary rate of pay.

9.4.3 A task-rated worker who works on a public holiday must be paid;

(a) the worker's daily task rate, if the worker works for less than four hours;

(b) double the worker's daily task rate, if the worker works for more than four hours.

9.4.4 A time-rated worker who works on a public holiday must be paid

(a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

(b) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

9,5 Sick leave

9.5.1 Only workers who work more than 24 hours per month have the right to claim sick-pay in terms of this clause.

9.5.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

9.5.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

9.5.4 Accumulated sick-leave may not be transferred from one contract to another contract.

9.5.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

9.5.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

9.5.7 An employer must pay a worker sick pay on the worker's usual payday.

9.5.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is

(a) absent from work for more than two consecutive days; or

(b) absent from work on more than two occasions in any eight-week period.

9.5.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

9.5.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

9.6. Maternity Leave

9.6.1 A worker may take up to four consecutive months' unpaid maternity leave.

9.6.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

9.6.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

9.6.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

9.6.5 A worker may begin maternity leave as follows;

(a) four weeks before the expected date of birth; or

(b) on an earlier date

(i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or

(ii) if agreed to between employer and worker; or

(c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

10,6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

9.7. Family responsibility leave

9.7.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances;

(a) when the employee's child is born;

(b) when the employee's child is sick;

(c) in the event of a death of

(i) the employee's spouse or life partner;

(ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

9.8. Keeping Records

9.8.1 Every employer must keep a written record on site for the duration of the project and three (3) year after completion records should consists of at least the following;

(a) the worker's name and position;

(b) copy of an acceptable worker identification

(c) in the case of a task-rated worker the number of tasks completed by the worker;

(d) in the case of a time-rated worker, the time worked by the worker;

(e) payments made to each worker in a form of Proof of Payment, Payroll registers and the acknowledgement of payment receipt signed by the worker.

9.8.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

9.9. Payment

9.9.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

9.9.2 A worker may not be paid less than the Ministerial Determination wage rate.

9.9.3 A task-rated worker will only be paid for tasks that have been completed.

9.9.4 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

9.9.5 A time-rated worker will be paid at the end of each month.

9.9.6 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

9.9.7 Payment in cash or by cheque must take place

(a) at the workplace or at a place agreed to by the worker;

(b) during the worker's working hours or within fifteen minutes of the start or finish of work;

(c) in a sealed envelope which becomes the property of the worker.

9.9.8 An employer must give a worker the following information in writing

(a) the period for which payment is made;

(b) the numbers of tasks completed or hours worked;

(c) the worker's earnings;

(d) any money deducted from the payment;

(e) the actual amount paid to the worker.

9.9.9 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

9.9.10 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

9.10. Inclement weather

If no work has begun on site, and if an employee has reported for work, the employee will be paid for four hours. Should work be stopped after the first four hours, the employee will be paid for the hours worked. Where the employer has given employees notice on the previous working day that no work will be available due to inclement weather, then no payment will be made.

9.11. Deductions

9.11.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

9.11.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

9.11.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement of Law; court order or arbitration

9.11.4 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Unemployment Insurance Fund Contributions Act, 2002 (Act No. 4 of 2002)

9.11.5 An employer may not require or allow a worker to

(a) repay any payment except an overpayment previously made by the employer by mistake;

(b) state that the worker received a greater amount of money than the employer actually paid to the worker; or

(c) pay the employer or any other person for having been employed.

9.12. Health and Safety

9.12.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

9.12.2 A worker must;

(a) work in a way that does not endanger his/her health and safety or that of any other person;

(b) obey any health and safety instruction;

(c) use any personal protective equipment or clothing issued by the employer;

(d) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

9.13. Compensation for Injuries and Diseases

9.13.1 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993 as amended by COIDA Act 61, 1997.

9.13.2 A worker must report any work-related injury or occupational disease to their employer or manager.

9.13.3 The employer must report the accident or disease to the Compensation Commissioner.

9.13.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

9.14. Termination

9.14.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.

9.14.2 A worker will not receive severance pay on termination.

9.14.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

9.14.4 A worker **who is absent for more than three consecutive days** without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

9.14.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

Notice procedure is as follows;

- One week if employed for four weeks or less
- Two weeks if employed for more than four weeks but not more than a year
- Four weeks of employed for one (1) year or more

9.15. Certificate of Service

9.15.1 On termination of employment, a worker is entitled to a certificate stating;

(a) the worker's full name;
(b) the name and address of the employer;
(c) the Project on which the worker worked; the work performed by the worker;
(d) any training received by the worker;
(e) the period for which the worker worked on the Project; and
(f) any other information agreed on by the employer and worker.

9.16. DOMICILE

The address to which notices and all legal documents may be delivered or served are as follows:

Employee Details

Name & Surname: _____

ID No: _____

Residential Address: _____

_____

Contact No: _____

Date of Employment: _____

To be supervised by: **Main Contractor:** ☐
or Sub Contractor: ☐

Category of employment: **Skilled:** ☐
Semi-skilled: ☐
Unskilled: ☐

For Skilled & Semi-skilled state the trade: _____

Period of employment: Fixed for until when your services are still required on site

I confirm that I have been inducted and fully understand the condition of my appointment.

Employee Signature: _____ **Witness by SGB/CLO:** _____

Signature by Witness: _____

Employer Details

Name & Surname: _____
Designation: _____
Contact No: _____ **Signature:** _____