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
SECTION 2

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

PROJECT NAME	WIMS NO.	CONTRACT PERIOD
MANDENI PS	069031	8 CALENDAR MONTHS

ENGINEER/PRINCIPAL AGENT
LDM Quantity Surveyors DBN (Pty) Ltd
P.O. Box 19233
Dormerton
Durban
4015
031 - 207 1340 - Tel Number
031 - 209 9441 - Fax Number
ssirputh@LDM.co.za

QUANTITY SURVEYORS
LDM Quantity Surveyors DBN (Pty) Ltd
P.O. Box 19233
Dormerton
Durban
4015
031 - 207 1340 - Tel Number
031 - 209 9441 - Fax Number
ssirputh@LDM.co.za

EMPLOYER:
Head: Public Works
KZN Department of Public Works
Private Bag X 9041
PIETERMARITZBURG
3200
Tel Number: 033 - 897 1300
Fax Number: 033 - 897 1399

REGION:
Regional Manager
KZN Department of Public Works
X54336
Mayville
4091
Tel Number: 031 - 203 2183
Fax Number: 031 - 261 5044

Tender Number:	ZNTD05334W	Project Code:	069031
CIDB Grading:	5GB OR HIGHER	Document Date:	As Per Tender Advert
ECDP Number:	N/A	Contract Period:	8 Calendar Months

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

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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THE CONTRACT

3. PART C1: AGREEMENT AND CONTRACT DATA

4. PART C2: PRICING DATA

5. PART C3: SCOPE OF WORKS

6. PART C4: SITE INFORMATION

7. DRAWINGS

8. ANNEXURES

KWAZULU-NATAL PROVINCE
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DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

THE CONTRACT

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

C1 - AGREEMENT AND CONTRACT DATA

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE

Tender No - ZNTD05334W

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

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
REPUBLIC OF SOUTH AFRICA

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

C1.2 - CONTRACT DATA

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

CONTRACT DATA FOR:

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

Tender no: **ZNTD05334W**

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 - 897 1399*** Fax: ***033 - 897 1300***

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

[1.1.1.16] **Employers Agent 1**
LDM Quantity Surveyors DBN (Pty) Ltd

Agent's service:
PRINCIPAL AGENT

Postal address:
P.O. Box 19233
Dormerton
4015

Tel: ***031 - 207 1340*** Fax: ***031 - 209 9441***

Employers Agent 2
LDM Quantity Surveyors DBN (Pty) Ltd

Agent's service:
QUANTITY SURVEYORS

Postal address:
P.O. Box 19233
Dormerton
4015

Tel: ***031 - 207 1340*** Fax: ***031 - 209 9441***

Employers Agent 3
Map Africa Consulting Engineers

Agent's service:
STRUCTURAL / CIVIL ENGINEERS

Postal address:
Suite ESS106A, Strathmore Park, 305 Musgrave Rd,
Musgrave, Durban
4001

Tel: ***031 309 5831*** Fax: ***031 309 2929***

Employers Agent 4
Ibuya Consulting Engineers

Agent's service:
ELECTRICAL ENGINEERS

Postal address:
P.O. Box 1692
Wandsbeck
3631

Tel: ***031 266 7332*** Fax: ***031 266 7340***

Tender no:	**ZNTD05334W**
	Employers Agent 5 ***Nathan Francis Architects*** ***Agent's*** service: ***ARCHITECTS*** Postal address: ***Suite 12, 40 Newport Avenue*** ***Glen Ashley, Durban*** ***4001*** Tel: insert ***0790379821*** Fax: ***N/A***
	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 3 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 14 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 within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	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: ***18-Dec-23*** ends on: ***8-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 14 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: ***Electrical, Mechanical, Civil and Building Work***
[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: ***R10 Million***
[6.5.1.2.3]	The percentage allowance to cover overhead charges for contractor and subcontractors, is: ***5.00%***
[1.1.1.14]	**Practical Completion Date** The Practical Completion date is: **8 calendar months after date of formal site handover.**
[5.5.1]	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 Period)* The date for **practical completion** shall be ***8 calendar months after date of formal site handover***
[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]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 2:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 3:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 4:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 5:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 6:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
[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: ***Refer to Page 8 of 8 of the Contract Data.*** 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] *[10.5.3]* *[10.9.1]*	The determinations of disputes shall be by ARBITRATION ONLY. The number of Adjudication Board Members to be appointed is: **One** 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 "GUARATEE 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 (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
	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 14 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: ZNTD05334W **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 address .....

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.

Alternative A

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

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 alternative '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/Annexures 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
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REPUBLIC OF SOUTH AFRICA

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

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 ZNTD05334W	**Project Code 069031**

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: **DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS**

"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: 5% _____
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
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PART C2 - PRICING DATA

C2.1 PRICING INSTRUCTIONS GCC FOR CONSTRUCTION WORKS (Second Edition 2010)			
Project title:	DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS		
Tender no:	ZNTD05334W	Project Code:	069031

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 "ASAQS Model Preambles for Trades 2017" 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 practice 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 verification 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 verified 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 verified 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 Tenderer'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 Compliance Status (TCS) requirements are also applicable to foreign Tenderers / individuals who wish to submit Tenders.
2. SARS will then furnish the Tenderer 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.

16 LOCAL LABOUR

Tenderers attention is specifically drawn to Clause E9 in the Preliminaries and General and adequate provision shall be made in tendered rates for payment of local unskilled labour at the minimum prescribed rates as directed by Labour Law and current Government Legislations, however tenderers also need to ensure that they pay the average going rate/market related rate of the area where the project is located and ultimately be in accordance with the prescribed and legislated labour rates, promulgated by Government.

Tenderers attention is specifically drawn to the requirement that all unskilled labour utilized on the construction site by both the Main Contractor and Sub-contractors must be employed from the local community where the project is located.

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

Item No		Quantity	Rate	Amount
	SECTION NO. 1			
	BILL NO. 1			
	PRELIMINARY AND GENERAL			
	NOTES			
	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").			
	Carried Forward		R	

Brought Forward

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.

PRELIMINARY AND GENERAL (CPAP WORK GROUP NO. 190 UNLESS OTHERWISE STATED)

SECTION A: GENERAL CONDITIONS OF CONTRACT

1 **A1** General(clause 1)

F:_____ V:_____ T:_____

Item

2 **A2** Basis of Contract (clause 2)

F:_____ V:_____ T:_____

Item

3 **A3** Engineer (clause 3)

F:_____ V:_____ T:_____

Item

4 **A4** Contrators general obligations (clause 4)

F:_____ V:_____ T:_____

Item

Carried Forward

		Brought Forward			R
5	**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		
6	**A6**	Payment and related matters (clause 6) F:_____ V:_____ T:_____	Item		
7	**A7**	Quality and related matters (clause 7) F:_____ V:_____ T:_____	Item		
8	**A8**	Risks and related matters (clause 8) F:_____ V:_____ T:_____	Item		
9	**A9**	Terminations of Contract (clause 9) F:_____ V:_____ T:_____	Item		
10	**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:**			
		Carried Forward			R

Brought Forward

11 **B1** Scope (clause 1)

F:_____ V:_____ T:_____

Item

12 **B2** Normative references (clause 2)

F:_____ V:_____ T:_____

Item

13 **B3** Definitions (clause 3)

F:_____ V:_____ T:_____

Item

14 **B4** Requirements for construction and management (clause 4)

F:_____ V:_____ T:_____

Item

15 **B4.1** General (Clause 4.1)

F:_____ V:_____ T:_____

Item

16 **B4.2** Responsibilities for design and construction (clause 4.2)

F:_____ V:_____ T:_____

Item

17 **B4.3** Planning, programme and method statements (clause 4.3)

F:_____ V:_____ T:_____

Item

18 **B4.4** Quality assurance (clause 4.4)

F:_____ V:_____ T:_____

Item

R

Carried Forward

R

		Brought Forward		R
19	**B4.5**	Setting out (clause 4.5) F:_____ V:_____ T:_____	Item	
20	**B4.6**	Management and disposal of water (clause 4.6) F:_____ V:_____ T:_____	Item	
21	**B4.7**	Blasting (Clause 4.7) F:_____ V:_____ T:_____	Item	
22	**B4.8**	Works adjacent to services and structures (clause 4.8) F:_____ V:_____ T:_____	Item	
23	**B4.9**	Management of the Works and site (clause 4.9) F:_____ V:_____ T:_____	Item	
24	**B4.10**	Earthworks (clause 4.10) F:_____ V:_____ T:_____	Item	
25	**B4.11**	Testing (clause 4.11) F:_____ V:_____ T:_____	Item	
26	**B4.12**	Materials, samples and fabrication drawings (clause 4.12) F:_____ V:_____ T:_____	Item	
		Carried Forward		R

	Brought Forward			R
27	**B4.13** Equipment (clause 4.13) F:_____ V:_____ T:_____	Item		
28	**B4.14** Site establishment (clause 4.14) F:_____ V:_____ T:_____	Item		
29	**B4.15** Survey control (clause 4.15) F:_____ V:_____ T:_____ As built survey information prepared by an Engineering Surveyor to be submitted upon request to the Engineer.	Item		
30	**B4.16** Temporary works (clause 4.16) F:_____ V:_____ T:_____	Item		
31	**B4.17** Existing services (clause 4.17) F:_____ V:_____ T:_____ The Contractor to note that the water and electricity supplies at the specific school may be restricted or possibly non-existent. Accordingly, the tenderer to ensure that temporary supplies(water tanks/ electrical generators) are available on site to meet the project demands and to achieve continuity of the works on site.The use of potable water for construction activities is prohibited.	Item		
	Carried Forward			R

	Brought Forward			R
32	**B4.18** Health and safety (clause 4.18) F:_____ V:_____ T:_____ The Contractor shall provide all PPE requirements for all Employees and visitors to the site, during the execution of the works.	Item		
33	**B4.19** Environmental requirements (clause 4.19) F:_____ V:_____ T:_____	Item		
34	**B4.20** Alterations, additions, extensions and modifications to existing works (clause 4.20) F:_____ V:_____ T:_____	Item		
35	**B4.21** Inspection of adjoining structures, services, buildings and property (clause 4.21) F:_____ V:_____ T:_____	Item		
36	**B4.22** Attendance on nominated and selected Sub-contractors (clause 22) 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)*			
	Carried Forward			R

		Brought Forward			R
37	**C.1**	Certification by recognised bodies (clause 4.4) F:_____ V:_____ T:_____ The Contractor shall provide all original certification of compliance in respect of all specialist installations and compliance testing as deemed necessary or as stipulated by the Engineer. Payment will be withheld in the absence of the provision of original compliance certificates.	Item		
38	**C.2**	Agrément certificates (clause 4.5) F:_____ V:_____ T:_____	Item		
39	**C.3**	Other services and facilities (clause 4.8) F:_____ V:_____ T:_____	Item		
40	**C.4**	Recording of weather (clause 5.2) F:_____ V:_____ T:_____ A rain gauge shall be provided on site for the duration of the contract. A diary shall be maintained with all rainfall records and signed off by the School Principal and thereafter submitted to the Engineer at every site meeting.	Item		
41	**C.5**	Management meetings (clause 5.3) F:_____ V:_____ T:_____	Item		
42	**C.6**	Daily records (clause 5.6) F:_____ V:_____ T:_____	Item		
		Carried Forward			R

		Brought Forward			R
43	**C.7**	Bond and guarantees (clause 5.7) F:_____ V:_____ T:_____	Item		
44	**C.8**	Permits (clause 5.9) F:_____ V:_____ T:_____	Item		
45	**C.9**	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)			
46	**D.1**	Requirements for drawings, information and calculations for which the Contractor is responsible (clause 4.1.7) F:_____ V:_____ T:_____	Item		
47	**D.2**	The responsibility strategy assigned to the Contractor for the works (clause 4.2.1) F:_____ V:_____ T:_____	Item		
48	**D.3**	The planning, programme and method statements (clause 4.3) F:_____ V:_____ T:_____ The Contractor must provide weekly programme updates to the Engineer including the identification of all the activities that are delayed and the proposed plan for corrective action.	Item		
		Carried Forward			R

		Brought Forward			R
49	**D.4**	Samples of materials, workmanship and finishes (clause 4.12.1) F:_____ V:_____ T:_____	Item		
50	**D.5**	Fabrication drawings that the Contractor is to provide and deliver to the Employer (clause 4.12.2) F:_____ V:_____ T:_____	Item		
51	**D.6**	Office for the Foreman (clause 4.14.3) F:_____ V:_____ T:_____	Item		
52	**D.7**	Telephone (clause 4.14.3) F:_____ V:_____ T:_____	Item		
53	**D.8**	Office for inspector of works (clause 4.14.3) F:_____ V:_____ T:_____	Item		
54	**D.9**	Telephone in office for inspector of works (clause 4.14.3) F:_____ V:_____ T:_____	Item		
55	**D.10**	Sheds (clause 4.14.3) F:_____ V:_____ T:_____	Item		
		Carried Forward			R

Brought Forward R

56 **D.11** Provision and erection of signboards (clause 4.14.6)

F:_____ V:_____ T:_____

Item

57 **D.12** Termination, diversion or maintenance of existing services (clause 4.17.1)

F:_____ V:_____ T:_____

Item

58 **D.13** Services which are known to exist (clause 4.17.3)

F:_____ V:_____ T:_____

Item

59 **D.14** Detection apparatus (clause 4.17.4)

F:_____ V:_____ T:_____

Item

60 **D.15** 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.

Carried Forward R

Brought Forward R

61 **E1 PROPRIETARY BRANDED PRODUCTS**

The Tenderer shall take delivery of, handle, store, use apply and/or fix all proprietary branded products in strict accordance with the manufacturer's instruction after consultation with the manufacturer's authorised representative.

F:_____ V:_____ T:_____

Item

62 **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

63 **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 R

		Brought Forward			R
64	**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		
65	**E5**	**LABOUR RECORD** At the end of each week for the full duration of the contract, 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. The Contractor shall provide the completed DPW local labour forms , records and schedules together with all supporting documentation (certified ID copies , Employee details, wage rates, proof of payment , period of employment, employment contracts, etc.). The client reserves the right to conduct random inspections on site to verify the local labour employed on the project. F:_____ V:_____ T:_____	Item		
66	**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		
		Carried Forward			R

		Brought Forward			R
67	**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		
68	**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		
		Carried Forward			R

Brought Forward R

69 **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, other 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 and preference should be given to parents of those children that are enrolled in the school whom are not currently employed. The Contractor shall, in general, maximize the involvement of the local labour and it is required that 100% of unskilled labour should be from the local community. All standard local labour employment forms (EPWP local labour forms) together with the supporting documentation (certified ID copies, Employee details, wage rates, proof of payment, period of employment, employment contracts, etc.) must be submitted with the monthly payment certificates and issued to the Engineer.

F:_____ V:_____ T:_____

Item

Carried Forward R

Brought Forward R

70 **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

71 **E11 CONTRACT PRICE ADJUSTMENT PROVISIONS (CPAP)**

Notwithstanding anything to the contrary contained in 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 unless otherwise instructed.
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

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E12 EXPANDED PUBLIC WORKS PROGRAMME (EPWP) CONDITIONS AND SPECIFICATIONS

12.1 EMPLOYMENT TARGETS

E12.1 a. Employment Targets

72 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. No. of jobs estimated to be created equals to a **minimum of 5 unskilled labour** for the duration of the project.

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 (**Project Steering Committee**) 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 programme 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 a level of competency that meets Contractor's requirements.

F:_____ V:_____ T:_____ Item

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	E12.1 b. Employment Requirements			
73	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 following employment requirements of the EPWP; 1. 60% of unskilled labour to be women 2. 55% of the unskilled labour to be youth aged between 18 and 35 years 3. 2% of the unskilled labour to be people with disabilities 100% Unskilled labour utilised must reside within the boundaries of the Municipality ward where this contract is executed, with preference to the local community closest or at a 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	
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74	**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 a 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. 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 Method**		
75	Those parts of the contract to be constructed using Labour Intensive methods will be marked in the Bill of Quantity with letter LI (indicating Labour Intensive) against every item so designated. Such works will only be constructed using the 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)"** **Labour Intensive Component** Due to the nature of the work involved, this type of project lends itself to be feasible as a labour Intensive project i.e. the construction activities will indeed require skilled/unskilled labour.		
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The aim of the projects is to provide some form of economic benefit whilst generating and increasing the acquired skills shortage to improve sustainability in the local area. The following are potential focus areas where employment creation can be optimized per project:

(i) Trenching works not exceeding depth of 1.5m, including trenching for Foundation, Electrical, Water, Mechanical & Civil Services Works including backfilling where ground conditions permit
(ii) Building Works; All masonry works (which include concrete mixing on site; brickwork; block work ; plastering; screed works; jointing; etc.); Painting, Plumbing, Ironmongery; roof cladding; glazing; tiling; carpentry; flooring; waterproofing; etc.
(iii) Sewer works including construction of manholes, laying of Sewer pipes, bedding, backfilling and compaction.
(iv) Water Reticulation works including excavation, bedding, laying of pipes and compaction
(v) Site Clearance Works
(vi) Electrical Reticulation works
(vii) Stormwater drainage using in-situ concrete
(viii) Landscaping and Grassing of Sports Field
(ix) Cleaning and Fencing Works

The above identified activities are deemed suitable to be constructed using the LIC methods; to build, upgrade and maintain the social and economic levels of the underdeveloped area, promoting community participation, development of skills and creating more work opportunities.

The above identified activities **should** be marked in the Bill of Quantities with the letter (LI). Contractor to price the above items in the Bill of Quantities bearing in mind that they are regarded as the main sources of job creation, whether sub-contracted or undertaken by the Main Contractor.

The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a

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	variation to the contract. The items marked with the letter LI are not necessarily an exhaustive list of all the activities which must be done by hand. 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. F:_____ V:_____ T:_____	Item		
	E12.3 RECORD KEEPING			
76	12.3.1 Every Employer must keep in the project site office the following; minutes of site progress meetings; 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		
77	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 co-ordinating Department. F:_____ V:_____ T:_____	Item		
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	E12.4 EPWP MONTHLY REPORTING DOCUMENTS			
78	At the end of each month the Contractor must submit: • EPWP monthly data collection form • Worker monthly payment upload • Worker monthly acknowledgement of receipt of payment • Worker monthly Payment register • Worker monthly training form • Monthly attendance Register • Worker Monthly pay slips • Unskilled labour certified ID copies (once off) • Beneficiary ID-size photos • Proof of UIF • Proof of COIDA F:_____ V:_____ T:_____		Item	
	E12.5 EPWP PROMOTION			
	12.5.1. EPWP signage board			
79	EPWP Program at the project level shall always be promoted through the provision of projects signage board that embraces EPWP logo at the bottom, correct measurement for this sign board will be provided by the project leader during the site handing over meeting. F:_____ V:_____ T:_____		Item	
	12.5.2 Branding of labour apparel			
80	Contractor & Sub-contractors' labourers shall be provided with EPWP branded Personal Protective Equipment (PPE), reflector vest with EPWP acronym at the back as an ideal and cost effective means of promoting program on site. The Contractor is advised to price for both items 12.5.1 and 12.5.2 F:_____ V:_____ T:_____		Item	
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E12.6 COMMUNITY LIAISON OFFICER (CLO)

UTILISATION OF A COMMUNITY LIAISON OFFICER

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.

A CLO will be identified by the local structures (Project Steering Committee) 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 necessarily 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 conflicts 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

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	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. 8. Assisting the Contractor and the workforce in the establishment of grievance procedures and necessary recommendations to the Contractor regarding the grievances and solution thereto. 9. Attending to site meetings and project implementation meetings as required by the Contractor and preparing 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.			
81	Tenderers are to price twice the rate of unskilled local labour rate for the Community Liason Officer (CLO) 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: Public Works. F:_____ V:_____ T:_____	Item		
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	E12.7 SKILLS DEVELOPMENT ON SITE		
82	The Contractor is conforming to the objectives of EPWP if his beneficiaries are 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. The 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. The 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	
	Carried Forward		R

	Brought Forward		R
	E12.8 SUB-CONTRACTING FOR LOCAL EMERGING ENTERPRISES The project can support the notion of one Main Contractor to be appointed whilst several Sub-contractors, possibly from the local Small, Medium and Micro Enterprises (SMME) group, are employed to undertake various smaller activities. However due to the nature of the project, there will be **no local** Sub-contracting.		
83	**12.8.1 Sub-contractor Procedure** The recommendation will be that the Contractor shall advertise and call for competitive tenders in respect of each portion of the works that are required to be subcontracted. The tenders received are then evaluated by both the Employer and the Contractor. The evaluation panel shall comprises equal representatives from the Employer and from the Contractor. The Contractor shall without delay enter into contract with the successful tendering Subcontractor based on their accepted tender submission. This will promote the cost effective participation and development of smaller registered Contractors in larger valued contracts without losing single point of accountability for projects. This will allow the emerging Contractors to tender for work in a fair, transparent and equitable manner rather than having to negotiate such contracts with the Main Contractor. Also guarantees the participation of Contractors registered in lower Contractor grading designation. F:_____ V:_____ T:_____	N/A	
	Carried Forward		R

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84	**12.8.2 Sub-contractor Mentoring** Once the Sub-contractors have been identified and engaged, the Contractor shall closely monitor their performance in the execution of their contracts. The Contractor will be responsible for drawing implementation plan that will assist in managing the development of Sub-contractors undertaking Labour Intensive work. The Contractor will be responsible for management of the Sub-contractors and to ensure that they comply with all EPWP requirements as set-out in this specification. The Contractor and Sub-contractors will be required to compile monthly progress reports to be submitted with payment certificates. The reports shall include planned targets with regards to the works and employment, employment of EPWP beneficiaries and project expenditure. Failure to produce monthly reports will render payment certificates incomplete The Contractor will be required to assist, train, mentor and monitor its Sub-contractors and report through monitoring tool on progress of each Sub-contractor. F:_____ V:_____ T:_____	N/A	
	Carried Forward		R

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85	**12.8.3 Portfolio of Evidence** The Contractor is to develop and /or maintain a portfolio of evidence for each Sub-contractor. The Portfolio of Evidence is a collection of proof of the training, coaching, guidance and monitoring inputs provided to the Sub-contractor. It is the document which records the development progress of the Sub-Contractor and will need to be updated continually throughout the duration of the contract. The Portfolio of Evidence should include but not limited to the following documentation: • The development path designed for each Sub-Contractor, • The Training course completed by the Sub-Contractor, • The hours of guiding, coaching and mentoring received for each activity listed in the developmental plan, • A list of outcomes achieved at each level for each activity. F:_____ V:_____ T:_____	N/A	
	Performance and Penalties The Contractor performance will be monitored throughout the contract. Should the Contractor fail to fulfil his obligation he will be liable for penalties. Payment of the penalty shall not absolve the Contractor of any claim, or relieve the Contractor of any of his duties, obligations or responsibilities under the contract. • Utilisation of the Sub-Contractors The Contractor's achievement of the targets will be measured quarterly to determine the progress made to date.		
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86 **12.8.4 Local Suppliers**

Local material suppliers within the vicinity of the site to be utilise as long as their materials meets the required specification. However, quality and suitability would have to be checked by the Employer, if the local suppliers are unable to meet the demand the nearest suitable suppliers are to be used.

Production of materials should be done on site, where economies of scale allow e.g. concrete paving blocks should be encouraged which will enable employment creation and also allow for enterprise development.

F:_____ V:_____ T:_____ N/A

87 **12.8.5 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.

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g) Work requiring specialized tools will be provided free of charge by 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.

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:_____ N/A

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	E12.9 EPWP CONTRACT FOR LABOUR			
88	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.			
	F:_____ V:_____ T:_____		Item	
	E12.10 EPWP SCOPE OF WORKS FOR THIS PROJECT			
89	**Contractors are to price any item on the Bill of Quantities highlighted 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 the application of Labour Intensive Construction methods are indicated with letters (LI) 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. iv) External works such as landscaping; cleaning; paving; fencing; tarmac; etc.			
	F:_____ V:_____ T:_____		Item	
	Carried Forward			R

		Brought Forward		R
90	**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	
91	**E13.1**	Provide and maintain HIV/AIDS awareness posters terms of Clause 5.1b F:_____ V:_____ T:_____	Item	
92	**E13.2**	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	
93	**E13.3**	Arrange for workers to attend the HIV Awareness Programme in terms of Clause 5.2.1b F:_____ V:_____ T:_____	Item	
		Carried Forward		R

Brought Forward R

94 **E13.4 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:_____

Item

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.

95 **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

96 **E15 NOTICE BOARD, SITE OFFICE, ETC.**

Bidders 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

Carried Forward R

		Brought Forward			R
97	**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. F:_____ V:_____ T:_____		Item	
98	**E17**	**CONTRACT DOCUMENTS** The drawings issued with these Bid documents do not comprise the complete set but serves as a guide only for Biding purposes and for indicating the scope of works to enable the Bidder 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 Bidder he shall, before submitting his Bid, obtain clarification in writing from the Principal Agent. F:_____ V:_____ T:_____		Item	
99	**E18**	**GENERAL PREAMBLES** The Document Preambles will be the "ASAQS Model Preambles for Trades - 2017" 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	
		Carried Forward			R

Brought Forward R

100 **E19 TRADE NAMES**

Wherever a Trade Name for any product has been described in the Bills of Quantities the Bidder'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 Bids.

F:_____ V:_____ T:_____

Item

101 **E20 EXISTING PREMISES**

The Contractors attention is drawn to the fact that the existing building and surrounding buildings will remain in occupation during the performance of this contract and it is essential that the interruption to the daily activities of be kept to a minimum during the construction activities, to this end, the Contractor must allow for working in co-operation with the Engineer in organising the work in such a way as to cause the minimum disruption to the normal activities of this institution.

F:_____ V:_____ T:_____

Item

Carried Forward R

Brought Forward R

102 **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

103 **E22 VIEWING THE SITE IN SECURITY AREAS**

If the site is situated in a security area, the Bidder must arrange with the Authorities to obtain permission to enter the site for Bidding purposes.

F:_____ V:_____ T:_____

Item

Carried Forward R

		Brought Forward			R
104	**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		
105	**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			R

Brought Forward R

106 **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

107 **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

Carried Forward R

		Brought Forward			R
108	**E27**	**NATURE AND EXTENT OF WORK** The broad scope of the work comprises repairs, renovation, alterations, external works, etc. necessitated by **Disaster Storm Damage**. F:_____ V:_____ T:_____	Item		
109	**E28**	**PROTECTION OF EXISTING** Every care shall be taken to protect all parts of the building and ground against disfigurement of any kind. The Contractor shall be responsible for any damage caused to vehicles, persons or property by his operations, and he will be required to supply and maintain such temporary measures as are required, to prevent such damage. F:_____ V:_____ T:_____	Item		
110	**E29**	**ACCESS** The Contractor is to allow for all costs associated with sites having restricted access due to location, road conditions, etc. The Contractor to note the sites have extremely restricted access and in some instances, restricted access may affect the delivery of materials, etc. The Contractor to accordingly ensure the most suitable and effective access routes are investigated and implemented to achieve continuity of the works. F:_____ V:_____ T:_____	Item		
		Carried Forward			R

		Brought Forward			R
111	**E30**	**SAFETY TO THE SITE** All scaffolding, protection, machinery and tools on the site shall be erected, used and/or maintained in accordance of the requirements of the Occupational Health and Safety Act (85/1993) as amended and any regulations thereto. All relevant local authority bylaws shall also be complied with. The Contractor to provide suitable hoarding to demarcate the area of the construction works from the other adjacent operational areas. All open excavations and incomplete construction work to be cordoned off with danger tape. F:_____ V:_____ T:_____	Item		
112	**E31**	**ASBESTOS CEMENT** All preparatory work, alterations, demolitions, etc. to existing asbestos cement roof sheeting, gutters, rainwater pipes, etc. are to be carried out strictly 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 resulting from cleaning operations, etc. Allowance is to be made for costs associated with compliance with these Regulations. F:_____ V:_____ T:_____	Item		
		Carried Forward			R

	Brought Forward			R
113	**E32 EXISTING PREMISES OCCUPIED** The Contractor shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining building and occupants. He shall provide proper protection and provide, erect and remove when directed, any temporary tarpaulins, temporary fences that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent. The Contractor may have to sequence noisy activities during school hours. In addition, no disruptions will be entertained during examinations. F:_____ V:_____ T:_____		Item	

SUMMARY OF CATEGORIES

Category : Fixed R_____

Category : Value R_____

Category : Time R_____

Carried to Final Summary on page 114

R

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

PART C2.3 BILL OF QUANTITIES

Item No		Quantity	Rate	Amount

SECTION NO. 2 (CRITICAL STORM DAMAGE)

BILL NO. 1

ALTERATIONS AND DEMOLITIONS (PROVISIONAL)

(CPAP WORK GROUP NO. 102 UNLESS OTHERWISE STATED)

The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition)

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.

Explosives

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

Taking Out and Removal of Asbestos

Taking out and removing asbestos roof, gutters, underlay, fibreglass, downpipes, etc. must be in strict accordance with health and occupational safety regulations and a specialist firm must be contracted to dispose of the material.

Carried Forward R

Brought Forward R

General

Descriptions of taking out shall be deemed to include carting away from site to a dump ground to be found by the Contractor.

The Contractor shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining premises and their tenants. 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.

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.

Doors, fanlights, fittings, frames, linings, etc. which are to be re-used shall be thoroughly overhauled before re-fixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc., and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately.

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

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.

Carried Forward R

				R
	Brought Forward			
	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.).			
	The Contractor to acknowledge that sequencing of the work will be necessary to accommodate the operational aspects of the school. The Contractor to accordingly factor the above requirement in the construction programme and pricing.			
	REMOVAL OF EXISTING WORK			
	Taking down and removing roofs, floors, panelling ceilings, partitions, etc. completely (new work elsewhere measured) including carting away			
1	Asbestos roof sheeting including timber trusses, purlins, ridge capping and provision of certificate of safe disposal for asbestos and the weighbridge receipt from the disposal company	m2	450	
2	Aluminium rainwater gutters and fixings	m	86	
3	Aluminium rainwater downpipes and fixings	m	20	
4	Fibre cement fascia boards and fixings	m	68	
5	Fibre cement barge boards and fixings	m	27	
	Hacking up/off and removing granolithic, screeds, plaster, etc. from concrete or brickwork and preparing surfaces for new screeds, plaster, etc. (elsewhere measured)			
6	Hacking out mortar packing in beamfilling	m2	19	
	Carried Forward			R

	Brought Forward		R	
	BUDGETARY ALLOWANCES			
7	Allow a sum of 25,000.00 (Twenty Five Thousand Rands) for Asbestos Inspection Authority (AIA) to be appointed by the Department of Public Works via the awarded contractor. The Awarded contractor will be expected to provide three (3) quotes for AIA services for approval and acceptance by Department of Public Works and will then be appointed by the Contractor and paid by the Contractor. The appointed AIA and the appointed Asbestos contractor for removal and disposal will not be the same entity / company. Refer to duties for AIA and Asbestos contractor attached.	Item		25 000.00
8	Profit and Attendance The duties and responsibilities of the appointed AIA s briefly the following in terms of the Asbestos Abatement Regulations of 2020 : 1. If there is no Asbestos Inventory available the AIA will develop the Inventory for the Client. 2. If there is an Asbestos Inventory the AIA will review the Inventory and Risk Assessment and if needed amend. 3. Based on the Inventory recommend and the anticipated Scope of Work, advise the Client of what category of Asbestos Contractor needs to be appointed. 4. When the asbestos Contractor is appointed, in consultation with the Asbestos Contractor develop and approve the Plan of Work. 5. Upon approval of the Asbestos Plan, at least 7 days before work is scheduled to take place submit the plan to Department of Employment and Labour. 6. Ensure that acknowledgement of Work Plan Submission to Department of Employment and Labour is received within the 7 day period.	Item		
	Carried Forward		R	

Brought Forward			R
7. Ensure that Medical Fitness certificates and Asbestos training records are available.			
8. Provide guidance and site specific instructions to the Asbestos removal and disposal Sub- Contractor.			
9. Inspect work activities and if needed to stop work which is not in accordance with the approved work plan or posing a risk to health and safety of persons.			
10. Perform planned air monitoring to determine exposure levels.			
11. Conduct analysis of air monitoring samples.			
12. Provide Client with report on findings and issue a Clearance To the Client as well as ensuring that Client is provided with Disposal certificates.			
Carried Forward to Summary of Section No. 2			R

Item No		Quantity	Rate	Amount
	SECTION NO. 2 (CRITICAL STORM DAMAGE)			
	BILL NO. 2			
	MASONRY (PROVISIONAL)			
	(CPAP WORK GROUP NO. 118 UNLESS OTHERWISE STATED)			
	SUPPLEMENTARY PREAMBLES			
	BRICKWORK			
	Sizes in descriptions			
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick.			
	Hollow walls, etc.			
	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.			
	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 "Brixeal" bitumen emulsion waterproofing coating.			
	Face bricks			
	Bricks shall be ordered timeously to obtain uniformity in size and colour.			
	Carried Forward		R	

	Brought Forward			R
	Pointing			
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
	BRICKWORK SUNDRIES			
	Galvanised wire ties, etc.			
1	30 x 1.6mm Roof tie 1,6m long with one end built into brickwork and other end fixed to timber	No	28	
	Mortar packing			
2	Mortar packing in beamfilling	m2	19	
	Carried Forward to Summary of Section No. 2			R

Section No. 2
Bill No. 2
MASONRY (PROVISIONAL)
LDM QUANTITY SURVEYORS

Item No			Quantity	Rate	Amount
	SECTION NO. 2 (CRITICAL STORM DAMAGE)				
	BILL NO. 3				
	ROOF COVERINGS (PROVISIONAL)				
	(CPAP WORK GROUP NO. 124 UNLESS OTHERWISE STATED)				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0.58mm Colorbond IBR profile sheeting, colour one side fixed to timber purlins (elsewhere measured) and fixed strictly in accordance with the manufacturer's instructions				
1	Roof covering with pitch not exceeding 25 degrees	m2	450		
2	Standard galvanised ridge capping (500mm girth) screwed through sheeting to purlins	m	64		
3	Sondor IBR pattern polycloser under capping	m	128		
4	Sondor IBR pattern metal closers under capping	m	128		
5	Cover flashings 150mm girth	m	67		
	ROOF AND WALL INSULATION				
	"Sisalation 420" or equal and approved heavy industrial grade aluminium foil based insulation				
6	Insulation laid taut over purlins (at approximately 450mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m2	450		
	Carried Forward to Summary of Section No. 2			R	

Item No		Quantity	Rate	Amount
	SECTION NO. 2 (CRITICAL STORM DAMAGE)			
	BILL NO. 4			
	CARPENTRY AND JOINERY (PROVISIONAL)			
	(CPAP WORK GROUP NO. 126 UNLESS OTHERWISE STATED)			
	ROOFS, ETC.			
	PREFABRICATED TIMBER ROOF TRUSSES, ETC.			
	NOTE:			
	Timber roof trusses are to comply with SABS Code of Practice 0243. (The design, manufacture and erection of timber trusses, including nail-plated and bolted trusses with lapped members).			
	The following is applicable in respect of roof trusses:			
	Trusses are at maximum 1200mm centres. Roof covering is IBR profiled metal sheeting colour one side on 50 x 76mm purlins. Ceilings are nailed gypsum plasterboard on brandering.			
	The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from site before design or fabrication commences.			
	Carried Forward		R	

				R	
	Brought Forward				
	Design and supply plate nailed timber roof trusses including issue of TR1 and TR2 certificates after completion of entire roof installation, signed by a competent person				
1	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations, including cross battens at hips, valleys, etc. fixed to trusses with and including ring shank nails, temporary and permanent bracing, etc. and issue of TR1 and TR2 certificates after completion of entire roof installation, signed by a competent person, to suit roof area approximate size **(200m2) (on flat floor area inclusive of overhangs, etc.) - Block D**			SUM	
2	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations, including cross battens at hips, valleys, etc. fixed to trusses with and including ring shank nails, temporary and permanent bracing, etc. and issue of TR1 and TR2 certificates after completion of entire roof installation, signed by a competent person, to suit roof area approximate size **(88m2) (on flat floor area inclusive of overhangs, etc.) - Block I**			SUM	
	Wrought softwood				
3	38 x 114mm Bolted wall plates	m	126		
4	38 x 114mm Timber rafter	m	2		
5	76 x 50mm Purlins	m	336		
6	76 x 114mm False Timber fixed onto truss for fascia and barge boards	m	28		
	EAVES, VERGES, ETC.				
	Pressed Nutec or equal and approved cement boards				
7	10 x 225mm Fascia boards including joiners	m	68		
	Carried Forward			R	

	Brought Forward			R
8	10 x 225mm Barge boards including H profile jointing strips	m	27	
	Carried Forward to Summary of Section No. 2			R

Section No. 2
Bill No. 4
CARPENTRY AND JOINERY (PROVISIONAL)
LDM QUANTITY SURVEYORS

Item No			Quantity	Rate	Amount
	SECTION NO. 2 (CRITICAL STORM DAMAGE)				
	BILL NO. 5				
	PLASTERING (PROVISIONAL)				
	(CPAP WORK GROUP NO. 142 UNLESS OTHERWISE STATED)				
	INTERNAL PLASTER				
	Cement plaster on brickwork				
1	On beamfilling	m2	19		
	EXTERNAL PLASTER				
	Cement plaster on brickwork				
2	On beamfilling	m2	19		
	Carried Forward to Summary of Section No. 2			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2 (CRITICAL STORM DAMAGE)				
	BILL NO. 6				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)				
	RAINWATER DISPOSAL				
	'Seamless' aluminium				
1	150 x 150mm Box gutters with baked enamel finish fixed with concealed brackets	m	86		
2	100 x 75mm Fluted aluminium downpipes with baked enamel finish	m	20		
3	Extra over eaves gutter for stopped ends	No	8		
4	Extra over eaves gutter for drop box suitable for 150 x 150mm box gutter	No	8		
5	Extra over eaves gutter for bends	No	16		
6	Extra over eaves gutter for shoes	No	8		
	Carried Forward to Summary of Section No. 2			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2 (CRITICAL STORM DAMAGE)				
	BILL NO. 7				
	PAINTWORK (PROVISIONAL)				
	(CPAP WORK GROUP NO. 152 UNLESS OTHERWISE STATED)				
	PAINTWORK, ETC. TO NEW WORK				
	"PLASCON" OR EQUAL AND APPROVED				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Prepare and brush surface to remove all loose contaminants, apply one undercoat and two coats PVA emulsion paint for interior use				
1	On beamfilling	m2	19		
	ON EXTERNAL FLOATED PLASTER SURFACES				
	Prepare and brush surface to remove all loose contaminants, apply one undercoat and two coats PVA emulsion paint for external use				
2	On beamfilling	m2	19		
	ON FIBRE-CEMENT BOARD SURFACES				
	Prepare and brush surface to remove all loose contaminants, apply one undercoat and two coats superior quality acrylic emulsion paint for exterior use				
3	On fascia and barge boards, including priming metal jointing strips	m2	23		
	Carried Forward to Summary of Section No. 2			R	

SECTION SUMMARY - CRITICAL STORM DAMAGE

Carried to Final Summary on page 114 R

Section No. 2
LDM QUANTITY SURVEYORS

Item No		Quantity	Rate	Amount

SECTION NO. 3 (NON CRITICAL STORM DAMAGE)

BILL NO. 1

ALTERATIONS AND DEMOLITIONS (PROVISIONAL)

(CPAP WORK GROUP NO. 102 UNLESS OTHERWISE STATED)

The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition)

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.

Explosives

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

Taking Out and Removal of Asbestos

Taking out and removing asbestos roof, gutters, underlay, fibreglass, downpipes, etc. must be in strict accordance with health and occupational safety regulations and a specialist firm must be contracted to dispose of the material.

Carried Forward R

Brought Forward R

General

Descriptions of taking out shall be deemed to include carting away from site to a dump ground to be found by the Contractor.

The Contractor shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining premises and their tenants. 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.

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.

Doors, fanlights, fittings, frames, linings, etc. which are to be re-used shall be thoroughly overhauled before re-fixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc., and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately.

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

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.

Carried Forward R

				R
	Brought Forward			
	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.).			
	The Contractor to acknowledge that sequencing of the work will be necessary to accommodate the operational aspects of the school. The Contractor to accordingly factor the above requirement in the construction programme and pricing.			
	REMOVAL OF EXISTING WORK			
	Taking out and removing timber doors, etc.			
1	Timber single door from steel frame 813 x 2032mm high overall from one brick wall	No	17	
	Breaking up and removing brickwork			
2	Air vents approximate size 220 x 150mm	No	108	
3	Hacking out mortar packing in beamfilling	m2	78	
	Breaking up and removing damaged glass			
4	Glass from steel windows including cleaning out rebates and preparing for new glass (elsewhere measured)	m2	14	
	Taking down and removing roofs, floors, panelling ceilings, partitions, etc. completely (new work elsewhere measured) including carting away			
5	Asbestos roof sheeting including timber purlins, trusses and provision of certificate of safe disposal for asbestos and the weighbridge receipt from the disposal company	m2	833	
6	Asbestos roof sheeting including timber purlins and provision of certificate of safe disposal for asbestos and the weighbridge receipt from the disposal company	m2	950	
	Carried Forward			R

				R
	Brought Forward			
7	Gypsum plasterboard ceilings including cornices, timber brandering, etc.	m2	104	
8	Aluminium rainwater gutters and fixings	m	205	
9	Aluminium rainwater downpipes and fixings	m	15	
10	Fibre cement fascia boards and fixings	m	205	
11	Fibre cement barge boards and fixings	m	92	
	Taking out and removing ironmongery			
12	132mm Brass window latches including catches, etc.	No	224	
13	Existing damaged chalkboards 2400 x 1200mm high	No	8	
	Hacking up/off and removing granolithic, screeds, plaster, etc. from concrete or brickwork and preparing surfaces for new screeds, plaster, etc. (elsewhere measured)			
14	Average 25mm screed from floors	m2	660	
15	Average 25mm thick screed skirting	m	61	
16	Average 25mm screed from floors in patches	m2	62	
17	External plaster from wall in patches	m2	198	
18	Internal plaster from walls in patches	m2	423	
	MAKING GOOD OF FINISHES, ETC.			
	Putty to existing steel windows			
19	Scrape out existing putty to steel windows including cleaning out rebates and replace with new putty	m	1 702	
	Carried Forward			R

				R
	Brought Forward			
	STRUCTURAL REPAIRS			
	Repairs to structural cracks, etc.			
20	Rake out existing structural crack, remove all debris/loose material including cutting or drilling slots (60mm deep) in brickwork at 250mm centres to embed steel rods (elsewhere measured)	m	394	
	Cleaning of floors			
21	Cleaning of existing floors to receive new wax polish (elsewhere measured)	m2	322	
22	Provide the amount of R50,000.00 (Fifty Thousand Rand) for the demolition of brick piers and install reinforced concrete columns and bases which shall be authorized by the Principal Agent/Engineer, and all costs will be agreed as per schedule rates, or at rates to be agreed in accordance with the provisions of the contract		Item	50 000.00
	TEMPORARY ACCOMMODATION			
23	Rental of temporary accommodation approximate size 12m x 3m wide, including standard windows, burglar bars, curtains and tracks, two tier steps for access, light fittings, electrical certificate of compliance, transportation, establishment on site and de-establishment on completion for a period of 8 calendar months	No	3	
	Carried Forward to Summary of Section No. 3			R

Item No		Quantity	Rate	Amount

SECTION NO. 3 (NON CRITICAL STORM DAMAGE)

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT (PROVISIONAL)

(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)

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)

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.

Carried Forward R

	Brought Forward			R
	Formwork to soffits of solid slabs etc. shall be deemed to be to slabs not exceeding 250mm thick 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".			
	CONCRETE SUNDRIES			
	"Prostruct 617" or equal and approved			
1	Apply general purpose epoxy adhesive, grouted into existing brickwork, 10mm deep x 20mm wide to secure rebar (elsewhere measured)	m	394	
	REINFORCEMENT			
	(CPAP WORK GROUP NO. 114 UNLESS OTHERWISE STATED)			
	High tensile steel reinforcement to structural concrete work			
2	Bars of varying diameters	t	0.302	
	Carried Forward to Summary of Section No. 3			R

Section No. 3
Bill No. 2
CONCRETE,FORMWORK,REINFORCEMENT(PROVISIONAL)
LDM QUANTITY SURVEYORS

Item No		Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)			
	BILL NO. 3			
	MASONRY (PROVISIONAL)			
	(CPAP WORK GROUP NO. 118 UNLESS OTHERWISE STATED)			
	SUPPLEMENTARY PREAMBLES			
	BRICKWORK			
	Sizes in descriptions			
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick.			
	Hollow walls, etc.			
	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.			
	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 "Brixeal" bitumen emulsion waterproofing coating.			
	Face bricks			
	Bricks shall be ordered timeously to obtain uniformity in size and colour.			
	Carried Forward		R	

				R
	Brought Forward			
	Pointing			
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
	Galvanised wire ties, etc.			
1	30 x 1.6mm roof tie 1,6m long with one end built into brickwork and other end fixed to timber	No	72	
	Air bricks, etc.			
2	Air vents approximate size 220 x 150mm	No	108	
	Mortar packing			
3	Mortar packing in beamfilling	m2	78	
	Brickwork Sundries			
4	Provide the amount of R40,000.00 (Forty Thousand Rand) strapping of division walls to external walls which shall be authorized by the Principal Agent/Engineer, and all costs will be agreed as per schedule rates, or at rates to be agreed in accordance with the provisions of the contract		Item	40 000.00
5	Provide the amount of R15,000.00 (Fifteen Thousand Rand) for building in lintels over doors including making good which shall be authorized by the Principal Agent/Engineer, and all costs will be agreed as per schedule rates, or at rates to be agreed in accordance with the provisions of the contract		Item	15 000.00
	Carried Forward to Summary of Section No. 3			R

Section No. 3
Bill No. 3
MASONRY (PROVISIONAL)
LDM QUANTITY SURVEYORS

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 4				
	WATERPROOFING (PROVISIONAL)				
	(CPAP WORK GROUP NO. 120 UNLESS OTHERWISE STATED)				
	WATERPROOFING TO ROOFS, BASEMENTS, ETC.				
	Apply three coats "Sika RainTite Kit" or equal and approved resistant acrylic emulsion waterproofing paint, one base coat with kit membrane and embed into base coat, apply one saturator coat and one top coat				
1	On fibre cement sheeting in patches including ridge and over screw heads	m2	170		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 5				
	ROOF COVERINGS (PROVISIONAL)				
	(CPAP WORK GROUP NO. 124 UNLESS OTHERWISE STATED)				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0.58mm Colorbond IBR profile sheeting, colour one side fixed to timber purlins (elsewhere measured) and fixed strictly in accordance with the manufacturer's instructions				
1	Roof covering with pitch not exceeding 25 degrees	m2	1 783		
2	Standard galvanised ridge capping (500mm girth) screwed through sheeting to purlins	m	140		
3	Sondor IBR pattern polycloser under capping	m	280		
4	Sondor IBR pattern metal closers under capping	m	280		
5	Cover flashings 150mm girth	m	140		
6	Provide the amount of R30,000.00 (Thirty Thousand Rand) for exposing blockwork and building hoop iron ties to trusses including making good which shall be authorized by the Principal Agent/Engineer, and all costs will be agreed as per schedule rates, or at rates to be agreed in accordance with the provisions of the Contract		Item		30 000.00
	Carried Forward			R	

	Brought Forward			R
	ROOF AND WALL INSULATION			
	"Sisalation 420" or equal and approved heavy industrial grade aluminium foil based insulation			
7	Insulation laid taut over purlins (at approximately 450mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m2	1 783	
	Carried Forward to Summary of Section No. 3			R

Section No. 3
Bill No. 5
ROOF COVERINGS (PROVISIONAL)
LDM QUANTITY SURVEYORS

Item No		Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)			
	BILL NO. 6			
	CARPENTRY AND JOINERY (PROVISIONAL)			
	(CPAP WORK GROUP NO. 126 UNLESS OTHERWISE STATED)			
	ROOFS, ETC.			
	PREFABRICATED TIMBER ROOF TRUSSES, ETC.			
	NOTE:			
	Timber roof trusses are to comply with SABS Code of Practice 0243. (The design, manufacture and erection of timber trusses, including nail-plated and bolted trusses with lapped members).			
	The following is applicable in respect of roof trusses:			
	Trusses are at maximum 1200mm centres. Roof covering is IBR profiled metal sheeting colour one side on 50 x 76mm purlins. Ceilings are nailed gypsum plasterboard on brandering.			
	The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from site before design or fabrication commences.			
	Carried Forward		R	

	Brought Forward			R	
	Design and supply plate nailed timber roof trusses including issue of TR1 and TR2 certificates after completion of entire roof installation, signed by a competent person				
1	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations, including cross battens at hips, valleys, etc. fixed to trusses with and including ring shank nails, temporary and permanent bracing, etc. and issue of TR1 and TR2 certificates after completion of entire roof installation, signed by a competent person, to suit roof area approximate size **(160m2) (on flat floor area inclusive of overhangs, etc.) - Block C**			SUM	
2	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations, including cross battens at hips, valleys, etc. fixed to trusses with and including ring shank nails, temporary and permanent bracing, etc. and issue of TR1 and TR2 certificates after completion of entire roof installation, signed by a competent person, to suit roof area approximate size **(242m2) (on flat floor area inclusive of overhangs, etc.) - Block F**			SUM	
3	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations, including cross battens at hips, valleys, etc. fixed to trusses with and including ring shank nails, temporary and permanent bracing, etc. and issue of TR1 and TR2 certificates after completion of entire roof installation, signed by a competent person, to suit roof area approximate size **(250m2) (on flat floor area inclusive of overhangs, etc.) - Block G**			SUM	
	Wrought softwood				
4	38 x 114mm Bolted wall plates	m	158		
5	38 x 114mm Timber bearers	m	5		
6	38 x 114mm Timber rafter	m	10		
7	76 x 50mm Cross bracing	m	162		
	Carried Forward			R	

				R
	Brought Forward			
8	76 x 50mm Purlins	m	1 824	
9	Top chord bracing including hanger brackets	m	246	
10	Bottom chord bracing including hanger brackets	m	246	
	EAVES, VERGES, ETC.			
	Pressed Nutec or equal and approved cement boards			
11	10 x 225mm Fascia boards including joiners	m	205	
12	10 x 225mm Barge boards including H profile jointing strips	m	92	
	DOORS, ETC.			
	Wrought Meranti or equal and approved doors			
13	40mm Framed, ledged and braced battened door size 813 x 2032mm high of 40 x 110mm wide top rail and stiles, 20 x 150mm middle ledge, 20 x 225mm bottom ledge and 20 x 110mm braces	No	17	
	Carried Forward to Summary of Section No. 3			R

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 7				
	CEILINGS, PARTITIONS AND ACCESS FLOORING (PROVISIONAL)				
	(CPAP WORK GROUP NO. 129 UNLESS OTHERWISE STATED)				
	NAILED-UP CEILINGS				
	The following ceiling systems are to be manufactured, supplied and installed in strict accordance with the manufacturer/suppliers specifications				
	9,5mm 'Rhinoboard' or equal and approved M-Strip ceiling fixed print side up including brandering with 32mm galvanised clout nails or 32mm grabber screws at 150mm centres with plastic 'M-Strip' cover strips over joints with all nail or screw heads stopped and sanded level, all in strict accordance with the manufacturer's instructions				
1	Ceilings including 38 x 38mm sawn softwood brandering at 500mm centres in one direction to trusses	m2	104		
2	Extra over ceiling for 600 x 600mm trap door including rebated framing cross branders covered with ceiling board and fitted flush in opening	No	2		
	CORNICES				
	'Everite Nutec' or equal and approved cornices				
3	75mm Coved cornice	m	236		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 8				
	FLOOR COVERINGS, WALL LININGS, ETC. (PROVISIONAL)				
	(CPAP WORK GROUP NO. 130 UNLESS OTHERWISE STATED)				
	POLISH, SEALERS, ETC.				
	Polish, sealers, etc.				
1	Wax polish to floors	m2	322		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 9				
	IRONMONGERY (PROVISIONAL)				
	(CPAP WORK GROUP NO. 132 UNLESS OTHERWISE STATED)				
	HINGES, BOLTS, ETC.				
1	Stainless steel two ball bearing butt hinge, size 100 x 75 x 3mm 095/76 with satin stainless steel finish	Pairs	17.0		
	WINDOW MECHANISMS				
	New Window Mechanisms				
2	Howick Metals or equal and approved 132mm brass window handle R/H, including brackets, etc.	No	112		
3	Howick Metals or equal and approved 132mm brass window handle L/H, including brackets, etc.	No	112		
	LOCKS				
	"Union" or equal and approved				
4	152 x 41 x 7mm "CZ682-24-52" chromium plated 3 lever lockset	No	17		
	SUNDRIES				
	"Union" or equal and approved				
5	38mm Diameter rubber door stop, plugged and screwed to floor with 50mm long brass screw	No	17		
	Carried Forward			R	

	Brought Forward				R
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC.				
	Pinning Boards, etc.				
6	2400 x 1200mm high green chalkboard to comply with CK-38-1980 complete with chalk rails as one unit	No	8		
	Carried Forward to Summary of Section No. 3				R

Section No. 3
Bill No. 9
IRONMONGERY (PROVISIONAL)
LDM QUANTITY SURVEYORS

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 10				
	PLASTERING (PROVISIONAL)				
	(CPAP WORK GROUP NO. 152 UNLESS OTHERWISE STATED)				
	SCREEDS				
	Screeds steel trowelled, on concrete				
1	25mm Thick on floors and landings	m2	660		
2	25mm Thick on floors and landings in patches	m2	62		
3	25mm Thick screed skirting	m	61		
	INTERNAL PLASTER				
	Cement plaster on brickwork				
4	On walls	m2	289		
5	On walls in patches	m2	423		
6	On beamfilling	m2	78		
	EXTERNAL PLASTER				
	Cement plaster on brickwork				
7	On walls in patches	m2	198		
8	On beamfilling	m2	78		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2 (CRITICAL STORM DAMAGE)				
	BILL NO. 11				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)				
	RAINWATER DISPOSAL				
	'Seamless' aluminium				
1	150 x 150mm Box gutters with baked enamel finish fixed with concealed brackets	m	205		
2	100 x 75mm Fluted aluminium downpipes with baked enamel finish	m	15		
3	Extra over eaves gutter for stopped ends	No	12		
4	Extra over eaves gutter for drop box suitable for 150 x 150mm box gutter	No	6		
5	Extra over eaves gutter for bends	No	12		
6	Extra over eaves gutter for shoes	No	6		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 12				
	GLAZING (PROVISIONAL) (CPAP WORK GROUP NO. 150 UNLESS OTHERWISE STATED)				
	GLAZING TO STEEL WITH PUTTY				
	6mm Thick safety glass				
1	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	14		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 13				
	PAINTWORK (PROVISIONAL)				
	(CPAP WORK GROUP NO. 152 UNLESS OTHERWISE STATED)				
	PAINTWORK, ETC. TO PREVIOUSLY PAINTED WORK				
	"PLASCON" OR EQUAL AND APPROVED				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Prepare and brush surface to remove all loose contaminants, apply one undercoat and two coats interior quality acrylic emulsion paint				
1	On plastered walls	m2	1 363		
	ON EXTERNAL FLOATED PLASTER SURFACES				
	Prepare and brush surface to remove all loose contaminants, apply one undercoat and two coats exterior quality acrylic emulsion paint				
2	On plastered walls	m2	902		
	ON FIBRE-CEMENT BOARD SURFACES				
	Prepare and brush surface to remove all loose contaminants, apply one undercoat and two coats superior quality acrylic emulsion paint for exterior use				
3	On fascia and barge boards, including priming metal jointing strips	m2	113		
	Carried Forward			R	

				R
	Brought Forward			
	ON METAL			
	Prepare and brush surface to remove all loose contaminants, apply one coat galvanised iron primer, one universal undercoat and two coats of super enamel paint			
4	On steel windows, frames, etc.	m2	479	
5	On doors frames	m2	37	
6	On steel burglar guards	m2	408	
7	On steel purlins, rails, rafters, etc.	m2	23	
	PAINTWORK, ETC. TO NEW WORK			
	"PLASCON" OR EQUAL AND APPROVED			
	ON INTERNAL FLOATED PLASTER SURFACES			
	Prepare and brush surface to remove all loose contaminants and one coat alkali resistant primer, one undercoat and two coats PVA emulsion paint for interior use			
8	On plastered walls	m2	289	
9	On plastered walls in patches	m2	423	
10	On beamfilling	m2	78	
	ON EXTERNAL FLOATED PLASTER SURFACES			
	Prepare and brush surface to remove all loose contaminants and apply one coat alkali resistant primer, one undercoat and two coats PVA emulsion paint for external use			
11	On plastered walls in patches	m2	198	
12	On beamfilling	m2	78	
	Carried Forward			R

	Brought Forward				R
	ON PLASTERBOARD SURFACES				
	Prepare and brush surface to remove all loose contaminants and apply one coat alkali resistant primer, one undercoat and two coats PVA emulsion paint for interior use				
13	On ceilings and cornices	m2	122		
	ON FIBRE-CEMENT BOARD SURFACES				
	Prepare and brush surface to remove all loose contaminants, apply one coat alkali resistant primer, one undercoat and two coats superior quality acrylic emulsion paint for exterior use				
14	On fascias and barge boards, including priming metal jointing strips	m2	69		
	ON WOOD				
	Prepare and sand down surface to remove all loose contaminants and apply two coats superior quality polyurethane varnish				
15	On doors	m2	68		
	Carried Forward to Summary of Section No. 3				R

Item No			Quantity	Rate	Amount
	SECTION NO. 3 (NON CRITICAL STORM DAMAGE)				
	BILL NO. 14				
	EXTERNAL WORKS (PROVISIONAL)				
	The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition)				
	APRONS AND V- DRAINS				
	SITE CLEARANCE, ETC.				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc.	m2	277		
	EARTHWORKS (PROVISIONAL)				
	(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)				
	EXCAVATION OTHER THAN BULK				
	Excavation in earth not exceeding 2m deep				
2	Reduced levels under floors	m3	28		
	CARTING AWAY				
	Extra over all excavations for loading, carting and dumping surplus excavated material				
3	Off site to be located by the Contractor	m3	28		
	Carried Forward			R	

	Brought Forward			R	
	COMPACTION				
	Compaction of surfaces				
4	Compaction of ground surfaces 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	m2	277		
	SOIL POISONING				
	Soil insecticide				
5	Under floors, etc. including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming	m2	277		
	CONCRETE, FORMWORK AND REINFORCEMENT				
	(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)				
	REINFORCED CONCRETE CAST ON/IN FORMWORK				
	25MPa/19mm Concrete				
6	Surface beds, slabs, etc. to falls and currents	m3	28		
	Finishing top surfaces of concrete with a wood float finish				
7	Concrete channel to falls	m2	277		
	Carried Forward			R	

				R
	Brought Forward			
	ROUGH FORMWORK (DEGREE OF ACCURACY II) (PROVISIONAL)			
	(CPAP WORK GROUP NO. 111 UNLESS OTHERWISE STATED)			
	Rough Formwork to Sides			
8	Apron slabs, paving and ramps not exceeding 300mm high	m	277	
	Expansion joints with 10mm softboard between vertical concrete and brick surfaces			
9	10mm Joints not exceeding 300mm high	m	277	
	Joint sealants, etc.			
	"ABE Flexothane" or equal and approved two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc.			
10	In 10mm joints not exceeding 300mm high	m	277	
	REINFORCEMENT (PROVISIONAL)			
	(CPAP WORK GROUP NO. 114 UNLESS OTHERWISE STATED)			
	Fabric reinforcement			
11	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	277	
	WATER TANK STANDS			
	Tenderers are to refer to Engineers Standard Specification			
	Carried Forward			R

	Brought Forward				R
	EXCAVATION OTHER THAN BULK (PROVISIONAL)				
	(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)				
	Excavation in earth not exceeding 2m deep				
12	Bases	m3	18		
	Extra over trench and hole excavation in earth for excavation in				
13	Hard rock	m3	6		
	CARTING AWAY				
	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk)				
14	Off site to be located by the Contractor	m3	6		
	EARTH FILLING, ETC.				
	Note: All filling whether obtained from the excavations, from stockpiles or by the Contractor from an outside source must be selected and approved by the Structural / Civil Engineers				
	Filling with material from the excavations compacted to a density of at least 93% Mod. AASHTO density				
15	Backfilling to trenches, holes, etc.	m3	18		
	KEEPING EXCAVATIONS FREE OF WATER				
	Keeping excavations free of water				
16	Allow for keeping excavations free of water other than subterranean water		Item		
	Carried Forward				R

	Brought Forward			R
	COMPACTION			
	Compaction of surfaces			
17	Compaction of ground surfaces under floors, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod. AASHTO density	m2	42	
	TESTS			
	Prescribed density tests on filling			
18	Modified AASHTO Density test	No	6	
	SOIL POISONING			
	Soil insecticide			
19	Under floors, etc. including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming	m2	78	
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (PROVISIONAL)			
	(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)			
	10MPa/19mm Concrete			
20	Surface blinding under footings, bases, etc.	m3	6	
	REINFORCED CONCRETE (PROVISIONAL)			
	(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)			
	25MPa/19mm Concrete			
21	Surface beds	m3	6	
	Carried Forward			R

					R
	Brought Forward				
22	Bases	m3	12		
	TEST BLOCKS				
	Test blocks				
23	Prepare a set of six concrete cubes each cube size 150 x 150 x 150mm for strength cubes and deliver to an approved laboratory for testing and pay all charges in connection therewith	Sets	6.00		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete with a wood float				
24	Surface beds, slabs, etc.	m2	18		
	ROUGH FORMWORK (DEGREE OF ACCURACY III) (PROVISIONAL)				
	(CPAP WORK GROUP NO. 111 UNLESS OTHERWISE STATED)				
	Rough Formwork to Sides				
25	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	60		
	Boxing in smooth formwork to form				
26	50mm Horizontal chamfer at corner	m	60		
	REINFORCEMENT (PROVISIONAL)				
	(CPAP WORK GROUP NO. 114 UNLESS OTHERWISE STATED)				
	Mild steel reinforcement to structural concrete work				
27	10mm Diameter bars	t	0.528		
	Carried Forward				R

	Brought Forward			R	
	BRICKWORK IN FOUNDATIONS (PROVISIONAL)				
	(CPAP WORK GROUP NO. 118 UNLESS OTHERWISE STATED)				
	Brickwork of NFX (14 MPa nominal compressive strength) clay imperial bricks in cement mortar				
28	One brick wall	m2	48		
	BRICKWORK IN SUPERSTRUCTURE				
	Brickwork of NFP Bricks in Class II mortar				
29	One brick wall	m2	24		
	BRICKWORK SUNDRIES				
	Bagging of 1:3 cement and sand mixture				
30	On outer face of inner skin of brick walls including any additional labour required in raising wall in two separate skins and working around wire ties and / or brick reinforcing fabric	m2	24		
	Brickwork reinforcement				
31	150mm Wide reinforcement built in horizontally	m	276		
	FACE BRICKWORK				
	"Corobrik Travertine FBA" or equal and approved face bricks in stretcher bond with ruled joints and perpends internally and externally				
32	Extra over brickwork for face brickwork	m2	24		
	Carried Forward			R	

				R	
	Brought Forward				
	WATER SUPPLIES AND FIRE SERVICES (PROVISIONAL)				
	(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)				
	TAPS, VALVES, ETC.				
	"Cobra Watertech" or equal and approved				
33	15mm Rough brass hose bib tap as 'Cobra Watertech' Ref. No. 108-15 or equal and approved including hose union, wall plate elbow, etc. with couplings for copper	No	6		
	TANKS, ETC.				
	Polyethylene drinking water tanks				
34	5000 Litre low profile circular tank size 2250mm diameter x 1800mm high, with access lid and inlet hole,embedded in pedestal to a minimum of 400mm above ground level and tied down with 2 No. off 4mm galvanized double strap stay wires tied to galvanized mild steel M12 eye bolt of which is to be drilled and fixed to the 4 corners of concrete supporting base	No	6		
	UNDERPINNING				
35	Provide the amount of R40,000.00 (Forty Thousand Rand) for underpinning which shall be authorized by the Principal Agent/Engineer, and all costs will be agreed as per schedule rates, or at rates to be agreed in accordance with the provisions of the Contract		Item		40 000.00
	LANDSCAPING				
36	Provide the amount of R90,000.00 (Ninety Thousand Rand) for landscaping, topsoil, and grassing along exposed foundations which shall be authorized by the Principal Agent/Engineer, and all costs will be agreed as per schedule rates, or at rates to be agreed in accordance with the provisions of the Contract		Item		90 000.00
	Carried Forward to Summary of Section No. 3			R	

Item No		Quantity	Rate	Amount

SECTION NO. 3 (NON CRITICAL STORM DAMAGE)

BILL NO. 15

ELECTRICAL INSTALLATION (PROVISIONAL)

SUPPLEMENTARY PREAMBLES

ELECTRICAL

1. All equipment, electrical materials or methods of installation shall comply fully with SANS 10142-1 as published December 2001.
2. Proprietary items or materials where specified are to be of the brand specified - or other approved - by DPW.
3. Unless otherwise stated all items in this bill will be CPAP Work Group 160.

ELECTRICAL INSTALLATION

a) The overall completed electrical installation shall comply fully with SANS 10142-1 "The Wiring of Premises" and Telkom regulations where applicable. SANS 10142-1 takes preference over any local authority regulations pertaining to electrical installation.

b) The equipment supplied and installed shall comply fully with the requirements as set out in clause 4 "Compliance" of SANS 10142-1.

c) All work must be carried out under full time supervision of an Installation Electrician and the statutory Certificate of Compliance, as per clause 8.8 of SANS 10142-1, shall be issued after completion to the Department. Full particulars as requested under clauses 8.8.1 and 8.8.2 must be indicated on the Certificate of Compliance. The special Section 5 - "Responsibility" of clause 8.8.1 must be completed in full and duly signed off by the responsible persons and the information required under 8.8.2.

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CONDUITS

The required solid conduit work shall comply fully with the below quoted standards:

a) Screwed metallic conduit and accessories: SANS 162.
b) Plain ended metallic conduit and accessories: SANS 1007.
c) Non-metallic conduit: SANS 950 Non-metallic conduit shall be installed in accordance with Appendix C of SANS 950 and shall not be installed or used under the following conditions:
    i) Outside a building (unless protected or sheltered under eaves).
    ii) For mechanical load bearing.
    iii) Where they may be subjected to temperatures below -10oC or above 70oC for prolonged periods.
    iv) As primary electrical insulation.
    v) In areas where they may be subjected to mechanical damage.
    vi) For applications other than for which they are designed for.
d) Only in very special circumstances and with prior approval may shorter lengths of circuit wiring be carried out in the approved unarmored metal sheathed cables or in copper braided cables.

FIXING OF CONDUITS

The fixing of conduits shall be as follows:

a) Build in conduits in wall chases with cement mortar and clamps.
b) Fix conduits on wall surfaces and in roof spaces with approved saddles.
c) Cast conduit in concrete surface beds or slabs.
d) Do surface fixing level, plumb, neatly and in straight line by means of standard spacer saddles.

CHASING

All chasing shall be carried out neatly. Do not chase walls constructed of hollow blocks, locate services in the

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block cavities. Chase solid walls not deeper than one third of the wall thickness vertically and not more than one sixth horizontally. Avoid horizontal chasing where possible. Ensure that chases, holes and recesses are made so as not to impair the strength or stability of the wall or reduce the fire resistance properties of the wall. Fill chases with mortar once the conduits are in position.

Chasing and making good have not been measured separately and shall be deemed to be included in the descriptions of conduiting.

COPPER CONDUCTORS

PVC insulated copper conductors shall conform with SANS 150.

ELECTRICAL CABLES

The PVC insulated 600/1000V grade cables shall be manufactured in accordance with SANS 1507 and shall be handled and installed in accordance with SANS 0198 - "The Selection, Handling and Installation of Electric Power Cables of rating not exceeding 33 kV".

LAYING OF ELECTRIC CABLES

Excavate 600 mm below finished ground level. Encase the installed cable in river sand or sifted sand. Mark the cable route with approved concrete cable markers.

ELECTRICAL DISTRIBUTION KIOSKS AND BOARDS

Under Annexure L of SANS 10142-1 it clearly states that allowance must be made for the supply and installation of approved Surge Protection Devices (SPDs) into low voltage systems.

1. Distribution Kiosks - The kiosks shall have a weatherproof construction complete with lockable doors and shall be of the foundation mounted or root planted types. These units shall be constructed from:
a) Pre painted mild steel.
b) 3CR 12 (within 50 km of the coast and in corrosive industrial atmospheres).
c) Fiberglass (within 50 km of the coast and in

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corrosive industrial atmospheres).

d) The required surge protection devices that need to be installed in a distribution kiosk shall either be for a Zone LPZ O(A) OR LPZ O(B) with a peak current rating of 100kA.

2. Distribution Boards - The required pre-painted 1.6 mm thick mild steel boards shall either be of the flush, semi flush or surface mounted types complete with lockable doors. Each board shall be fitted with circuit labelling and legend card installed in permanently fixed steel type legend card holders. The general construction shall comply fully with SANS 1180, Part 1 for flush type boards and Part 2 for the surface types. The specified equipment shall comply with the following:

a) Molded case circuit breaker: SANS 156.
b) On load isolators: SANS 152.
c) Earth leakage relays: SANS 767.
d) Surge Protection Units: SANS 61312-1 IEC 61312-1.
e) Provision needs to be made for the required Zone LPZ1 equipment with a peak current rating of 40 kA.
f) Any distribution board said sub-distribution board shall be fitted with the required Zone LPZ2 equipment with a rating of 10Ka.
g) The internal power wiring shall comply fully with 600/1000V grade PVC insulated stranded annealed copper conductors to SANS 1507.
h) The final colour of the boards shall be determined by the architect on site at a later stage. The paint finishes shall be of a high-quality paint applied according to the best available method. Baked, enamel, electro-statically applied powder coating or similar proven methods shall be used. Painted metal shall be corrosion resistant for a period of at least 168 hours when tested in accordance with SANS Methods 155.
i) The connected load to the boards shall be balanced as equally as possible across multi-phase supplies.

LIGHT SWITCHES

Flush type - All flush type tumbler 16A, 220/250V light

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switches complete with cover plate shall be suitable for mounting inside standard type 100 x 50 mm wall boxes and shall comply fully with SANS 163 and shall further bear the mark The dimmer type units shall comply with SANS 1012.

Surface type - These units shall comply with SANS 163 and shall be provided with specially manufactured surface mounting type box.

Watertight type - Watertight switches shall be of the micro graph type suitable for surface mounting and shall bear the SANS mark. The housing shall be of galvanised cast iron or die cast aluminium with watertight cover plate and toggle. The switches shall have a porcelain base and a quick acting spring mechanism and further be rated at 16A, 220/250V.

Wall sockets - All switched and unswitched socket shall be of the same manufacture and shall conform to SANS 164 and shall bear the SANS mark for normal use under normal environmental conditions.

Switches, when installed, shall be of the tumbler operated micrograph type rated at 16A, 220/250V. Where 13A flat pin switched socket outlets are specified, these shall comply with BS 1363.

LIGHT FITTING LUMINARIES

All installed light fitting luminaires and its associated equipment shall comply fully with SANS approved equipment or materials as applicable from the 1st January 1997.

MOUNTING HEIGHTS OF OUTLETS

All electrical outlets shall be installed at the below listed heights if not specified in the symbols list on the drawings:

1. Socket outlets: 500mm above finished level
2. External wall light: 2000 mm above finished level
3. Light switches: 1400 mm (to centre of box) above finished floor level
4. Distribution board: 1800 mm to top edge of

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	board			
	LIGHT FITTING SCHEDULE			
	Light fittings supplied and installed shall be similar and equal approved to the specified equipment. The light fittings shall further comply in full with the standards and specifications applicable to all materials and components of the specified equipment. Prior approval of alternative type of fittings must first be obtained in writing before submitting a tender offer based on the alternative types.			
	ELECTRICAL INSTALLATION (PROVISIONAL)			
	GUARANTEE			
1	Guarantee the efficient and safe working of the whole installation for 12 months after hand over of the completed building to the Department.	Item		
	AS BUILT DRAWINGS			
2	Provision for the drawings showing all site cable routes, conduit routes, draw boxes and positions of outlets, etc.	Item		
	CERTIFICATE OF COMPLIANCE			
3	Provision for the Certificate of Compliance to be issued on completion of the project in addition to the detailed testing specified for Block A, F, G, H, I	Item		
	LIGHT SWITCHES/SOCKET OUTLETS/ISOLATORS			
4	All light switches, switch socket outlets and cover plates to be engraved with circuit numbers as per the distribution board layout drawings	Item		
	Carried Forward			R

	Brought Forward			R
	EARTHING SYSTEM			
5	Earthing of wash hand basin and all cold and hot water piping, by means of standard copper tape earth strapping at regular intervals of 6m and connecting same to the electrical earth system at the distribution board (6 No wash hand basins)	Item		
	SUNDRIES			
	Bonding			
6	Allow for the overall bonding of the completed electrical installation shall be carried out and tested as specified under Clause 6.13 of SANS 0142-1	Item		
	Testing and commissioning			
7	Allow for testing and commissioning the whole of the electrical installation as laid down in the specification and for re-testing as may be required after the making good of all defective work to the entire satisfaction of the Department and the Engineer	Item		
	TESTING			
8	After the installation has been completed the Electrical Contractor shall issue a certificate of compliance	Item		
9	Before issuing a certificate of compliance, an accredited person shall inspect and test each new installation or extension of an existing installations for compliance with the relevant standard	Item		
	P& G's			
10	Preliminary and General	Item		
	Carried Forward			R

				R
	Brought Forward			
	DISTRIBUTION BOARDS			
	Distribution boards complete with sheet metal trays, frames, sub frames, busbars, provision for four future circuit breakers, labeling and legend cards			
11	Typical Distribution board (4 Classroom Block) as per single line drawing 19063_3_400, supplied complete with detailed shop drawing and specification including circuit breakers, Earth & Neutral busbars	No	3	
12	Typical Distribution board (5 Classroom Block) as per single line drawing 19063_3_401, supplied complete with detailed shop drawing and specification including circuit breakers, Earth & Neutral busbars	No	2	
13	Typical Distribution board (11 Classroom Block) as per single line drawing 19063_3_402, supplied complete with detailed shop drawing and specification including circuit breakers, Earth & Neutral busbars	No	1	
14	40A CBI / HYMAG SX1-G3 single pole 230 V circuit breaker 5 kA fault level installed in existing main board	No	1	
15	40A CBI / HYMAG SX1-G3 Double pole 230 V circuit breaker 5 kA fault level installed in existing main board	No	1	
16	20A CBI / HYMAG SX1-G3 single pole 230 V circuit breaker 5 kA fault level installed in existing main board	No	1	
17	20A CBI / HYMAG SX1-G3 Double pole 230 V circuit breaker 5 kA fault level installed in existing main board	No	1	
18	Allow to work on existing distribution board and update legend card		Item	
	DISTRIBUTION CABLES			
	600/1000V rated cables laid in ground or in sleeves. To be protected when installed vertically up wall from ground			
19	35mm² 4 core PVC/SWA/ECC/PVC cable	m	5	
	Carried Forward			R

				R
	Brought Forward			
20	Termination for 35 mm² 4 core cable above	No	2	
21	16mm² 2 core PVC/SWA/ECC/PVC cable	m	10	
22	Termination for 16 mm² 2 core cable above	No	2	
23	10mm² 2 core PVC/SWA/ECC/PVC cable	m	5	
24	Termination for 10 mm² 2 core cable above	No	2	
25	10mm² 2 core Airdec cable	m	5	
26	Termination for 10 mm² 2 core cable above	No	4	
	EARTHWORKS (PROVISIONAL)(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)			
	EXCAVATION			
27	Excavate for and build cable inspection chamber with half brick sides fitted with 600 x 600 x 600 medium duty cover and frame complete with drain holes. Size internally 600 x 600 x 600mm deep	No	1	
28	Excavate not exceeding 600mm deep in soft intermediate rock material for cabling and cable pipe trench including bedding, backfilling, compaction and disposal of surplus material	m3	5	
29	Excavate not exceeding 600mm deep in hard rock for and cabling and cable pipe trench including bedding, backfilling,compaction and disposal of surplus material	m3	5	
	SLEEVES			
30	100mm PVC sleeves	m	5	
31	100mm long radius bend	No	4	
32	50mm PVC sleeves	m	10	
	Carried Forward			R

				R
	Brought Forward			
33	50mm PVC long radius bend	No	2	
34	50mm galvanised sleeves	m	5	
35	50mm long radius bend	No	2	
	LIGHTING AND SMALL POWER			
	BLOCK C			
	Thin walled hot dipped galvanised conduits			
36	20mm Diameter surface mounted on brickwork	m	85	
37	20mm Diameter fixed on timber rafters	m	101	
	Thin walled uPVC conduits			
38	20mm Diameter chased in brickwork	m	36	
39	20mm Diameter fixed on timber rafters	m	55	
	CONDUIT BOXES AND FITTINGS			
40	100 x 100 x 100/50mm Deep hot dipped galvanised box for 20mm diameter conduit in brick or concrete walls including conduit ends and cover	No	8	
41	65mm Round hot dipped galvanised box for 20mm Diameter steel conduit in brick or concrete walls or ceiling void including conduit ends and cover	No	16	
42	P9000 Trunking	m	15	
	CONDUCTORS			
	PVC insulated stranded copper conductors drawn into wire ways			
43	2.5mm²	m	1 100	
	Carried Forward			R

				R
	Brought Forward			
	LIGHT SWITCHES, SWITCHED SOCKET OUTLETS ETC.			
	Switches etc. complete with cover plates fixed in flush boxes			
44	20A surface mounted light switch	No	4	
45	20A surface mounted Three-pin switch socket outlet with euro outlet complete with cover plate	No	8	
	LUMINARIES AND EQUIPMENT			
	Luminaries or equipment complete with lamps , connections etc. mounted in position			
46	Type A - 2 x 35W T5 Magnet/Lihlelight/Q-Lite open channel fluorescent light fitting with telescopic lamp holder complete with electronic control gear	No	16	
47	Type B - Magnet/Lihlelight/Q-Lite or other approved RML round bulkhead with 1 x PL26 Watt lamp complete with electronic control gear	No	6	
48	Type D - 2 x 35W T5 Vapour proof fluorescent light fitting complete with electronic control gear	No	1	
49	Photocells inclusive of enclosure	No	1	
	BLOCK D			
	Thin walled hot dipped galvanised conduits			
50	20mm Diameter surface mounted on brickwork	m	85	
51	20mm Diameter fixed on timber rafters	m	101	
	Thin walled uPVC conduits			
52	20mm Diameter chased in brickwork	m	36	
53	20mm Diameter fixed on timber rafters	m	55	
	Carried Forward			R

				R
	Brought Forward			
	CONDUIT BOXES AND FITTINGS			
54	100 x 100 x 100/50mm Deep hot dipped galvanised box for 20mm diameter conduit in brick or concrete walls including conduit ends and cover	No	8	
55	65mm Round hot dipped galvanised box for 20mm Diameter steel conduit in brick or concrete walls or ceiling void including conduit ends and cover	No	16	
56	P9000 Trunking	m	15	
	CONDUCTORS			
	PVC insulated stranded copper conductors drawn into wire ways			
57	2.5mm²	m	1 100	
	LIGHT SWITCHES, SWITCHED SOCKET OUTLETS ETC.			
	Switches etc. complete with cover plates fixed in flush boxes			
58	20A surface mounted light switch	No	4	
59	20A surface mounted Three-pin switch socket outlet with euro outlet complete with cover plate	No	8	
	LUMINARIES AND EQUIPMENT			
	Luminaries or equipment complete with lamps , connections etc. mounted in position			
60	Type A - 2 x 35W T5 Magnet/Lihlelight/Q-Lite open channel fluorescent light fitting with telescopic lamp holder complete with electronic control gear	No	16	
61	Type B - Magnet/Lihlelight/Q-Lite or other approved RML round bulkhead with 1 x PL26 Watt lamp complete with electronic control gear	No	6	
	Carried Forward			R

				R
	Brought Forward			
62	Type D - 2 x 35W T5 Vapour proof fluorescent light fitting complete with electronic control gear	No	1	
63	Photocells inclusive of enclosure	No	1	
	BLOCK F			
	Thin walled hot dipped galvanised conduits			
64	20mm Diameter surface mounted on brickwork	m	90	
65	20mm Diameter fixed on timber rafters	m	125	
	Thin walled uPVC conduits			
66	20mm Diameter chased in brickwork	m	44	
67	20mm Diameter fixed on timber rafters	m	36	
	CONDUIT BOXES AND FITTINGS			
68	100 x 100 x 100/50mm Deep hot dipped galvanised box for 20mm diameter conduit in brick or concrete walls including conduit ends and cover	No	10	
69	65mm Round hot dipped galvanised box for 20mm Diameter steel conduit in brick or concrete walls or ceiling void including conduit ends and cover	No	25	
70	P9000 Trunking	m	25	
	CONDUCTORS			
	PVC insulated stranded copper conductors drawn into wire ways			
71	2.5mm²	m	1 300	
	Carried Forward			R

				R
	Brought Forward			
	LIGHT SWITCHES, SWITCHED SOCKET OUTLETS ETC.			
	Switches etc. complete with cover plates fixed in flush boxes			
72	20A surface mounted light switch	No	5	
73	20A surface mounted Three-pin switch socket outlet with euro outlet complete with cover plate	No	10	
	LUMINARIES AND EQUIPMENT			
	Luminaries or equipment complete with lamps , connections etc. mounted in position			
74	Type A - 2 x 35W T5 Magnet/Lihlelight/Q-Lite open channel fluorescent light fitting with telescopic lamp holder complete with electronic control gear	No	22	
75	Type B - Magnet/Lihlelight/Q-Lite or other approved RML round bulkhead with 1 x PL26 Watt lamp complete with electronic control gear	No	8	
76	Type D - 2 x 35W T5 Vapour proof fluorescent light fitting complete with electronic control gear	No	1	
77	Photocells inclusive of enclosure	No	1	
	BLOCK G			
	Thin walled hot dipped galvanised conduits			
78	20mm Diameter surface mounted on brickwork	m	90	
79	20mm Diameter fixed on timber rafters	m	125	
	Thin walled uPVC conduits			
80	20mm Diameter chased in brickwork	m	44	
81	20mm Diameter fixed on timber rafters	m	36	
	Carried Forward			R

				R
	Brought Forward			
	CONDUIT BOXES AND FITTINGS			
82	100 x 100 x 100/50mm Deep hot dipped galvanised box for 20mm diameter conduit in brick or concrete walls including conduit ends and cover	No	10	
83	65mm Round hot dipped galvanised box for 20mm Diameter steel conduit in brick or concrete walls or ceiling void including conduit ends and cover	No	25	
84	P9000 Trunking	m	25	
	CONDUCTORS			
	PVC insulated stranded copper conductors drawn into wire ways			
85	2.5mm²	m	1 300	
	LIGHT SWITCHES, SWITCHED SOCKET OUTLETS ETC.			
	Switches etc. complete with cover plates fixed in flush boxes			
86	20A surface mounted light switch	No	5	
87	20A surface mounted Three-pin switch socket outlet with euro outlet complete with cover plate	No	10	
	LUMINARIES AND EQUIPMENT			
	Luminaries or equipment complete with lamps , connections etc. mounted in position			
88	Type A - 2 x 35W T5 Magnet/Lihlelight/Q-Lite open channel fluorescent light fitting with telescopic lamp holder complete with electronic control gear	No	22	
89	Type B - Magnet/Lihlelight/Q-Lite or other approved RML round bulkhead with 1 x PL26 Watt lamp complete with electronic control gear	No	8	
	Carried Forward			R

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	Brought Forward			
90	Type D - 2 x 35W T5 Vapour proof fluorescent light fitting complete with electronic control gear	No	1	
91	Photocells inclusive of enclosure	No	1	
	BLOCK H			
	Thin walled hot dipped galvanised conduits			
92	20mm Diameter surface mounted on brickwork	m	85	
93	20mm Diameter fixed on timber rafters	m	101	
	Thin walled uPVC conduits			
94	20mm Diameter chased in brickwork	m	36	
95	20mm Diameter fixed on timber rafters	m	55	
	CONDUIT BOXES AND FITTINGS			
96	100 x 100 x 100/50mm Deep hot dipped galvanised box for 20mm diameter conduit in brick or concrete walls including conduit ends and cover	No	8	
97	65mm Round hot dipped galvanised box for 20mm Diameter steel conduit in brick or concrete walls or ceiling void including conduit ends and cover	No	22	
98	P9000 Trunking	m	15	
	CONDUCTORS			
	PVC insulated stranded copper conductors drawn into wire ways			
99	2.5mm²	m	1 100	
	Carried Forward			R

				R
	Brought Forward			
	LIGHT SWITCHES, SWITCHED SOCKET OUTLETS ETC.			
	Switches etc. complete with cover plates fixed in flush boxes			
100	20A surface mounted light switch	No	4	
101	20A surface mounted Three-pin switch socket outlet with euro outlet complete with cover plate	No	8	
	LUMINARIES AND EQUIPMENT			
	Luminaries or equipment complete with lamps , connections etc. mounted in position			
102	Type A - 2 x 35W T5 Magnet/Lihlelight/Q-Lite open channel fluorescent light fitting with telescopic lamp holder complete with electronic control gear	No	20	
103	Type B - Magnet/Lihlelight/Q-Lite or other approved RML round bulkhead with 1 x PL26 Watt lamp complete with electronic control gear	No	8	
104	Type D - 2 x 35W T5 Vapour proof fluorescent light fitting complete with electronic control gear	No	1	
105	Photocells inclusive of enclosure	No	1	
	BLOCK J			
	Thin walled hot dipped galvanised conduits			
106	20mm Diameter surface mounted on brickwork	m	90	
107	20mm Diameter fixed on timber rafters	m	250	
	Thin walled uPVC conduits			
108	20mm Diameter chased in brickwork	m	34	
109	20mm Diameter fixed on timber rafters	m	52	
	Carried Forward			R

					R
	Brought Forward				
	CONDUIT BOXES AND FITTINGS				
110	100 x 100 x 100/50mm Deep hot dipped galvanised box for 20mm diameter conduit in brick or concrete walls including conduit ends and cover	No	24		
111	65mm Round hot dipped galvanised box for 20mm Diameter steel conduit in brick or concrete walls or ceiling void including conduit ends and cover	No	65		
112	P9000 Trunking	m	55		
	CONDUCTORS				
	PVC insulated stranded copper conductors drawn into wire ways				
113	2.5mm²	m	1 850		
	LIGHT SWITCHES, SWITCHED SOCKET OUTLETS ETC.				
	Switches etc. complete with cover plates fixed in flush boxes				
114	20A surface mounted light switch	No	10		
115	20A surface mounted Three-pin switch socket outlet with euro outlet complete with cover plate	No	20		
	LUMINARIES AND EQUIPMENT				
	Luminaries or equipment complete with lamps , connections etc. mounted in position				
116	Type A - 2 x 35W T5 Magnet/Lihlelight/Q-Lite open channel fluorescent light fitting with telescopic lamp holder complete with electronic control gear	No	40		
117	Type B - Magnet/Lihlelight/Q-Lite or other approved RML round bulkhead with 1 x PL26 Watt lamp complete with electronic control gear	No	10		
	Carried Forward				R

				R
	Brought Forward			
118	Type D - 2 x 35W T5 Vapour proof fluorescent light fitting complete with electronic control gear	No	1	
119	Photocells inclusive of enclosure	No	1	
	LIGHTNING PROTECTION			
	BLOCK C, D, F, G, H AND J			
120	Undertake soil resistivity test, witnessed by the Engineer inclusive of submitting a typed test report/certificate		Item	
121	10mm² aluminium conductor	m	15	
122	50mm² uPVC insulated aluminium earth wire	m	135	
123	Bonding of earth tails to sheet trusses/roof sheeting/tiles	No	32	
124	Supply and install 25mm galvanised conduit	m	135	
125	Supply and install stainless steel lugs	No	32	
126	Supply and install stainless steel bolts and nuts	No	32	
127	Supply and install stop cork box	No	32	
128	1,8m Earth spike	No	32	
	TESTING AND CERTIFICATE OF COMPLIANCE			
129	Allow for testing of the complete installation to be witnessed by the Electrical Engineer, including the issue of SABS Certificate of Compliance of Earthing Systems, Annexures of recorded test results and "As Built" drawings as specified		Item	
	Carried Forward			R

				R
	Brought Forward			
	EXISTING INSTALLATION			
	BLOCK C			
	Disconnect, make wiring safe and remove the following			
130	20mm conduit	m	82	
131	2,5mm PVC insulated wire	m	125	
132	1,5mm PVC insulated wire	m	102	
133	1,5mm PVC insulated wire	No	16	
134	100 x 100/50 conduit box and cover	No	8	
135	Light switch	No	4	
136	Switch socket outlets	No	8	
137	2 x 58 Watt surface light fitting	No	16	
138	Bulkhead light fitting	No	8	
	BLOCK D			
	Disconnect, make wiring safe and remove the following			
139	20mm conduit	m	82	
140	2,5mm PVC insulated wire	m	125	
141	1,5mm PVC insulated wire	m	102	
142	1,5mm PVC insulated wire	No	16	
143	100 x 100/50 conduit box and cover	No	8	
144	Light switch	No	4	
	Carried Forward			R

				R
	Brought Forward			
145	Switch socket outlets	No	8	
146	2 x 58 Watt surface light fitting	No	16	
147	Bulkhead light fitting	No	8	
	BLOCK F			
	Disconnect, make wiring safe and remove the following			
148	20mm conduit	m	82	
149	2,5mm PVC insulated wire	m	125	
150	1,5mm PVC insulated wire	m	102	
151	1,5mm PVC insulated wire	No	16	
152	100 x 100/50 conduit box and cover	No	8	
153	Light switch	No	4	
154	Switch socket outlets	No	8	
155	2 x 58 Watt surface light fitting	No	16	
156	Bulkhead light fitting	No	8	
	BLOCK G			
	Disconnect, make wiring safe and remove the following			
157	20mm conduit	m	82	
158	2,5mm PVC insulated wire	m	125	
159	1,5mm PVC insulated wire	m	102	
160	1,5mm PVC insulated wire	No	16	
	Carried Forward			R

				R
	Brought Forward			
161	100 x 100/50 conduit box and cover	No	8	
162	Light switch	No	4	
163	Switch socket outlets	No	8	
164	2 x 58 Watt surface light fitting	No	16	
165	Bulkhead light fitting	No	8	
	BLOCK H			
	Disconnect, make wiring safe and remove the following			
166	20mm conduit	m	82	
167	2,5mm PVC insulated wire	m	125	
168	1,5mm PVC insulated wire	m	102	
169	1,5mm PVC insulated wire	No	16	
170	100 x 100/50 conduit box and cover	No	8	
171	Light switch	No	4	
172	Switch socket outlets	No	8	
173	2 x 58 Watt surface light fitting	No	16	
174	Bulkhead light fitting	No	8	
	BLOCK J			
	Disconnect, make wiring safe and remove the following			
175	20mm conduit	m	321	
176	2,5mm PVC insulated wire	m	458	
	Carried Forward			R

				R
	Brought Forward			
177	1,5mm PVC insulated wire	m	475	
178	1,5mm PVC insulated wire	No	64	
179	100 x 100/50 conduit box and cover	No	12	
180	Light switch	No	10	
181	Switch socket outlets	No	10	
182	2 x 58 Watt surface light fitting	No	32	
183	Bulkhead light fitting	No	12	
	Carried Forward to Summary of Section No. 3			R

SECTION SUMMARY - NON CRITICAL STORM DAMAGE

Carried to Final Summary on page 114

R

FINAL SUMMARY

Section No		Page No		Amount
1	PRELIMINARIES	41		
2	CRITICAL STORM DAMAGE	56		
3	NON CRITICAL STORM DAMAGE	113		
	SUB-TOTAL		R	
	VAT @ 15%		R	
	Carried to Form of Offer (T2.21)		R	

LDM QUANTITY SURVEYORS

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

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:	**DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS**		
Tender no:	**ZNTD05334W**	**Project Code:**	**069031**

SECTION 1

1 EXTENT OF THE WORKS

1.1 EMPLOYERS OBJECTIVES

Repairs and renovations to storm damaged schools.

1.2 OVERVIEW OF THE WORKS

Repairs and renovations to storm damaged schools as defined in the Bills of Quantities.

1.3 EXTENT OF THE WORKS

Refer to Bills of Quantities and attached drawings for detailed scope of work.

1.4 LOCATION OF THE WORKS

KZN Ethekwini Region: 29°07'39"S 31°24'20"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

The Employer design and related documentation and specification is as per the Appointed Consultants.

2.2 DESIGN BRIEF

As per the drawings and specifications provided by the appointed Engineers and Architects.

2.3 DRAWINGS

See list of Drawings/Annexures attached to this document.

2.4 DESIGN PROCEDURES

As per the design, documentation and specification issued by the Appointed Consultants and/or the Employer.

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

As per the conditions stated in form T2.6, in Section 1 of this document

3.5 SUBCONTRACTING PROCEDURES

Not Applicable

4 CONSTRUCTION

4.1 APPLICABLE SANS 2001 STANDARDS FOR CONSTRUCTION WORKS

The Contractor is referred to the "ASAQS Model Preambles to Trades - 2017", 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
Project Specific Health and Safety Specification	32
ASAQS Model Preambles for Trades 2017 - (Not Attached)	1
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. Only contractors registered with the Department of Labour in the safe handling of asbestos products are allowed to remove and dispose of any asbestos type material and issue the associated certificates

4.5 AGRÉMENT 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 (one technical meeting and one site meeting per month), 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:**
	Map Africa Consulting Engineers
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:**
	The project would be done classroom block for classroom block and the Contractor must allow for the fact that they would not have all the buildings at the same time to work on. The sequence of the blocks would be determined once the Contractor is on site and in agreement with the Principal of the school.

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. - Paint Colour. - Brick sample. - Light Fitting sample. - Screed panel 2m x 2m impact test. - Tested trial mix to be approved by the Engineer. - Others as per the Consultants requirements.
4.12.2	**Fabrication drawings that the contractor is to provide to the employer are**:
	Truss Fabrication Drawings
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. - N/A

	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 ASAQS Model Preambles to Trades - 2017, 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:	069031		
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: _____

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DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

PART C4. SITE INFORMATION

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

Project title:	**DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS**		
Tender No.	**ZNTD05334W**	**Project Code:**	**069031**

C4.1 Site Information

C4.1 GENERAL

(a) The nature of ground is assumed to be loose, sandy material, possibly interspersed with soft and hard rock.

(b) The site is an existing, operational school. Extreme care must be taken to ensure that construction areas are kept secure and not accessible to students/staff. The Contractor must take note that storage material on site must be done in a well organized manner and the Contractor must create a workable space which will not disrupt the operation of the school or endanger the learners on the premises. The working area must be clearly demarcated and entrance to the work area must be controlled.

(c) The Tenderer is to note that various blocks that are currently in use, are required to be worked on. Planning and co-ordination therefore will be required by the Contractor to ensure that school activities are not interrupted, and under no circumstances will the Contractor be allowed to utlize any occupied buildings for any purpose other than the renovation of that building.

C4.2 GEOTECHNICAL INVESTIGATION REPORT

(a) Not Applicable

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PART C5 - DRAWINGS / ANNEXURES

C5.1 - LIST OF DRAWINGS/ANNEXURES

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

Tender No.:	**ZNTD05334W**	**Project Code:**	**069031**

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

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

DRAWING NO	DESCRIPTION
N/A	Provisional Site Plan

ANNEXURES	
Annexure 1	ASAQS Model Preambles for Trades 2017 - (Not Attached)
Annexure 2	General Electrical Specifications
Annexure 3	Lightning Protection Specifications
Annexure 4	Map of Tender Submission Location
Annexure 5	Joint Venture Agreement
Annexure 6	Project Specific Health and Safety Specification
Annexure 7	Health and Safety Bill of Quantities
Annexure 8	Builders Lien Agreement
Annexure 9	EPWP Specification
Annexure 10	Structural Engineers Project Specification Booklet

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PROVISIONAL SITE PLAN

DPW: KZN STORM DAMAGE SCHOOLS : PHASE 16

Field Investigation Report

School:	Mandeni Primary School
Region / Cluster:	Ethekwini Region (Ilembe - Sundumbili)
Date:	2017.11.07
Assessor Name:	
Co-Ordinates:	29°07'39"S 31°24'20"E (S29.1275; E31.40555)
Scope:	

Type of Building (Admin, Classroom, etc)	Google Earth Dimensions (L x B x H)	Actual Dimensions (L x B x H)	Structure Type – (Facebrick / Prefab, etc)	Comments
Block A	12 x 9			
Block B	16 x 9			
Block C	16 x 9			
Block D	17 x 11			
Block E	5 x 2			
Block F	22 x 9			
Block G	25 x 10			
Block H	16 x 10			
Block J	46 x 10			
Block K	5 x 5			
Block L	8 x 6			

Type of Building (Admin, Classroom, etc)	Google Earth Dimensions (L x B x H)	Actual Dimensions (L x B x H)	Structure Type – (Facebrick / Prefab, etc)	Comments
Block M	8 x 6			
Block N	8 x 7			
Block O	6 x 5			

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ANNEXURES

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DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

ANNEXURE 1

ASAQS MODEL PREAMBLES FOR ALL TRADES (2017)

NOTE: TENDERERS MAY PURCHASE A COPY OF THE ASAQS MODEL PREAMBLES FOR TRADES – 2017 EDITION, FROM THE ASAQS WEBSITE:
https://www.asaqs.co.za/store/viewproduct.aspx?id=16404663

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ANNEXURE 2

GENERAL ELECTRICAL SPECIFICATIONS

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 **<u>In Roof Spaces</u>**

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.

12.4 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 mm^2 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.

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ANNEXURE 3

LIGHTNING PROTECTION SPECIFICATIONS

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 mm² (domestic dwelling only) or 50 mm² 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 mm² 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 mm² (35 mm² 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.

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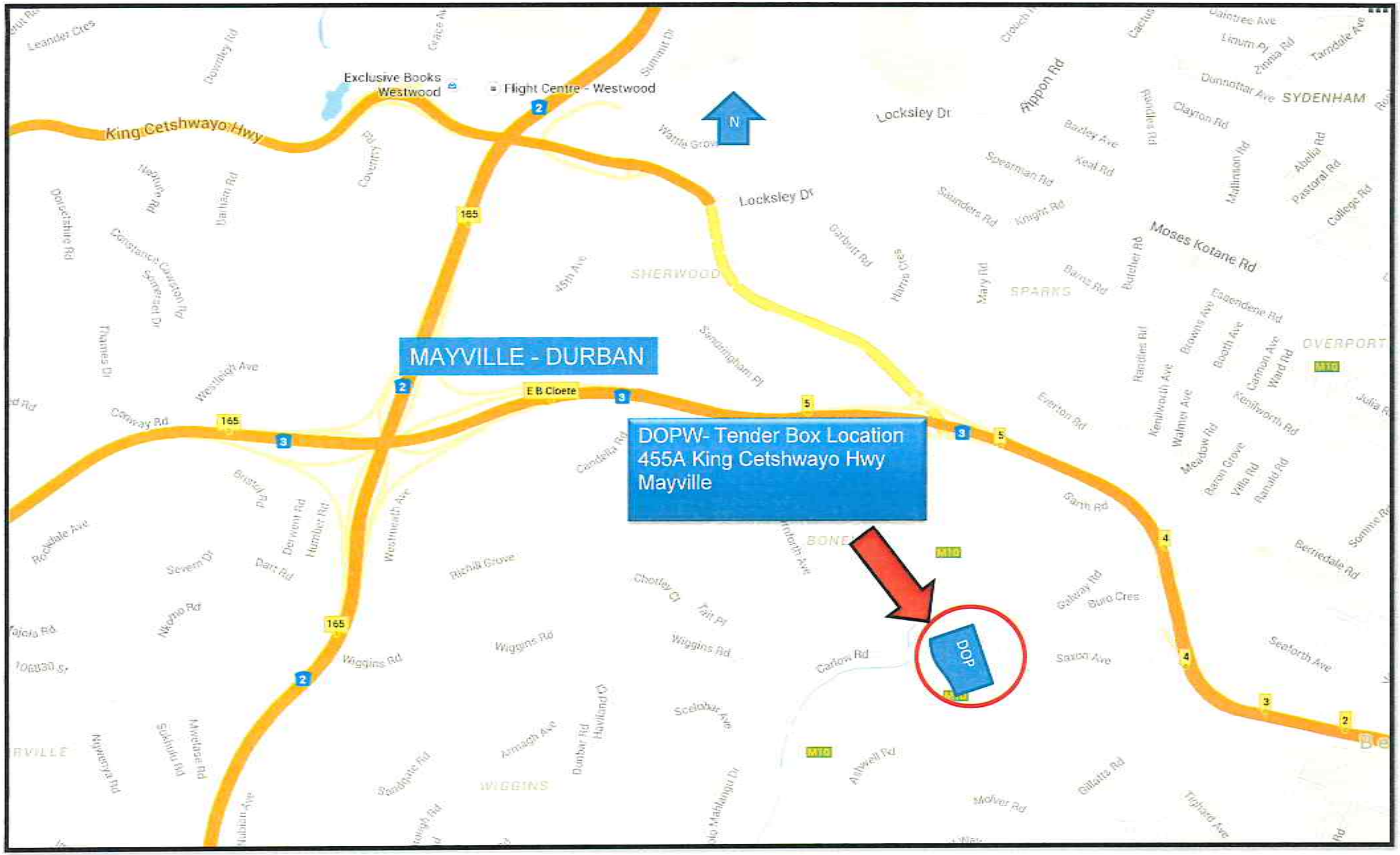
ANNEXURE 4

MAP OF BID 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
Moses Kotane Rd
Rippon Rd
E B Cloete
SHERWOOD
SPARKS
SYDENHAM
OVERPORT
WIGGINS
Wiggins Rd
Carlow Rd
Westmeath Ave
Saxon Ave
Berriedale Rd
Seaforth Ave

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ANNEXURE 5

JOINT VENTURE AGREEMENT

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

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)*

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

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

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

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

ANNEXURE 6

PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATION

public works

Department:
Public Works
PROVINCE OF KWAZULU-NATAL

Occupational Health and Safety Specification

(OHSE SPEC)

Project Name : Mandeni Primary School: Storm Damage Disaster Programme: Phase 16

WIMS No. : 069031

Client OHS Rep. : L. Bailey

Region : eThekwini

District : N/A

Ward no. : N/A

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1. Introduction

The *Kwa-Zulu / 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.

Attention is drawn to the requirements of the Disaster Management Act, 2002 and regulations issued in regard to the containment / management of COVID-19. The Directive issued by Minister of Employment and Labour in respect of COVID-19 Occupational Health Measures in Workplaces, 2020.

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.

"Approved Plan of Work" means a written site-specific methodology as contemplated in regulation 15 that is at least co-signed by the asbestos client, registered asbestos contractor and approved inspection authority;

"Asbestos Clearance Certificate" means a written document verifying that the regulated asbestos fibre concentration in the air meets the clearance indicator;

"Asbestos Client" means any person for whom asbestos work is performed;

"Asbestos Disposal Site" means a site specifically designated for the purpose of asbestos disposal in terms of the National Environmental Management: Waste Act,

2008 (Act No. 59 of 2008);

"Asbestos Dust" means airborne or settled dust, which contains or is likely to contain regulated asbestos fibres;

"Asbestos Removal Site" means a workplace where asbestos removal work is performed;

"Asbestos Removal Supervisor" means a competent person responsible for supervision of physical asbestos work processes and coordination of asbestos removal on an asbestos removal site;

"Asbestos Risk Assessment" means a risk assessment and risk categorisation of potential exposure to asbestos dust;

"Asbestos Work" means work that exposes or is likely to expose an employee to asbestos dust, including transporting, storing, removing, handling, treating, repairing and disposing of asbestos;

"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;

"environmental air monitoring" includes static air monitoring for regulated fibres conducted downwind from outdoor type 2 asbestos work or outside asbestos enclosures where type 3 asbestos work is performed or in any area where there is the potential for asbestos contamination;

"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;

"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);

"Registered Asbestos Contractor" means either a contractor, a mandatory or an employer who conducts type 2 asbestos work or type 3 asbestos work or asbestos removal work, who is registered with the chief inspector;

"Regulated Asbestos Area" means an area demarcated and controlled as contemplated in regulation 18;

"Removal of Asbestos" means all tasks included in the process of removing asbestos from the location specified in the inventory of asbestos in place to the final disposal site;

"Safety Officer" – a person deemed competent by SACPCMP under the relevant category of registration.

"Type 1 Asbestos Work" means—

(a) painting of asbestos cement products in a manner that does not require surface preparation and does not cause the release of asbestos fibres; or

(b) the removal of less than 10 square metres of asbestos cement products or equivalent gutters and piping or asbestos insulating board, where removal work may not be repeated on the same site within a period of six months; and, does not require registration as a Registered Asbestos Contractor with the Chief Inspector;

"Type 2 Asbestos Work" means—

(a) the repair or encapsulation of asbestos cement products in a manner that does not require surface preparation; or

(b) the removal of asbestos cement products or asbestos insulating board; and, requires registration as a type 2 Registered Asbestos Contractor with the Chief Inspector;

"Type 3 Asbestos Work" means—

(a) the removal, repair or encapsulation of any Asbestos and asbestos-containing material; and, requires registration as a type 3 Registered Asbestos Contractor with the Chief Inspector;

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;

Mandeni Primary School: Storm Damage Disaster Programme: Phase 16

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 –

Mandeni Primary School: Storm Damage Disaster Programme: Phase 16

1. DOL - Stamped Notification to commence with construction work made to the Provincial Director of Labour using Annexure 2 of the Construction Regs, 2014.
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. The policy to include measures for the protection of employees against exposure to COVID-19.
4. Demolition Plan signed off by the Structural Engineer *(to be submitted before demolition work)*
5. COVID-19 Site Safety Management Plan
6. Pre-Construction risk assessment *(site specific, dated and signed by Risk Assessor)*
7. Fall Protection Plan *(to be signed and dated by the Developer)*
8. Relevant checklists and registers.
9. SHE Audit Format to be used for Self-audits and Sub-contractors
10. Site specific OHSE Organogram
11. Preliminary Induction Program *(Including toolbox talks program)*
12. Demolition Plan
13. Environmental Management Plan *(detailed waste management plan)*
    - *13.1.1. Department of Labour registered Asbestos Contractor to remove and dispose asbestos.*
14. Proof of competency for the following legal appointees;
    - *14.1. Construction Manager – (Detailed CV reflecting qualification, relevant experience and references from previous clients)*
    - *14.2. Construction Supervisor – Detailed CV reflecting qualification, relevant experience and references from previous Client.*
    - *14.3. Construction H&S Officer – (Proof of registration with SACPCMP + CV)*
    - *14.4. Risk Assessor – SAMTRAC or equivalent*
    - *14.5. Fall Protection Planner - SAMTRAC or equivalent (Training recognised under SAQA unit standard u/s 229994).*
    - *14.6. Incident / Accident Investigator - SAMTRAC or equivalent*
    - *14.7. Department of Labour registered Asbestos Contractor*
    - *14.8. COVID-19 Compliance officer*
    - *14.9. Demolition work inspector – Registered Engineer or Technologist*
    - *14.10. Electrician – Wireman's licence*

Legal appointments to be appointed	
Prior Site Handover	**After Site Handover on commencement with Construction work**
• Construction Manager • Construction Work Supervisor • Assistant Construction Work Supervisors • Risk Assessor • Fall Protection Planner • Incident /Accident Investigator • DoL Registered Asbestos Contractor • Electrician • COVID-19 compliance officer	• Emergency co-ordinator • Fire Marshalls • Fire team members • Portable Electrical tool inspector • Hand tools inspector • Housekeeping inspector • Stacking and storage inspector • Construction Vehicle / Mobile plant Operator • Flammable liquids Storage Inspector • Hazardous substance storage inspector • Ladder 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 Asbestos Abatement Regulations 2020	• To comply with Asbestos Abatement Regulations 2020 as published in Government Notice R1196 in GG 43893 of 10 November 2020. • Removal to be done by an accredited Asbestos Contractor • Proof of accreditation to be kept on site. • Medical fitness certificates to accordance to Asbestos Abatement Regulations 2020. • 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. ***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.***
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 d) 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.
Appointment of a Part -Time Construction Health	• 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

& Safety Officer	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 Community Health Clinic.	• All areas where there are construction activities are conducted must be solidly barricaded and strict access control to those areas. • Signage of hazards associated with construction activities conducted must installed and clearly visible. • When working in this facility, the Principal Contractors and Sub-contractors risk assessment / and subsequent Safe Work Method Statement must take into consideration the negative effect the Principal Contractor's activities may have on the health and safety of the occupants of the facility or members of the Public and make provisions for the implementation of all reasonably practicable measures to ensure the health and safety of the occupants of the building or facility. • Prior arrangement, a plan must be developed before any disturbance of Community Health Clinic operations.
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 consulted 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.
Demolition work	• To comply with CR (14) and the following; • Demolition work may only start upon approval of the Demolition Plan by the Client or it's duly appointed Agent. • In the event that a structure identified for demolition incorporates substances such as, lead or asbestos it must be performed within the requirements of the applicable legislative requirements.
Scaffolding	• To comply with CR (16) and the following; • Scaffolding Inspectors and Scaffolding Erectors must be different individuals. • Scaffold Harness must be used on Scaffolding, normal Harnesses may not be used on scaffolding • Sufficient Scaffolding material e.g., tags, trapdoors etc. need to be on site as determined by the activities on site • Scaffold bases may not be supported by materials such as bricks and chipboard. Suitable material needs to be used as per SANS 10085 •

Structures	• To comply with CR (11)
Construction vehicles and mobile plant	• 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 and reflective vests**. 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.
Permits	1) The Principal Contractor shall prepare and issue the required written permits relating to but not limited to the following: • Hot Work • Roof Work; and • Electrical work (both temporary and permanent) • Confined Space Entry 2) The Principal Contractor must ensure that where permits are required that they are properly implemented and adhered to.
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.
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 and Hand Tools	1) The Principal Contractor shall ensure that all electrical tools, electrical distribution 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 procedures apply. 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.

Annexure C

CONTRACTOR'S SAFETY, HEALTH AND ENVIRONMENTAL DECLARATION

Project title:	**Mandeni Primary School: Storm Damage Disaster Programme: Phase 16**		
Bid no:		**WIMS no:**	**069031**

INTRODUCTION

In terms of *Construction Regulation 7(1) (a)* of the *Construction Regulations of February 2014* a Contractor may only be appointed to perform construction work if the Client is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the *Occupational Health and Safety Act, Act 85 of 1993* and the Construction Regulations of February 2014. In line with this requirement the Contractor is required to read through this document carefully, sign it and submit it with his/her Tender.

DECLARATION

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification attached in the tender document.
2. I hereby declare that my company and its employees has the necessary competency and resources to safely carry out the construction work under this contract in compliance with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification.
3. I hereby confirm that adequate provisions have been made in my tender to cover the cost of all Safety, Health and Environmental duties and responsibilities imposed on me by the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification.
4. I confirm that I may not commence with any part of construction work under the contract until my Construction Safety, Health and Environmental Plan has been approved in writing by the Client.
5. I hereby confirm that copies of the following documentation will be kept on site for viewing and inspection purposes for the duration of the construction work:
   a) Client's Construction Safety, Health and Environmental Specification,
   b) Approved Construction Safety, Health and Environmental Plan,
   c) Occupational Health and Safety Act, Act 85 of 1993,
   d) Construction Regulations of February 2014,
   e) Asbestos Abatement Regulations 2020, and
   f) COVID-19 Regulations 2020.
6. I agree that my failure to complete and execute this declaration to the satisfaction of the Client will mean that I am unable to comply with the requirements of the Occupational Health and Safety Act, Act 85 of 1993 and Construction Regulations 2014, and accept that my tender will be rejected.

Duly Signed at.....on this the..... day of.....202.....

_____ _____

Full Name of Signatory | Name of Enterprise

_____ _____

Capacity of Signatory | Signature of authorised representative of Bidder

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

Mandeni Primary School: Storm Damage Disaster Programme: Phase 16

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 Risk	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 Work Systems, Trainings, PPE, Good Housekeeping Practises, 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 Work Systems, Trainings, PPE, Good Housekeeping Practises, 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 Work Systems, Trainings, PPE, Good Housekeeping Practises, 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 Work Systems, Trainings, PPE, Good Housekeeping Practises 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 Work Systems, Trainings, PPE, Good Housekeeping Practises, 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 Work Systems, Trainings, PPE, Good Housekeeping Practises, Supervision etc.	**Contractor**
	Moving and stacking of materials	Physical injuries from tripping; struck or bumped by or against any construction materials; etc.	Heat stresses etc.	Land pollution (from poor housekeeping)	None	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**
DECANTING	Delivery of parkhomes	Physical injuries from tripping; struck or bumped by or against any construction materials; etc.	Heat stresses etc.	Land pollution (from poor housekeeping)	None	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**
	Moving of furniture and equipment	Struck by objects, cuts, bruises, back injuries, caught between objects, falls, carry heavy objects	Heat exhaustion	None	None	Supervision, safe systems of work, signage and barricading, training etc.	**Contractor**
	Relocation of learners and teachers	Struck by objects, cuts, bruises, back injuries, caught between objects, falls, carry heavy objects	Heat exhaustion	None	None	Supervision, safe systems of work, signage and barricading, training etc.	**Contractor**

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Pers
DEMOLITION WORK: Stripping of Asbestos Roof Sheeting /fixtures and Barge Boards *(Asbestos Material)*	Placement of asbestos bin; Display warning signage, PPE; etc.	Trips & Falls; cuts; abrasion; eye injuries; finger injuries; etc.	Dust Inhalation; Back Pains; Heat Exhaustion; etc.	Release of asbestos dust into surrounding environment; etc.	Inhalation of asbestos fibres; Inhalation of moulds, dust; etc.	Use of appropriate PPE; Supervision; Displaying Signage; Training; Competent Asbestos Removers; Practise SWP etc.	**Contractor**
	Removal of existing trusses, asbestos roof sheets, timber purlins, Rainwater goods, Fascia and Barge Boards	Serious Body injuries; Trip & Fall; cuts; abrasion; struck by falling objects; etc.	Asbestos dust Inhalation; Heat Exhaustion; etc.	Spillage of asbestos dust; poor housekeeping; etc.	Asbestos dust Inhalation; etc.	Fall Protection Plan; Practise SWP; Method statement; Damping Procedures; Display Warning Signage; etc.	**Contractor**
	Stripping of fixtures	Cut; Abrasion; Eye Injuries; Trip & Falls; etc.	Back Pains; Dust Inhalation; Heat Exhaustion; etc.	Littering from Poor Housekeeping; etc.	None	Trainings; Practise SWP; Use safe hand tools; Wearing required PPE; Practise of Proper Manual Lifting technique; etc.	**Contractor**
	Removing of Asbestos material rubble using machinery and Labourers	Trip & Falls; Cuts; Abrasion; Run-over by Mobile Plant; etc.	Back strain; Heat Exhaustion; Dust Inhalation; etc.	Oil Spillage; Asbestos Spillage; etc.	None	Trainings; Practise SWP; Pre-Use Inspection; Use safe hand tools; Display signage; Wearing PPE *(i.e. Overalls, hard hats, safety shoes, goggles, etc.)*; etc.	**Contractor**

Main Activity	Sub Activity	Safety Risk	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
ALTERATIONS: REMOVAL OF EXISTING WORK AND REPLACEMENT WITH NEW	Removal and replacement of air vents	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping	None	Trainings; Practise SWP; Good Housekeeping; Use safe Tools; Wearing PPE; Supervision; Proper Manual Lifting technique; etc.	**Contractor**
	Removal and replacement of doors	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping	None	Trainings; Practise SWP; Good Housekeeping; Use safe Tools; Wearing PPE; Supervision; Proper Manual Lifting technique; etc.	**Contractor**
	Removal and replacement of Ironmongery	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping	None	Trainings; Practise SWP; Good Housekeeping; Use safe Tools; Wearing PPE; Supervision; etc.	**Contractor**
	Removal and replacement of chalkboards	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping	None	Trainings; Practise SWP; Good Housekeeping; Use safe Tools; Wearing PPE; Supervision; Proper Manual Lifting technique; etc.	**Contractor**
	Removal and replacement of window mechanisms	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping	None	Trainings; Practise SWP; Good Housekeeping; Use safe Tools; Wearing PPE; Supervision; etc.	**Contractor**

	Repairs to structure cracks	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	Littering from poor housekeeping	None	Trainings; Practise SWP; Good Housekeeping; Use safe Tools; Wearing PPE; Supervision; Proper Manual Lifting technique; etc.	**Contractor**
CARPENTRY AND JOINERY	Eaves, Verges, etc. *(Incl.: Fascia Boards, Barge Boards, etc.)*	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**
	Positioning of roof trusses	Finger injuries; Cuts; Hand crush; etc.	Back strain; Heat exhaustion; etc.	Littering from poor housekeeping	None	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**
	Roof Construction *(Incl.: Double pitch timber roof trusses, Purlins, etc.)*	Trip & Falls; Cuts; Eye Injury; Head Injury; Struck by falling objects; etc.	Muscular strains; Dust Inhalations; Heat Exhaustion; etc.	None	None	Trainings; Practise SWP; Use safe Tools; Wearing PPE; Supervision; Proper Manual Lifting technique; etc.	**Contractor**
INSTALLATIONOF ROOF COVERING AND RAINWATER GOODS	Installation of IBR and fibre roof sheeting	Falling from heights, tripping hazards; hit by falling objects; cuts by sharp edges; etc.	Back strains; dust inhalation, extreme temperatures, etc.	Land pollution (from poor housekeeping)	None	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**
	Installation of aluminium gutters and downpipes	Falling from heights, tripping hazards; hit by falling objects; cuts by sharp edges; etc.	Back strains; dust inhalation, extreme temperatures, etc.	Land pollution (from poor housekeeping)	None	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**

GLAZING WORK	Glazing	Contact with sharp edges, Hazardous substances, falling	Cuts and lacerations, fractures	None	None	Training, PPE, safe systems of work and supervision	**Contractor**
	Removal and replacement of putty on windows	Cuts, bruises, working on heights	Working at awkward postures	None	None	Training, PPE, safe systems of work and supervision	**Contractor**
PAINTINGWORK	Painting Work on ceiling boards, cornices, Fascial and Barge Boards, etc.	Physical injuries; falls from paint spillages or trips from paint containers, etc.	Back strain, heat exhaustion, Paint vapours inhalation.	Land pollution (from poor housekeeping); paint spillage; etc.	Exposure to paint vapours	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**
	Painting Work on plastered internal & external walls	Physical injuries; falls from paint spillages or trips from paint containers, etc.	Back strain, heat exhaustion, Paint vapours inhalation.	Land pollution (from poor housekeeping); paint spillage; etc.	Exposure to paint vapours	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**
	Painting Work on woods *(i.e. roof timber eaves & verges)*	Physical injuries; falls from paint spillages or trips from paint containers, etc.	Back strain, heat exhaustion, Paint vapours inhalation.	Land pollution (from poor housekeeping); paint spillage; etc.	Exposure to paint vapours	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	**Contractor**
UNDERPINNING OF EXISTING FOUNDATIONS	Drilling	Death or physical injuries from vehicles colliding with other vehicles, employees nocked / run-over by construction vehicles; etc.	Respiratory conditions from inhaling dusts generated the passing of vehicles in a gravel driveway, etc.	Fuel leaks & spillages from construction vehicles.	Exposed to intermittent noise levels; Dust inhalation; etc.	Safe systems of work, training, PPE, Flagmen, Good Housekeeping Practises, Supervision etc.	**Contractor**

	Steel fixing	Tripping, struck by, hands caught between objects	Back strain, heat exhaustion, bruising, hand injuries	None	None	Training, PPE, safe systems of work and supervision	**Contractor**
	Reinforcement	Struck by, tools, bumping against, falls	Cuts, abrasions, fractures, death	None	None	Training, PPE, safe systems of work and supervision	**Contractor**
FLOORING	Removal of existing screed	Back injuries, bruises, heat exhaustion	Dust inhalation, dermatitis	Pollution	Noise	Training, PPE, safe systems of work and supervision	**Contractor**
	Cement and Concrete Mixing	Struck by hand tools, tripping & slips from paint spillages.	Inhalation of cement, Dermatitis	Spilling of cement mixture	Dust	Training, PPE, safe systems of work and supervision	**Contractor**
	Concrete pouring	Back injuries, bruises, heat exhaustion	Dust inhalation, dermatitis	Pollution	Noise	Training, PPE, safe systems of work and supervision	**Contractor**
ELECTRICAL WORKS	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	SW Procedure; Training; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Wiring	Skin burn; cut; abrasion; trip & falls; finger injuries; eye injuries; etc.	Electrocution; dust inhalation, back pains; heat exhaustion; etc.	None	None	SWP; 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	SWP; 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; 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	SWP; Training; PPE; Good Housekeeping Practises; Supervision; etc.	**Contractor**
	Lights 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 HCS Waste Truck and be disposed to the HCS 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.	General Dust & Asbestos particles Inhalation; etc.	Trainings; Practise SWP; Pre-Use Inspection; Display signage; Wearing PPE; etc.	**Contractor**

Coronavirus (COVID-19) risk assessment						
Activity	**Risk to safety**	**Risk to Health**	**Risk to Environment**	**Risk to Public Safety**	**Control Measures**	**Responsible Person**
Undetected infected person entering site	-	Inhaling COVID-19; Sore throat; Breathing difficulty; Fever; Fatigue; Death; etc.	COVID-19Infected person spitting on surrounding area; etc.	COVID-19Infected person sneezing on other persons visiting the site; etc.	Training employees on COVID-19; Wear required PPE; Testing / screening of persons entering the site; Working home policy; Workplace COVID-19 Risk Assessment; COVID-19 Safety induction & Toolbox Talk trainings; Post awareness posters; Maintain social distancing; etc.	**COVID-19 Compliance Officer / Contractor**
Using COVID-19 contaminated tools	-	Inhaling COVID-19; Sore throat; Breathing difficulty; Fever; Fatigue; Death; etc.	COVID-19Infected person spitting on surrounding area; etc.	COVID-19Infected person sneezing on other persons visiting the site; etc.	Training employees on COVID-19; Wear required PPE; Testing / screening of persons entering the site; Working home policy; Workplace COVID-19 Risk Assessment; COVID-19 Safety induction & Toolbox Talk trainings; Post awareness posters; Maintain social distancing; etc.	**COVID-19 Compliance Officer / Contractor**
Working on contaminated surfaces	-	Inhaling COVID-19; Sore throat; Breathing difficulty; Fever; Fatigue; Death; etc.	COVID-19Infected person spitting on surrounding area; etc.	COVID-19Infected person sneezing on other persons visiting the site; etc.	Training employees on COVID-19; Wear required PPE; Testing / screening of persons entering the site; Working home policy; Workplace COVID-19 Risk Assessment; COVID-19 Safety induction & Toolbox	**COVID-19 Compliance Officer / Contractor**

					Talk trainings; Post awareness posters; Maintain social distancing; etc.	

Onsite General Construction Activities					
Activity	**Risk to safety**	**Risk to Health**	**Risk to Environment**	**Risk to Public Safety**	**Control Measures**
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
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.

*CR 7 (8) A contractor must ensure that **all his or her employees** 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**.*

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-Viability 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					

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Principal Contractor **CHS**

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ANNEXURE 7

HEALTH AND SAFETY BILL OF QUANTITIES

HEALTH AND SAFETY IMPLEMENTATION COSTING

Contractor to give a breakdown of his Health and Safety costs on this sheet.

ITEM	DESCRIPTION	UNIT	QUAN-TITY	MONTHS (Indicative)	RATE	AMOUNT
			(a)		(b)	(a) x (b)
1	**MEDICALS**					
1.1	Pre-employment medical	Nr.	-			
1.2	Re-medicals - yearly	Nr.	-			
	TOTAL					
2	**PERSONAL PROTECTIVE EQUIPMENT**					
2.1	Overalls	Nr.				
2.2	Hard Hats	Nr.				
2.3	Safety boots/shoes	Nr.				
2.4	Gloves	Nr.				
2.5	Gumboots steel toe cap	Nr.				
2.6	Safety glasses	Nr.				
2.7	Reflector Bibs	Nr.				
2.8	Barricading Material	M				
2.9	Dust masks	Box 20				
	TOTAL					
3	**FIRE FIGHTING**					
3.1	Fire extinguishers - 4.5Kg	Nr.				
3.2	Surveys - Annual Service	Nr.				
	TOTAL					
4	**HEALTH AND SAFETY PERSONNEL**					
4.1	Safety Manager	Nr.				
4.2	Safety Officer	Nr.				
4.3	Construction Phase Safety, Health, Environmental and Waste Management Plan	Nr.				
	TOTAL					
5	**FACILITIES**					
5.1	Provision of ablution facilities	Nr.				
5.2	Service and maintenance of ablution facilities	Nr.				
5.3	Provision of eating areas	Nr.				
5.4	Cleaning of Lay down and other storage areas	Nr.				
5.5	Wash hand basin	Nr.				
5.6	Hot and Cold running water	Nr.				
5.7	Degreasing & Toilet soap	Nr.				
	TOTAL					
6	**FALL PREVENTION / PROTECTION**					
6.1	Safety harnesses with double lanyards	Nr.				
6.2	Safety harnesses with Scaffold hooks	Nr.				
6.3	Lifelines and vertical fall arrest systems	Nr.				
6.4	Scaffolding – material, erection and inspection (Estimate for project)	Nr.				
6.5	Temporary hand railing material and kick flats	Nr.				
6.6	Chin Straps	Nr.				
	TOTAL					

7	**FIRST AID**					
7.1	Replenishment of boxes and other supplies	Nr				
	TOTAL					
8	**TRAINING**					
8.1	SHE Representative	Nr.				
8.2	First Aid Level 1	Nr.				
8.3	Fire Fighting	Nr.				
	TOTAL					
9	**SIGNAGE**					
9.1	All Signage as required by Law, regulatory, warning and information	Nr.				
9.2	Posters for awareness	Nr.				
	TOTAL					
10	**ELECTRICAL**					
10.1	Replacement of Locks required for lockouts	Nr.				
10.2	Replacement of tags	Nr.				
10.3	Replacement for Permit books	Nr.				
10.4	Replacement of Calipers	Nr.				
	TOTAL					
11	**OTHERS (Project Specific)**					
11.1		Nr.				
	TOTAL					
GRAND TOTAL TO BE CARRIED TO THE PRELIMINARIES AND GENERAL IN BILL OF QUANTITIES						

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ANNEXURE 8

BUILDERS LIEN AGREEMENT

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): **DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS**

Site: GPS CO-ORDINATES: 29°07'39"S 31°24'20"E (S29.1275; E31.40555)

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

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ANNEXURE 9

EPWP SPECIFICATION

THE EPWP CONDITIONS AND SPECIFICATIONS

Changes to be effected in the Bill of Quantities in P&G's Section C12 (page 11of 13)

C 12 EPWP Conditions and Specifications

C12 to be expanded from C 12.1 to C12.10 as follows;

	C 12 EPWP CONDITIONS AND SPECIFICATIONS			
	C12.1(a) Employment Targets The contractor needs to provide a realistic estimate on the number of jobs that the project has a 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. No of jobs estimated to be created equals to a **minimum of 5 unskilled labour** F.....V.....T..... Item 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 (**Project Steering Committee**) 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			
	C12.1 (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 following employment requirements of the EPWP 1. 60% 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 with disability 100% unskilled labour utilized must reside within the boundaries of the Municipality Ward where this contract is executed, with preference to the local community closest or a 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			

C12.1 (c)Labour rate and payment intervals

The contractor should ensure that the 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

C12.2 (a) 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 the 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)"

Labour-intensive component

Due to the nature of the work involved, this type of project lends itself to be feasible as a labour Intensive project i.e. the construction activities will indeed require skilled/unskilled labour.

The aim of the projects is to provide some form of economic benefit whilst generating and increasing the acquired skills shortage to improve sustainability in the local area. The following are potential focus areas where employment creation can be optimized per project:

(i) Trenching works not exceeding depth of 1.5m, including trenching for Foundation, Electrical, Water, Mechanical & Civil Services Works including backfilling where ground conditions permit
(ii) Building Works; All masonry works (which include concrete mixing on site; brickwork; block work ; plastering; screed works; jointing; etc.); Painting, Plumbing, Ironmongery; roof cladding; glazing; tilling; carpentry; flooring; waterproofing; etc.
(iii) Sewers works including Construction of manholes, laying of Sewer pipes, bedding, backfilling and compaction.
(iv) Water Reticulation works including excavation, bedding, laying of pipes and compaction
(v) Site Clearance Works
(vi) Electrical Reticulation works.
(vii) Stormwater water drainage using in-situ concrete
(viii) Landscaping and Grassing of Sports Field
(ix) Cleaning and Fencing Works

The above identified activities are deemed suitable to be constructed using the LIC methods; to build, upgrade and maintain the social and economic of the underdeveloped area, promoting community participation, development of skills and creating more work opportunities.

	The above identified activities should be marked in the Bill of Quantities with the letter (LI). Contractor to price the above items in the Bill of Quantities bearing in mind that they are regarded as the main sources of job creation, whether sub contracted or undertaken by the main contractor. 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 letter LI are not necessarily an exhaustive list of all the activities which must be done by hand. 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. F.....V.....T ..... Item			
	C12. 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. 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			
	C12.4 EPWP Monthly Reporting documents: At the end of each month the contractor must submit: • EPWP monthly data collection form • Worker monthly payment upload • Worker monthly acknowledgement of receipt of payment • Worker monthly Payment register • Worker monthly training form • Monthly attendance Register • Worker Monthly pay slips • Unskilled labour certified ID copies (once off) • Beneficiary ID-size photos • Proof of UIF • Proof of COIDA F.....V.....T..... Item			
	C12.5 EPWP Promotion 12.5.1 EPWP signage board			

EPWP Program at the project level shall always be promoted through the provision of projects signage board that embraces EPWP logo at the bottom, correct measurement for this sign board will be provided by the project leader during the site handing over meeting.

F.....V.....T..... ..... Item

12.5.2 Branding of labour apparel

Contractor & Sub-contractors' labourers shall be provided with EPWP branded Personal Protective Equipment (PPE), reflector vest with EPWP acronym at the back as an ideal and cost effective means of promoting program on site.

The contractor is advised to price for both items 12.5.1 and 12.5.2

F.....V.....T..... Item

C12.6 COMMUNITY LIAISON OFFICER (CLO)

UTILISATION OF A COMMUNITY LIAISON OFFICER

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

A CLO will be identified by the local structures (Project Steering Committee) 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

	8. Assisting the Contractor and the work force in the establishment of grievance procedures and necessary recommendation 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 and submit 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 for the Community Liaison Officer (CLO) 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: Public Works F:..... V:..... T:..... Item			
	C12.7 Skills development on site The Contractor is conforming to the objectives of EPWP if his beneficiaries are 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			
	C12.8 Sub-Contracting for local emerging enterprises The project can support the notion of one main contractor to be appointed whilst several subcontractors, possibly from the local Small, Medium and Micro Enterprises (SMME) group, are employed to undertake various smaller activities however due to the nature of the project, there will be no **local** subcontracting. **C12.8.1 Subcontractor Procedure** The recommendation will be that the Contractor shall advertise and call for competitive tenders in respect of each portion of the works that are required to be subcontracted. The tenders received are then evaluated by both the employer and the contractor. The evaluation panel shall comprises equal representatives from the Employer and from the Contractor The Contractor shall without delay enter into contract with the successful tendering subcontractor based on their accepted tender submission.			

This will promote the cost effective participation and development of smaller registered contractors in larger valued contracts without losing single point of accountability for projects. This will allow the emerging contractors to tender for work in a fair, transparent and equitable manner rather than having to negotiate such contracts with the main contractor. Also guarantees the participation of contractors registered in lower contractor grading designation.

F.....V.....T.....**Item**

C12.8.2 Subcontractor Mentoring

Once the Subcontractors have been identified and engaged, the Contractor shall closely monitor their performance in the execution of their contracts.

The Contractor will be responsible for drawing implementation plan that will assist in managing the development of sub-contractors undertaking Labour Intensive work.

The Contractor will be responsible for management of the sub-contractors and to ensure that they comply with all EPWP requirements as set-out in this specification.

The Contractor and sub-contractors will be required to compile monthly progress reports to be submitted with payment certificates. The reports shall include planned targets with regards to the works and employment, employment of EPWP beneficiaries and project expenditure. Failure to produce monthly reports will render payment certificates incomplete

The contractor will be required to assist, train, mentor and monitor its Sub-contractors and report through monitoring tool on progress of each Sub-contractor.

F.....V.....T.....**Item**

C12.8.3 Portfolio of Evidence

The Contractor is to develop and /or maintain a portfolio of evidence for each sub-contractor. The Portfolio of Evidence is a collection of proof of the training, coaching, guidance and monitoring inputs provided to the Sub-contractor. It is the document which records the development progress of the Sub-Contractor and will need to be updated continually throughout the duration of the contract.

The Portfolio of Evidence should include but not limited to the following documentation:

- The development path designed for each Sub-Contractor,
- The Training course completed by the Sub-Contractor,
- The hours of guiding, coaching and mentoring received for each activity listed in the developmental plan,
- A list of outcomes achieved at each level for each activity.

F.....V.....T.....**Item**

. **Performance and penalties**

The Contractor performance will be monitored throughout the contract. Should the Contractor fail to fulfil his obligation he will be liable for penalties. Payment of the penalty shall not absolve the Contractor of any claim, or relieve the Contractor of any of his duties, obligations or responsibilities under the contract.

- Utilisation of the Sub-Contractors

The Contractor's achievement of the targets will be measured quarterly to determine the progress made to date.

C12.8.4 Local Suppliers

Local material suppliers within the vicinity of the site to be utilise as long as their materials meets the required specification. However, quality and suitability would have to be checked by the employer, if the local suppliers are unable to meet the demand the nearest suitable suppliers are to be used.

Production of materials should be done on site, where economies of scale allow e.g. concrete paving blocks should be encouraged which will enable employment creation and also allow for enterprise development.

F.....V.....T.....Item

C12.8.5 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.

F.....V.....T.....Item

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

F.....V.....T.....Item

e) The Contractor is to allow for extra storage facilities on site for the PPG's tools and equipment.

F.....V.....T.....Item

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 charge by 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. **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**			
	C12.9 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. F.....V.....T.....Item			
	C12.10 EPWP Scope of Work For This Project **Contractors are to price the items on the Bill of Quantities highlighted below, bearing in mind that they are regarded as main sources of job creation, whether sub contracted or undertaken by the main contractor.** **Elements of the scope of work where the application of Labour Intensive Construction methods are indicated with the letters (LI) 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. iv) External works such as landscaping; cleaning; paving; fencing; tarmac; etc. .			

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

DPW: DEPARTMENT OF EDUCATION: STORM DAMAGE DISASTER PROGRAMME: PHASE 16: ETHEKWINI REGION: MANDENI PS

ANNEXURE 10

STRUCTURAL ENGINEERS PROJECT SPECIFICATION BOOKLET

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CONSULTING ENGINEERS

DEPARTMENT OF EDUCATION : STORM DAMAGED DISASTER PROGRAMME : PHASE 16

TYPICAL DETAILS AND SPECIFICATIONS BOOKLET REV.P3

OCTOBER 2018

PRELIMINARY

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SECTION 1
GENERAL SPECIFICATIONS

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REPAIRS TO EXISTING ROOF SHEETING

1. PREPARE AND CLEAN EXISTING SURFACE WHERE THE ROOF APPEARS TO BE LEAKING.
2. APPLY A GENEROUS COAT OF 'SIKA RAIN TITE' (OR EQUALLY APPROVED) BY BRUSH OR ROLLER.
3. EMBED THE 'SIKA RAIN TITE' (OR EQUALLY APPROVED) MEMBRANE INTO THE BASE COAT WHILE IT IS STILL WET.
4. REMOVE AND SMOOTH OUT AIR POCKETS AND CREASES.
5. APPLY A SECOND COAT OF 'SIKA RAIN TITE' (OR EQUALLY APPROVED) ONTO THE MEMBRANE.
6. WHEN TOUCH DRY, APPLY AN ADDITIONAL COAT OF 'SIKA RAIN TITE' (OR EQUALLY APPROVED).
7. REPAIRED AREA OF ROOF SHEETING TO BE PAINTED WITH 2 COATS OF PAINT. COLOUR TO MATCH EXISTING ROOF SHEETING.

NOTE: REFER TO MANUFACTURER'S SPECIFICATIONS ON 'SIKA RAIN TITE ' (OR EQUALLY APPROVED)

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A. ASBESTOS ROOF SHEETING

1. ANY PERSON WHO ERECTS, MAINTAINS, ALTERS, RENOVATES, REPAIRS OR DISMANTLES ASBESTOS ROOF SHEETING, GUTTERS, FASCIA BOARDS AND BARGE BOARDS SHALL ENSURE THAT:
   a) WRITTEN WORK PROCEDURES ARE LAID DOWN AND FOLLOWED TO PREVENT THE RELEASE OF ASBESTOS DUST INTO THE ENVIRONMENT.
   b) ALL RUN-OFF WATER MUST BE FILTERED BEFORE ENTERING THE STORMWATER SYSTEM.
   c) FULL COMPLIANCE WITH THE DEPARTMENT OF LABOUR REQUIREMENTS IN TERMS OF THE SAFE REMOVAL AND/OR THE SAFE REPAIR (PATCHING) OF THE ASBESTOS ROOF SHEETING.
   d) NOTIFICATION IN TERMS OF AN 'ASBESTOS PLAN' MUST BE SUBMITTED TO AN APPROVED INSPECTION AUTHORITY AND THEN TO THE DEPARTMENT OF LABOUR FOR APPROVAL PRIOR TO WORKING ON ANY ASBESTOS ROOF SHEETING.

2. IF ANY HOLES ON THE SHEETING ARE LARGER THAN 75mm X 75mm OR OTHERWISE BADLY DAMAGED OR CRACKED IN MANY AREAS OF THE SHEET, THEN THE EXISTING ASBESTOS ROOF SHEET MUST BE REMOVED AND REPLACED WITH 'NUTEC' FIBRE CEMENT ROOF SHEETING (OR EQUALLY APPROVED). PROFILE AND COLOUR TO MATCH THE EXISTING ROOF SHEETING. REFER TO ITEM 1 ABOVE FOR THE DEPARTMENT OF LABOUR REQUIREMENTS FOR THE SAFE HANDLING OF ASBESTOS SHEETING.

3. WHEN REMOVING AND REPLACING THE ENTIRE ASBESTOS ROOF SHEETING WITH 'NUTEC' ROOF SHEETING (OR EQUALLY APPROVED), ENSURE THAT THE NEW TIMBER PURLINS ARE 76 X 50 GRADE 5 TYPE SA PINE TIMBER WITH THE 76mm DIMENSION PLACED VERTICALLY. NOTE : PURLIN SPACING SHOULD NOT EXCEED 900mm CENTRES. THE USE OF 76 X 50 GRADE 5 TYPE SA PINE TIMBER PURLINS ARE ONLY ACCEPTABLE WHEN TRUSS SPACINGS DO NOT EXCEED 1200mm CENTRES. WHERE TRUSS SPACINGS EXCEED 1200mm CENTRES, THE CONTRACTOR IS TO ENGAGE THE ENGINEER FOR FURTHER RECOMMENDATIONS.

B. STEEL ROOF SHEETING

1. SHEETING SPECIFICATION FOR A COMPLETE NEW ROOF: USE 0,53mm COLOUR BOND OR 0,55mm COLOUPLUS (AZ150) IBR PROFILE SHEETING, SUPPLIED IN SINGLE LENGTHS (FROM ROOF RIDGE TO EAVES GUTTER) FIXED ONTO 76 X 50 GRADE 5 TYPE SA PINE TIMBER PURLINS WITH THE 76mm DIMENSION PLACED VERTICALLY. NOTE : PURLIN SPACING SHOULD NOT EXCEED 900mm CENTRES. THE USE OF 76 X 50 GRADE 5 TYPE SA PINE TIMBER PURLINS ARE ONLY ACCEPTABLE WHEN TRUSS SPACINGS DO NOT EXCEED 1200mm CENTRES. WHERE TRUSS SPACINGS EXCEED 1200mm CENTRES, THE CONTRACTOR IS TO ENGAGE THE ENGINEER FOR FURTHER RECOMMENDATIONS.
   COLOUR OF THE NEW SHEETING TO MATCH THE ROOF SHEETING ON EXISTING CLASSROOM BLOCKS OR OTHERWISE DIRECTED BY PROJECT MANAGER.
2. MINOR DAMAGE TO EXISTING STEEL ROOF SHEETING: REMOVE AND REPLACE DAMAGE ROOF SHEETING WITH NEW STEEL SHEETING. NEW SHEETING TO MATCH THE EXISTING SHEETING PROFILE, TYPE, OVERALL THICKNESS AND COLOUR. SHEETING TO BE SUPPLIED IN SINGLE LENGTHS (FROM ROOF RIDGE TO EAVES GUTTER).

C. CONCRETE ROOF TILES

1. ALL DAMAGED AND CRACKED CONCRETE ROOF TILES ARE TO BE REMOVED AND REPLACED WITH NEW CONCRETE TILES TO MATCH THE EXISTING ROOF TILES. COLOUR OF THE NEW CONCRETE TILES TO MATCH THE EXISTING ROOF TILES.

D. DAMAGED ROOF TRUSSES REPLACED WITH COMPLETE NEW 'GANG NAILED' ROOF STRUCTURE

1. EXISTING DAMAGED TIMBER ROOF TRUSSES TO BE REMOVE AND CARTED OF SITE.
2. THE INSTALLATION OF THE GANG-NAILED ROOF STRUCTURE BY THE MAIN CONTRACTOR IS TO BE : **A DESIGN, SUPPLY, INSTALL AND CERTIFY** CONTRACT.
3. IT IS THE RESPONSIBILITY OF THE MAIN CONTRACTOR TO SUBMIT THE REQUIRED TR1 AND TR2 CERTIFICATES TO US FOR OUR RECORDS AT THE RELEVANT STAGE OF THE PROJECT. THE TR1 AND TR2 CERTIFICATES CERTIFY THAT THE OVERALL ROOF STRUCTURE IS STRUCTURALLY STABLE.
4. IT IS THE RESPONSIBILITY OF THE MAIN CONTRACTOR TO ENSURE THAT THE APPROVED COMPETENT PERSON (REGISTERED WITH ECSA) ISSUING THE TR1 CERTIFICATE HAS INSPECTED THE SITE, COMPLIED WITH ALL THE REQUIRED SPECIFICATIONS AS NOTED ABOVE, AND HAS PROVIDED HIS OWN SPECIFICATIONS / DRAWINGS FOR THE TRUSS TIE-DOWNS, BRACING, ETC.
5. THE TR1 CERTIFICATE CONFIRMS THAT THE GANG-NAILED ROOF TRUSSES HAVE BEEN DESIGNED BY AN APPROVED COMPETENT PERSON (REGISTERED WITH ECSA) AND THE TR2 CERTIFICATE CONFIRMS THAT THE INSTALLATION OF THE GANG-NAILED ROOF TRUSSES ON SITE HAS BEEN INSPECTED, CHECKED FOR COMPLIANCE WITH THE ROOF TRUSS SHOP DRAWINGS AND APPROVED BY AN APPROVED COMPETENT PERSON (REGISTERED WITH ECSA).

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DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	GENERAL SPECIFICATIONS: REPLACEMENT OF DAMAGED ROOFS AND TRUSSES	2018.10.18	P2
		PROJ. No. 474	SKETCH No. Sk 101

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DAMAGED CEILINGS AND CORNICES

1. REMOVE DAMAGED CEILING AND CART RUBBLE OFF SITE.
2. PREPARE SURFACE TO RECEIVE NEW CEILING.
3. CONSTRUCT NEW CEILING WITH 9.5mm THICK GYPSUM (OR EQUALLY APPROVED) BOARD. 44mm x 10mm TIMBER COVER STRIP OR 'PLASTIC M-STRIP' TO BE INSTALLED AT CEILING JOINTS. ALL TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
4. CONSTRUCT CEILING CORNICES WITH NUTEC EVERITE (OR EQUALLY APPROVED) 75mm COVED CORNICES. ALL TO BE INSTALLED ACCORDING TO MANUFACTURES SPECIFICATIONS.
5. ALL CEILING BOARDS TO BE FIXED ONTO NEW 38mm x 50mm (WITH 50mm DIMENSION PLACED VERTICALLY) GRADE 5 SA PINE TIMBER BATTENS. BATTENS SPACING TO BE MAX. 400mm C/C.
6. ALL MATERIALS TO BE SABS APPROVED.
7. ALL CEILINGS AND CORNICES TO BE PAINTED WITH 2 COATS 'PLASCON WHITE' CEILING PAINT (OR EQUALLY APPROVED).

RECOMMENDED TIMBER BATTEN SIZES FOR 9.5mm thk. GYPSUM (OR EQUALLY APPROVED) CEILING BOARDS

TIMBER JOIST / TRUSS SPACING	TIMBER BATTEN SIZE
< 1000mm	38mm x 38mm GRADE 5 SA PINE
1001mm to 1200mm	38mm x 50mm GRADE 5 SA PINE (WITH 50mm DIMENSION PLACED VERTICALLY)
1201mm to 1400mm	50mm x 76mm GRADE 5 SA PINE (WITH 76mm DIMENSION PLACED VERTICALLY)
> 1401mm	CONSULT WITH APPOINTED STRUCTURAL ENGINEER.

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	GENERAL SPECIFICATIONS: REPLACE DAMAGED CEILINGS AND CORNICES	2018.10.18	P3
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REPLACEMENT OF SISALATION :

1. REMOVE EXISTING ROOF SHEETING AND STORE FOR RE-USE OR TO BE ASSESSED (BY THE APPOINTED STRUCTURAL ENGINEER) ON SITE IF ROOF SHEETING NEEDS TO BE REPLACED.
2. INSTALL MULTIPURPOSE ROOF INSULATION. SPECIFICATION - SISALATION MULTIPURPOSE LIGHT DUTY 439 (OR EQUALLY APPROVED). ALL TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATION.
3. RE-INSTALL OR REPLACE ROOF SHEETING AS REQUIRED / INSTRUCTED BY THE APPOINTED STRUCTURAL ENGINEER.
4. ALL MATERIAL TO BE SABS APPROVED.

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NOTE: BATCHING AND MIXING MATERIAL :

- 1 BAG OF CEMENT HAS A VOLUME OF 33 LITRES.
- 1 BUILDERS WHEELBARROW HAS A VOLUME OF 65 LITRES WHICH IS EQUIVALENT TO 2 BAGS OF CEMENT.
- DO NOT SPLIT BAGS WHEN BATCHING EXCEPT FOR SMALL OR NO STRUCTURAL WORK.
- USE A CONCRETE MIXER OR HAND MIXER ON A DRY, CLEAN, NON-ABSORBENT SURFACE.
- WHEN MIXING CONCRETE BY HAND, FIRST MIX THE CEMENT, SAND AND WATER THOROUGHLY AND MIX THE STONE LAST - THIS SAVES A LOT OF EFFORT.
- MIX UNTIL COLOUR AND WORKABILITY IS UNIFORM.
- ALL CONCRETE TO BE VIBRATORED WHEN PLACING.
- CONCRETE CUBE TEST RESULTS TO BE SUBMITTED TO THE ENGINEER AS PER BELOW:
  - > 3No. CUBES TESTS FOR 7 DAY RESULTS
  - > 3No. CUBES TESTS FOR 28 DAY RESULTS

CONCRETE STRENGTH	CEMENT (50KG BAGS)	SAND (WHEELBARROWS)	STONE (WHEELBARROWS)	WATER (LITRES)
20 MPa	2	4	4	55
25 MPa	2	3	3	55

TYPICAL CONCRETE MIX DESIGN

PROJECT:	DETAILS:	DATE	REVISION
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GUTTERS AND DOWNPIPES

1. GUTTERS AND DOWNPIPES TO A COMPLETELY NEW ROOF :

   ALL GUTTERS TO BE SEAMLESS 110mm HALF ROUND uPVC GUTTERS – ALL TO SUPPLIER'S SPECIFICATIONS.
   DOWNPIPES TO BE 75mm DIAMETER uPVC DOWNPIPES, ALL FIXED AS PER SUPPLIER'S SPECIFICATIONS.
   NOTE: GUTTER BRACKETS ARE TO BE FIXED AT A MAXIMUM OF 750mm CENTRES.

2. GUTTER SUPPORT :

   NUTEC FASCIA BOARDS (OR EQUALLY APPROVED) ARE TO BE FIXED (AT MAXIMUM 750mm CENTRES) TO A 114X38 (GRADE 5) SA PINE TIMBER CLOSURE PIECE OF WHICH IS FITTED AT THE GUTTER END OF THE VERANDAH OVERHANG AND BETWEEN ALL ROOF TRUSSES TO SUPPORT THE NEW FASCIA BOARD AND GUTTERS.

3. COMPLETE DAMAGE TO ALL EXISTING ALUMINIUM GUTTERS AND DOWNPIPES ONLY :

   INSTALL NEW GUTTERS AND DOWNPIPES AS PER ITEM 1 ABOVE.

4. MINOR DAMAGE (IN SMALL SECTIONS) TO EXISTING GUTTERS AND DOWNPIPES (PVC, NUTEC, ALUMINIUM, ETC.) :

   REMOVE ONLY THE DAMAGED SECTIONS OF GUTTERS AND DOWNPIPES AND REPLACE WITH NEW GUTTERS AND DOWNPIPES TO MATCH EXISTING IN MATERIAL, PROFILE, TYPE AND COLOUR.

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REPLACING GLAZING

1. REMOVE EXISTING PUTTY.
2. RUB THE WINDOW FRAME WITH A WIRE BRUSH TO REMOVE ANY REMAINING GLAZING PUTTY OR OLD CAULK FROM THE GROOVES.
3. SAND THE WINDOW FRAME LIGHTLY WITH GRIT SANDPAPER TO REMOVE STUCK-ON CAULK, PUTTY OR WOOD SPLINTERS.
4. ALIGN THE GLAZING WITH THE GROOVE IN THE FRAME AND PUTTY INTO PLACE. USE 4mm thk. (SABS APPROVED) CLEAR GLAZING FOR ALL WINDOWS.
5. HOLD A METAL PUTTY KNIFE AT A LOW ANGLE TO THE WINDOW FRAME AND PUSH THE KNIFE ALONG THE WINDOW FRAME TO REMOVE THE EXCESS PUTTY.

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ROOF SHEETING PAINT SPECIFICATION

1. EXISTING ASBESTOS ROOF AND EXISTING FIBRE CEMENT ROOF:
   EXISTING ASBESTOS ROOF COVERING AND FIBRE CEMENT ROOF COVERING & ASSOCIATED RAINWATER PRODUCTS TO BE HIGH PRESSURE POWER CLEANED OR IN SOME CIRCUMSTANCES SCRUBBED CLEAN. APPLY 2 COATS 'DULUX ROOFGUARD' (OR EQUALLY APPROVED) EXTERIOR ROOF COATING WITH SOLARFLEX PROPERTIES.
2. EXISTING GALVANISED STEEL ROOF:
   PLEASE ENSURE SURFACES ARE SOUND, CLEAN AND HAVE BEEN CORRECTLY PREPARED USING APPROPRIATE PRIMERS WHERE RELEVANT. THEN APPLY 2 COATS OF 'DULUX ROOFGUARD' (OR EQUALLY APPROVED) EXTERIOR ROOF COATING WITH SOLARFLEX PROPERTIES.
   APPLICATION TO BE WITH A BRUSH OR ROLLER. RE-COAT AFTER 4 HOURS. TOUCH DRY AFTER 1 HOUR.
   PLEASE NOTE COVERAGE MAY VARY ACCORDING TO SURFACE POROSITY.

PROJECT:	DETAILS:	DATE	REVISION
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NEW DOORS

1. DOOR FRAMES
   GALVANISED STOCK STEEL DOUBLE REBATED DOOR FRAMES (1.2mm THICK) FOR 115mm AND 230mm WALLS - NOT PAINTED WITH 1 PAIR OF 100mm GALVANISED STEEL LOOSE-PIN HINGES WELDED IN POSITION

2. DOORS
   MERANTI DOORS AS PER ARCHITECTS LAYOUT. ALL DOORS TO BE PRIMED, UNDERCOATED AND PAINTED WITH 2 COATS OF GLOSS ENAMEL PAINT.

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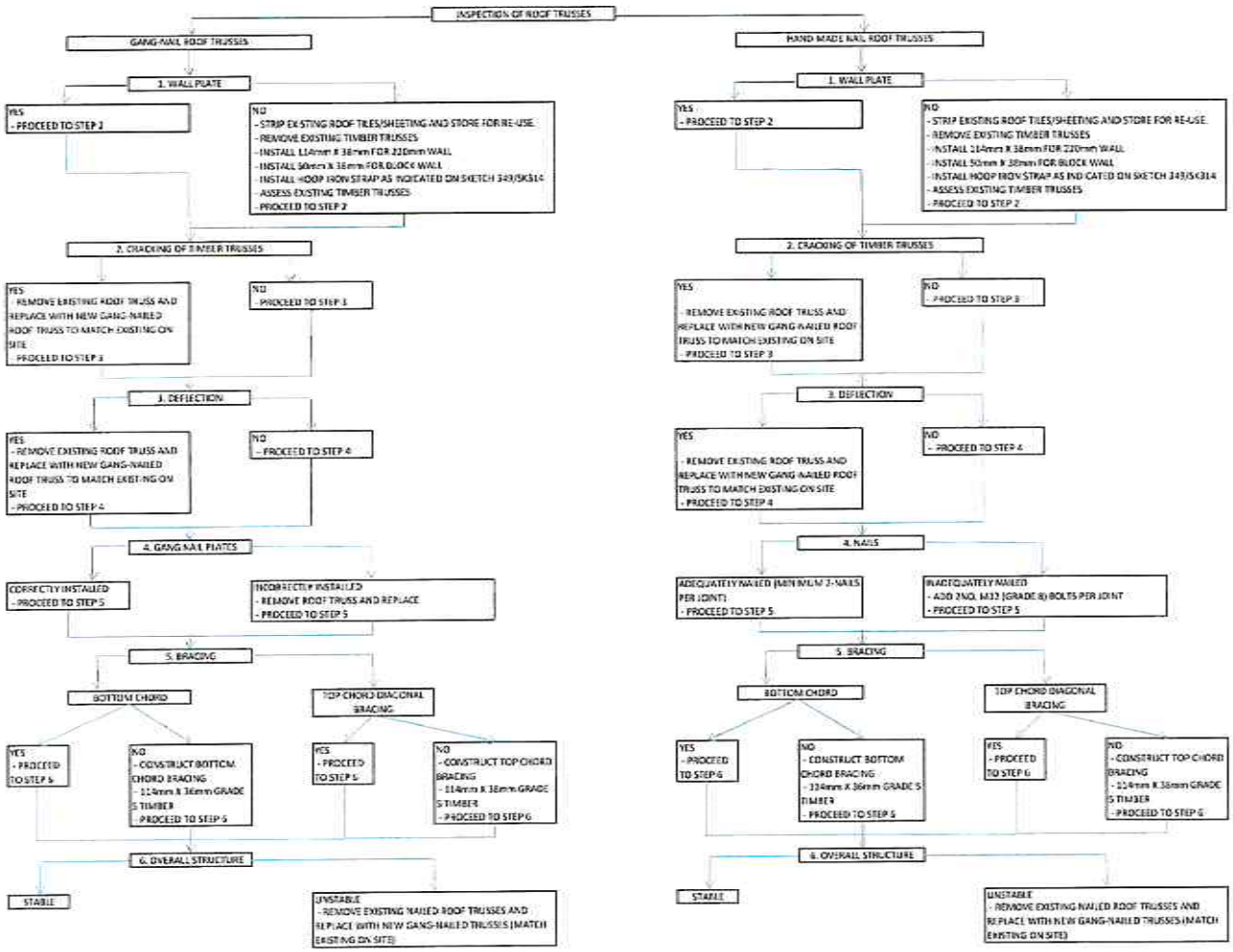

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PROJECT:
DEPARTMENT OF EDUCATION
STORM DAMAGED DISASTER
PROGRAMME PHASE 16

DETAILS:
ROOF TRUSS INSPECTION
SPECIFICATIONS

DATE	REVISION
2018.09.06	P1
PROJ No. 474	SKETCH No. Sk 109

SECTION 2
STRUCTURAL TYPICAL DETAILS AND SPECIFICATIONS

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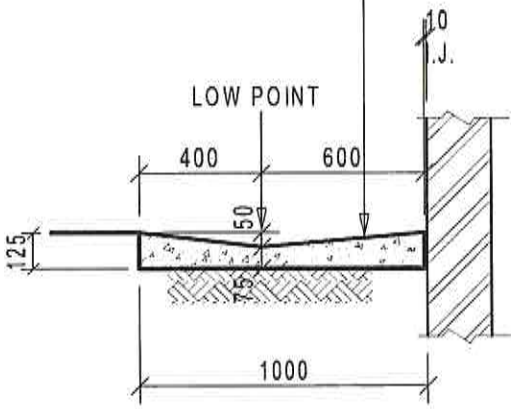
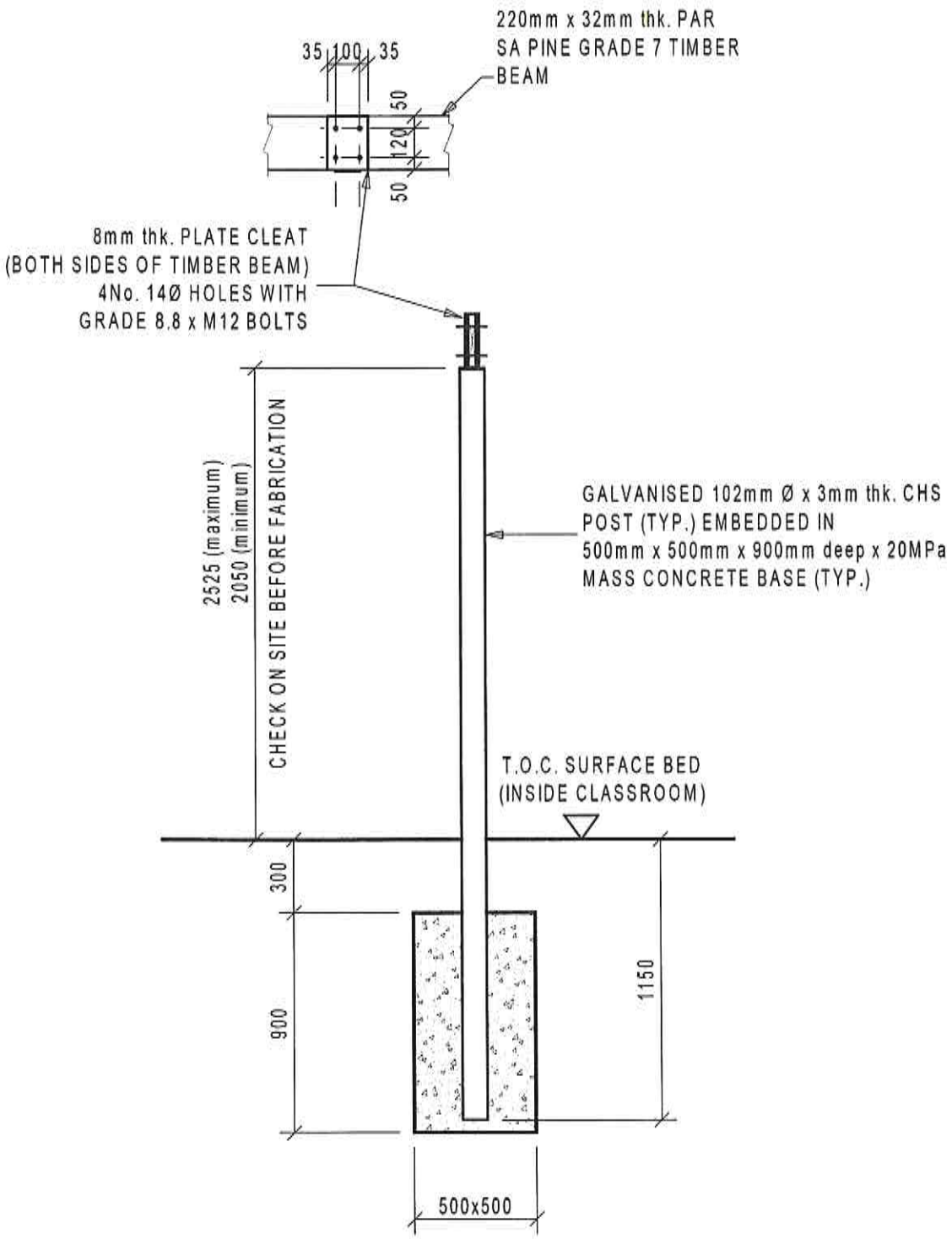
CONCRETE CHANNELS/APRON:
125mm thk. X 20MPa CONCRETE APRONS
REINFORCED WITH MESH REF 193 PLACED 30mm
FROM BOTTOM LAID TO A FALL TO RELIEF POINTS
CAST IN ALTERNATE PANELS OF 2000mm ON
FILL COMPACTED TO 95% MOD AASHTO.
COMPACTION TEST RESULTS TO BE SUBMITTED
TO THE ENGINEER FOR APPROVAL PRIOR TO CASTING.



TYPICAL SECTION
THRU' 'V' DRAIN APRON / CHANNEL

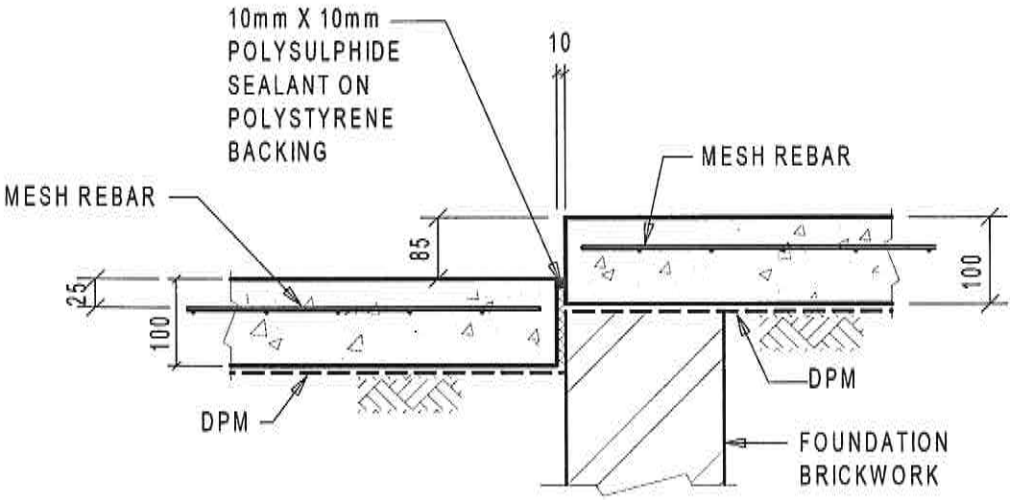
NOTE :
ALL 'V' DRAIN TEMPLATES ARE TO BE INSPECTED BY THE ENGINEER PRIOR TO ANY WORK BEING PUT TO HAND.

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	EXTERNAL CONCRETE 'V' DRAIN APRON CHANNEL	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 300



STEEL POST DETAIL

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	WALKWAY ROOF SUPPORT: STEEL POST DETAIL	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 301



EXTERNAL DOOR THRESHOLD (E.D.T.)

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	EXTERNAL DOOR THRESHOLD DETAIL (E.D.T.)	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 302

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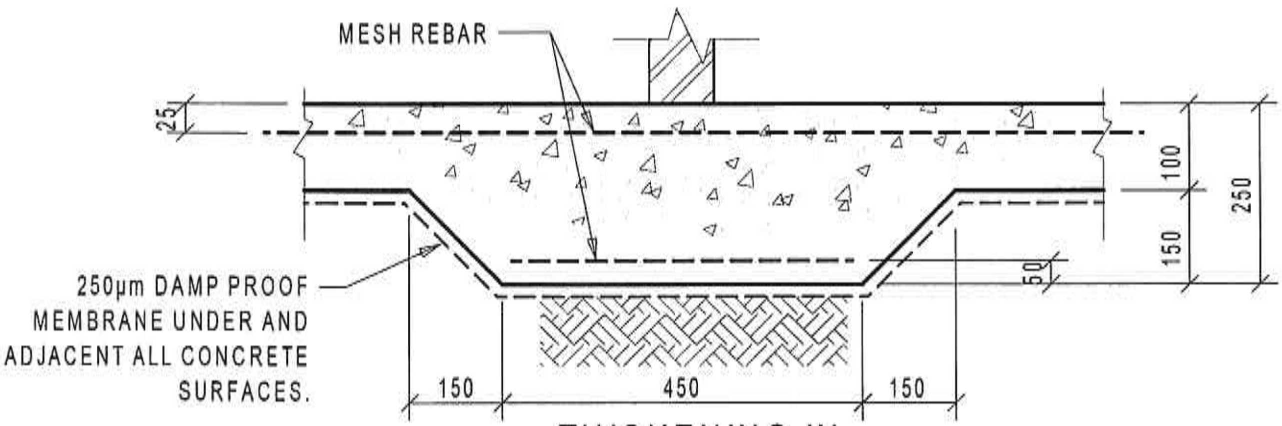

THICKENING IN SURFACE BED (TYP)

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	THICKENING IN SURFACE BED FOR 110mm WALL	2018.10.18	P2
		PROJECT No. 474	SKETCH No. SK 303

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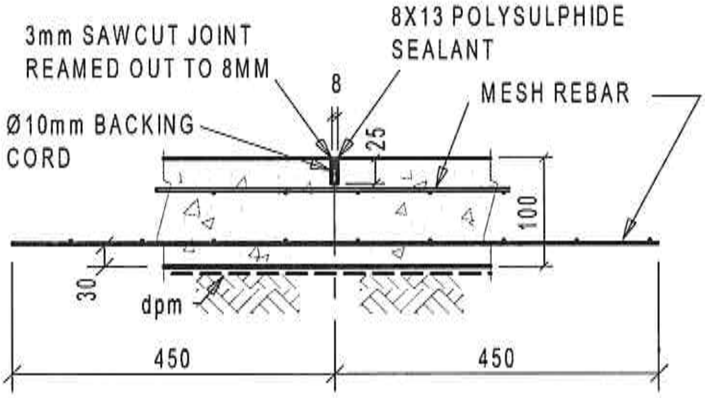
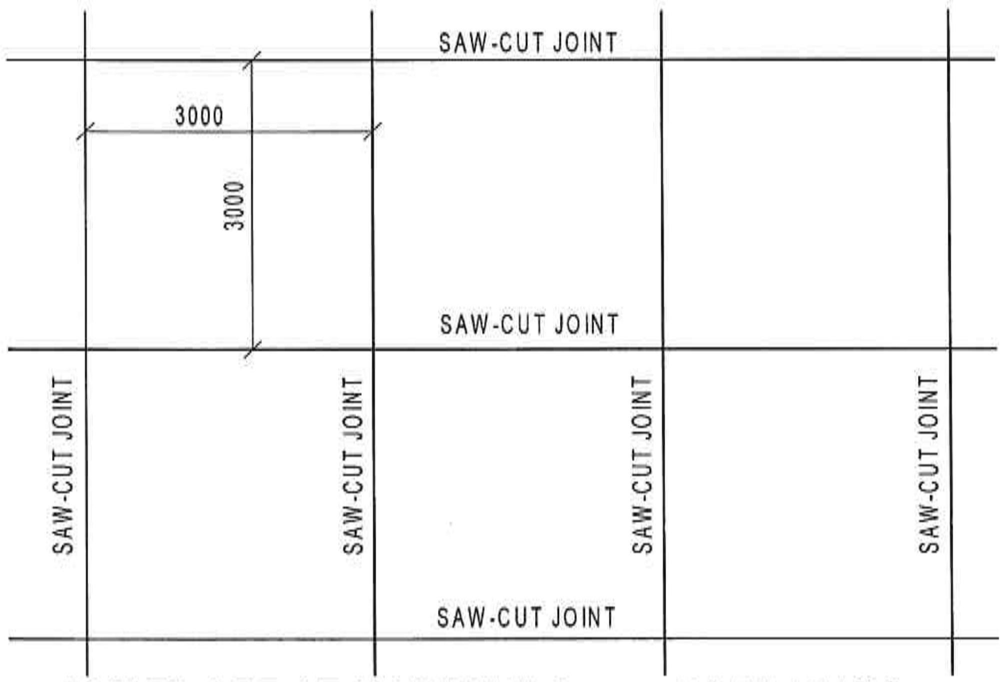


TYPICAL SAW-CUT JOINT DETAIL



JOINTS ARE AT MAXIMUM 3m crs BOTH WAYS

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL SAW-CUT JOINT DETAIL	2018.09.06	P1
		PROJECT No.	SKETCH No.
		474	SK 304

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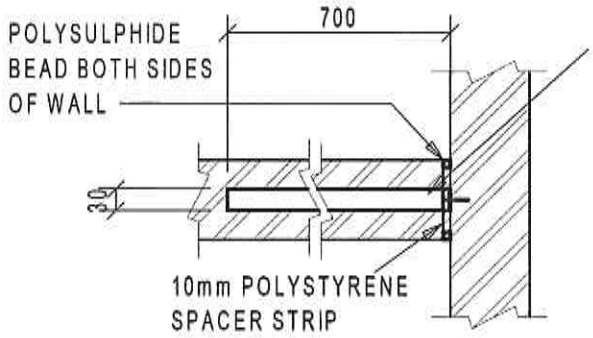
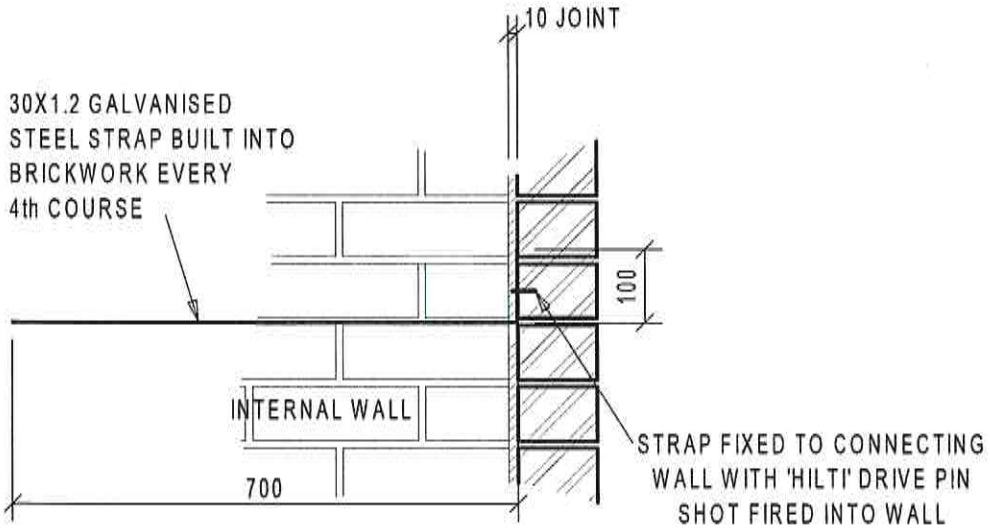
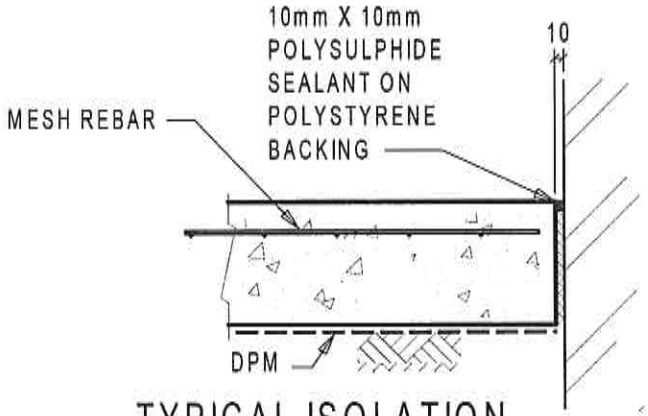


PLAN 110 WALL



ELEVATION 110 WALL

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	INTERNAL WALL CONNECTION DETAIL	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 305



TYPICAL ISOLATION JOINT DETAIL (I.J.)

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL ISOLATION JOINT DETAIL (I.J.)	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 306

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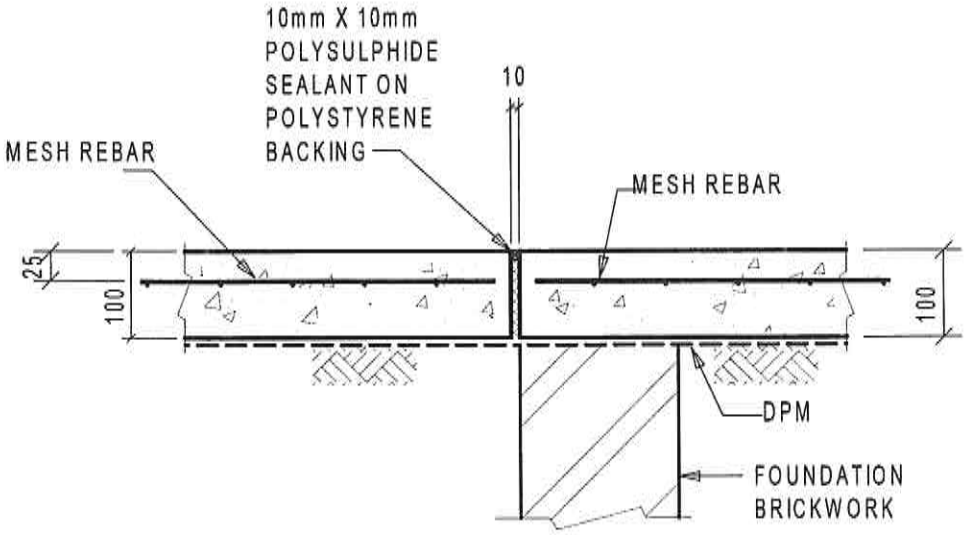

INTERNAL DOOR THRESHOLD (I.D.T.)

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	INTERNAL DOOR THRESHOLD (I.D.T.)	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 307

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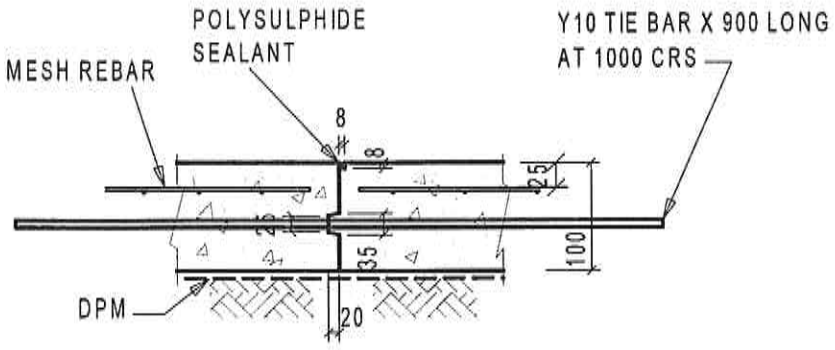

TYPICAL CONSTRUCTION JOINT DETAIL

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL CONSTRUCTION JOINT DETAIL	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 308

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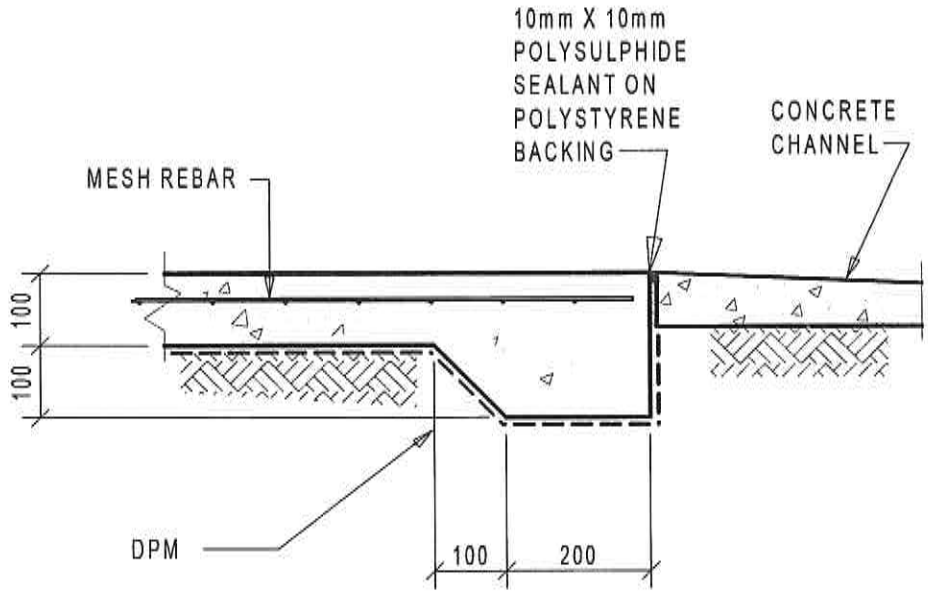

TYPICAL EDGE THICKENING DETAIL

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL EDGE THICKENING DETAIL	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 309

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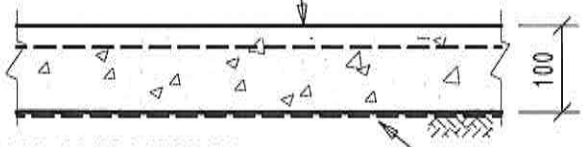
100mm thk. x 25MPa STEEL FLOATED
CONCRETE SLAB REINFORCED WITH MESH REF 193
PLACED 25mm FROM TOP ON 250µm DAMP PROOF MEMBRANE
ON 50mm TREATED & RAMMED RIVERSAND ON
WELL WATERED CLEAN EARTH FILL COMPACTED TO 90%
MOD AASHTO IN LAYERS NOT EXCEEDING 150mm.
SOIL TO BE POISONED IN ACCORDANCE WITH SABS 1165.
CERTIFICATE MUST BE PROVIDED. COMPACTION TEST
RESULTS TO BE SUBMITTED TO THE ENGINEER FOR
APPROVAL PRIOR TO CASTING OF CONCRETE.



IN-SITU SUBBASE COMPACTED TO
MIN. 90% MOD AASHTO. COMPACTION TEST
RESULTS TO BE SUBMITTED TO THE ENGINEER FOR
APPROVAL PRIOR TO CASTING OF CONCRETE.

250µm DAMP PROOF
MEMBRANE UNDER AND
ADJACENT ALL CONCRETE
SURFACES.

TYPICAL SECTION THRU' SURFACE BED

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL SECTION THRU' SURFACE BED	2018.10.18	P2
		PROJECT No. 474	SKETCH No. SK 310

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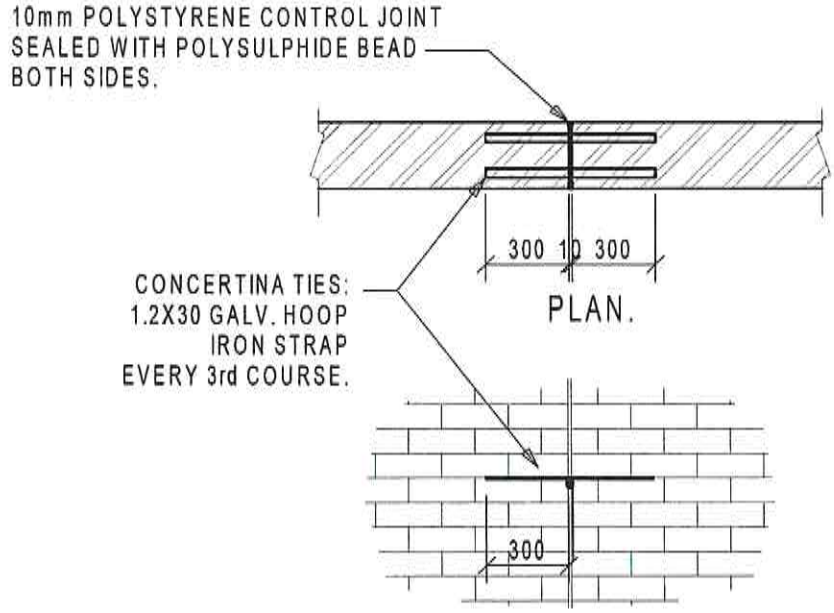

ELEVATION

TYPICAL CONTROL JOINT DETAIL FOR BRICKWORK

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL CONTROL JOINT DETAIL FOR BRICKWORK	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 311

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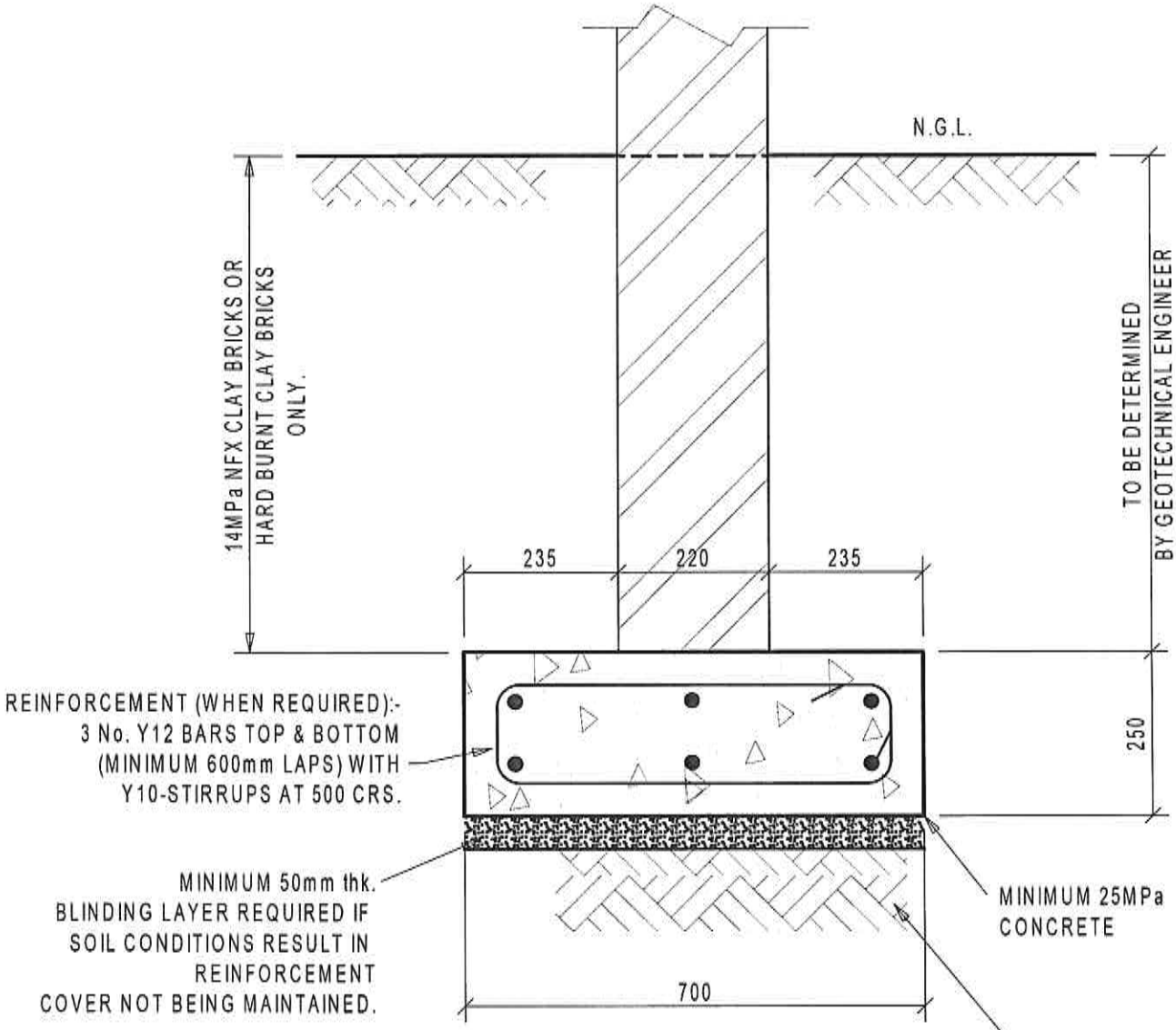
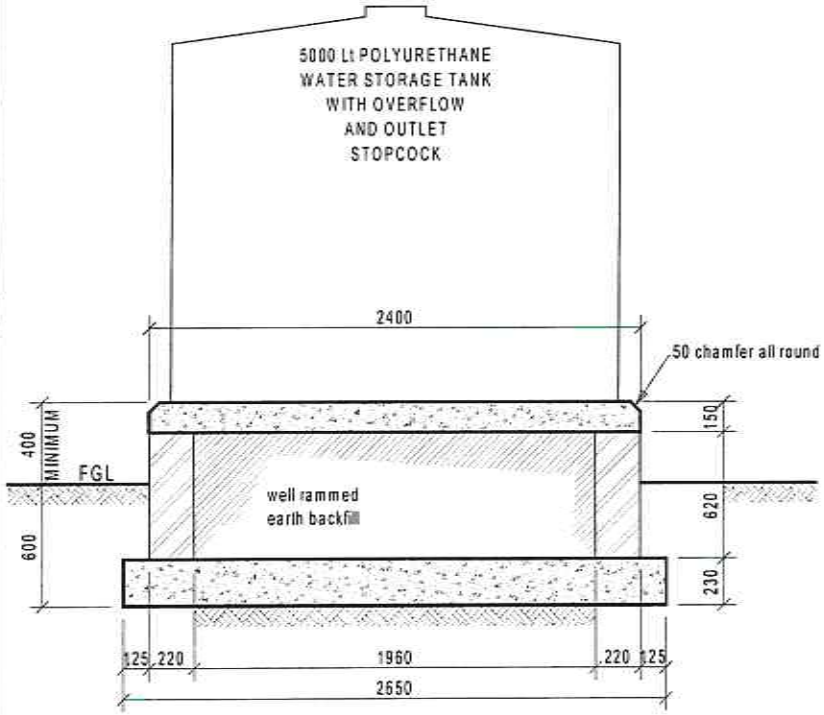
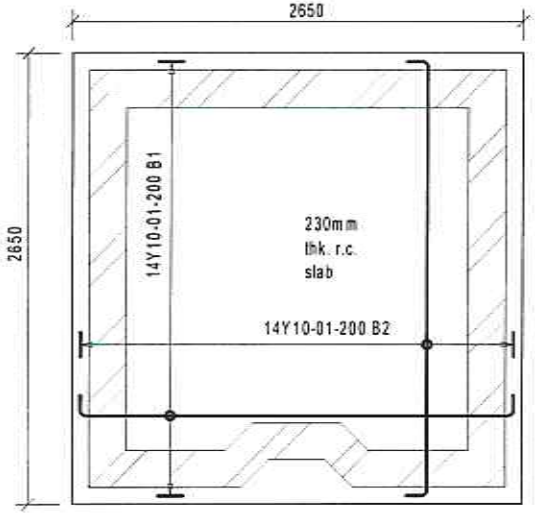


220mm WALL FOUNDATION DETAIL

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	220mm WALL FOUNDATION DETAIL	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 312

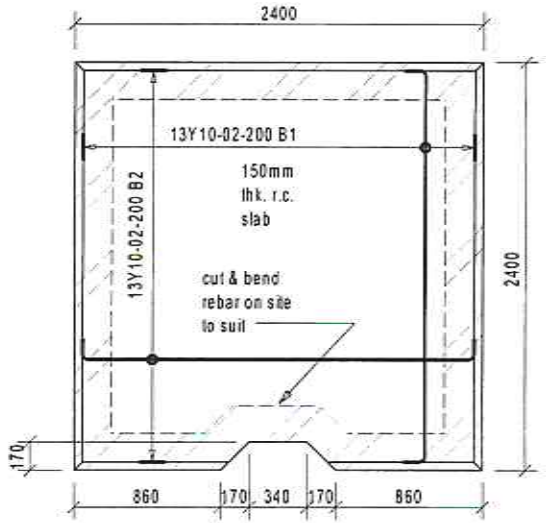


TYPICAL SECTION



PLAN ON FOOTING

50mm cover to reinforcement all round



PLAN ON TANK SUPPORT SLAB

25mm cover to reinforcement all round

NOTES:

1. SEE ARCHITECTS LAYOUT FOR LOCATION OF TANK.
2. ALL FOUNDATION EXCAVATIONS TO BE COMPACTED TO A MINIMUM OF 93% MOD AASHTO PRIOR TO CONCRETE BEING CAST. COMPACTION TEST RESULTS ARE TO BE SUBMITTED TO THE ENGINEER PRIOR TO CASTING OF CONCRETE.
3. MINIMUM 25MPa CONCRETE STRENGTH AT 28 DAYS
4. MINIMUM 14MPa NFX BRICKWORK IN CLASS II MORTAR

Polyurethane Water Storage Tank – 'strapping' down specifications

All water storage tanks are to be strapped down (at each of the 4 stubs on top of the tank) to the supporting concrete base with 2 no. off 4mm diameter fully galvanized stay wires (allow for 'turnbuckles' to tighten each of the 'double strap' stay wires). Each of the 'double strap' stay wires are to be tied to a M12 eye bolt of which is to be drilled and fixed to the 4 corners of the concrete supporting base. The specification for the eye bolt is as follows : galvanised mild steel - M12 eye bolt with 25mm eye inside diameter and with 80mm long shank.

MEMBER	No OF	BARS PER MEMB	DIA.	LENGTH	TOTAL NUM-BER	MARK	S C	BENDING A
	1	28	Y10	2750	28	01	35	2550
		26	Y10	2500	26	02	35	2300

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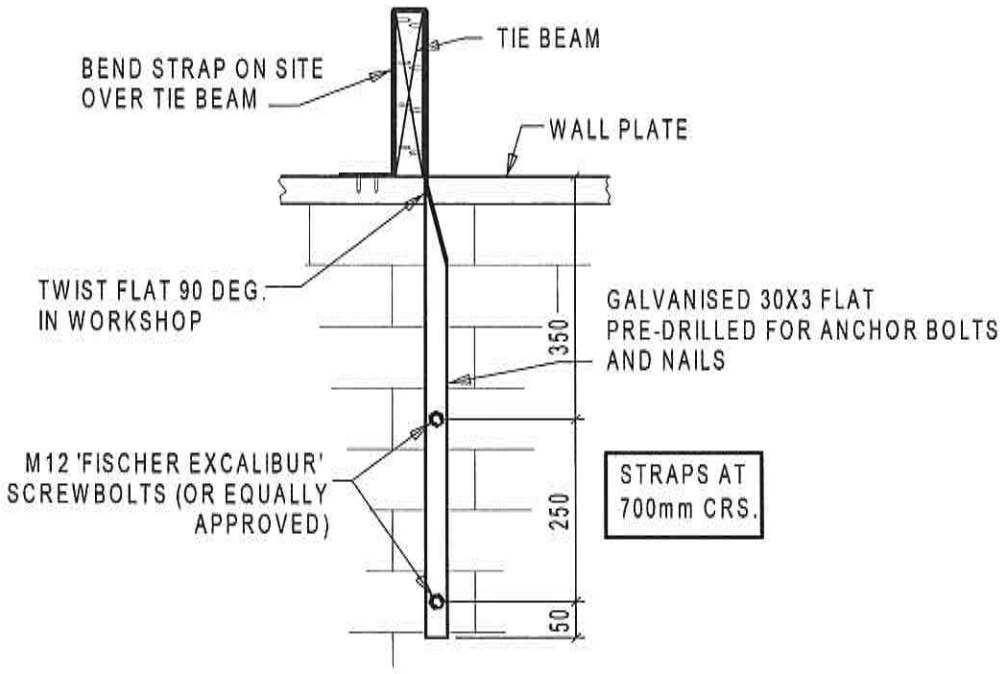
PROJECT
DEPARTMENT OF EDUCATION
STORM DAMAGED DISASTER
PROGRAMME PHASE 16

DATE
2018.10.18

REVISION
P2

DETAILS
TYPICAL WATER SUPPORT TANK SUPPORT
CONCRETE & REINFORCEMENT
LAYOUT & DETAILS

DRG. No.
474 / Sk 313



SUGGESTED METHOD TO FIX NEW PRE-FABRICATED TIMBER ROOF TRUSSES TO EXISTING BRICKWORK

ALL DAMAGED ROOF TRUSSES TO BE REPLACED
WITH PRE-FABRICATED TIMBER ROOF TRUSSES
TO MATCH EXISTING.
ALL OTHER DAMAGED TIMBER BATTENS, WALL PLATES, ETC.
TO BE REMOVED AND REPLACED WITH NEW TIMBER
TO MATCH EXISTING.

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TIMBER ROOF TRUSS ANCHOR DETAIL	2018.10.18	P2
		PROJECT No. 474	SKETCH No. SK 314

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GENERAL PLASTER REPAIRS & BRICKWORK/BLOCKWORK STITCHING REPAIRS SPECIFICATIONS

GENERAL PLASTER 'CRACK' REPAIRS:

1. RECOMMENDATIONS & SPECIFICATIONS:

ALL PLASTER 'CRACKING' MUST BE REPAIRED AS SPECIFIED BELOW. THE CONTRACTOR IS ALSO REQUIRED TO DETERMINE IF ANY CRACKS IN THE PLASTER HAVE BEEN TRANSFERRED TO THE BLOCKWORK/BRICKWORK. (CONTRACTOR IS REQUIRED TO CUT 100mm LONG x 20mm WIDE INSPECTION SLOT). IF A CRACK HAS TRANSFERRED TO THE BLOCKWORK/BRICKWORK, THEN IT NEEDS TO BE REPAIRED AS SET OUT IN THE SPECIFICATION FOR BLOCKWORK/BRICKWORK 'STITCHING'.

1.1 SPECIFICATION FOR GENERAL 'PLASTER' REPAIR:

BREAK OUT AND REMOVE DAMAGED PLASTER TO 50MM INTO SOUND PLASTER. CLEAN WALL AND APPLY 'SIKA PLASTERSTIK' (OR EQUALLY APPROVED) BONDING AGENT TO MANUFACTURER'S SPECIFICATIONS. RE-PLASTER WALL AND PAINT TO ARCHITECTS SPECIFICATIONS.

1.2 SPECIFICATION FOR PLASTER REPAIR 'CRACKING':

RAKE OUT CRACK 6mm x 6mm DEEP. CLEAN OUT ALL DEBRIS/LOOSE MATERIAL. FILL WITH ACRYLIC FILLER - 'SIKACRYL' (OR EQUALLY APPROVED) TO MANUFACTURERS SPECIFICATIONS. PAINT TO ARCHITECTS SPECIFICATIONS.

1.3 SPECIFICATION FOR BLOCKWORK/BRICKWORK 'STITCHING' REPAIR:

- RAKE OUT CRACK. REMOVE ALL DEBRIS/LOOSE MATERIAL.
- STITCH CRACK IN BLOCKWORK/BRICKWORK WITH R8 REINFORCING RODS.
- R8 REINFORCING RODS ARE TO BE 300mm LONG WITH 50mm BENDS AT BOTH ENDS - TOTAL LENGTH = 400mm.
- R8 REINFORCING RODS ARE TO BE EPOXY GROUTED WITH 'PROSTRUCT 617' GENERAL PURPOSE EPOXY ADHESIVE (OR EQUALLY APPROVED) AT 250mm CENTRES, AND GROUTED INTO (10mm DEEP) SLOTS CUT INTO BLOCKWORK/BRICKWORK AND WITH (60mm DEEP) 10mm DIA. DRILL HOLES AT EACH END TO ACCOMMODATE THE BENDS OF THE REINFORCING RODS.
- ALL SLOTS AND DRILL HOLES TO BE COMPLETELY FILLED WITH EPOXY ADHESIVE.
- ALL SLOTS TO BE CUT PERPENDICULAR TO THE CRACK IN THE BLOCKWORK/BRICKWORK.
- EPOXY ADHESIVE APPLICATION TO BE AS PER MANUFACTURERS' SPECIFICATIONS.
- APPLY 'SIKA PLASTERSTIK' (OR EQUALLY APPROVED) AND RE-PLASTER WALL, HOWEVER IF LARGE AREAS OF PLASTER HAS BEEN REMOVED, 450mm WIDE 'CHICKEN WIRE MESH' MUST BE 'TACKED ON' OVER THE CRACKED AREA PRIOR TO RE-PLASTERING.
- RE-PAINT PLASTER TO ARCHITECTS SPECIFICATIONS.

FOR CONSTRUCTION

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	GENERAL PLASTER REPAIRS & BRICKWORK/BLOCKWORK STITCHING REPAIRS SPECIFICATIONS	2018.10.18	P2
		PROJECT No. 474	SKETCH No. Sk315

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CONCRETE SPALLING REPAIRS FOR REPAIRS UP TO 30mm THICK :

SURFACE PREPARATION :

" REMOVE ALL LOOSE, UNSOUND CONCRETE FROM THE AREAS TO BE REPAIRED.
" CUT OUT AROUND THE AREAS TO BE REPAIRED TO A MINIMUM DEPTH OF 10mm TO AVOID FEATHER EDGING.
" HIGH PRESSURE WATER BLAST THE PREPARED AREAS TO REMOVE ANY CONTAMINANTS.
" ENSURE THAT THE SUBSTRATE ONTO WHICH THE REPAIR MORTAR IS TO BE APPLIED IS SOUND AND FREE FROM LOOSE MATERIAL.
" IF REINFORCING IS EXPOSED & SHOWS SIGNS OF CORROSION, THE REINFORCING SHALL BE OPENED UP BY BREAKING OUT THE CONCRETE TO A DEPTH OF 20mm BELOW THE REINFORCING AND 50mm BEYOND THE CORRODED LENGTH OF THE REINFORCING.
" ANY EXPOSED STEEL MUST BE MECHANICALLY CLEANED AND COATED WITH 1 COAT OF 'PRO-STRUCT 688' : ZINC RICH PRIMER (OR EQUALLY APPROVED) @ 4m²/LT.
" REMOVAL OF BADLY CORRODED REINFORCEMENT AND ITS REPLACEMENT-ALL TO ENGINEERS INSTRUCTIONS ON SITE.

PRIMING :

" PRE-DAMPEN PREPARED SURFACE WITH WATER.
" DO NOT ALLOW TO DRY OUT PRIOR TO THE APPLICATION OF THE 'PRO-STRUCT 528' : STRUCTURAL CONCRETE (OR EQUALLY APPROVED) .

REPAIR MORTAR :

" APPLY 'PRO-STRUCT 528' : STRUCTURAL CONCRETE (OR EQUALLY APPROVED) INTO THE PRE-SATURATED SURFACE.
" COVERAGE WILL BE APPROXIMATELY 1.4m² @ 10mm THICK PER 25KG BAG OF REPAIR MORTAR.
" ENSURE COMPLETE SUBSTRATE CONTACT AND MAXIMUM COMPACTION.
" CURE THE REPAIRS BY KEEPING THEM DAMP FOR 24 HOURS AFTER THE INITIAL SET HAS TAKEN PLACE.

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	CONCRETE SPALLING REPAIRS - FOR REPAIRS UP TO 30mm THICK	2018.10.18	P2
		PROJECT No. 474	SKETCH No. SK 316

CONCRETE SPALLING REPAIRS
FOR REPAIRS OVER 30mm THICK :

SURFACE PREPARATION :

- " REMOVE ALL LOOSE, UNSOUND CONCRETE FROM THE AREAS TO BE REPAIRED.
- " CUT OUT AROUND THE AREAS TO BE REPAIRED TO A MINIMUM DEPTH OF 10mm TO AVOID FEATHER EDGING.
- " HIGH PRESSURE WATER BLAST THE PREPARED AREAS TO REMOVE ANY CONTAMINANTS.
- " ENSURE THAT THE SUBSTRATE ONTO WHICH THE REPAIR MORTAR IS TO BE APPLIED IS SOUND AND FREE FROM LOOSE MATERIAL.
- " IF REINFORCING IS EXPOSED & SHOWS SIGNS OF CORROSION, THE REINFORCING SHALL BE OPENED UP BY BREAKING OUT THE CONCRETE TO A DEPTH OF 20mm BELOW THE REINFORCING AND 50mm BEYOND THE CORRODED LENGTH OF THE REINFORCING.
- " ANY EXPOSED STEEL MUST BE MECHANICALLY CLEANED AND COATED WITH 1 COAT OF 'PRO-STRUCT 688' : ZINC RICH PRIMER (OR EQUALLY APPROVED) @ 4m²/LT.
- " REMOVAL OF BADLY CORRODED REINFORCEMENT AND ITS REPLACEMENT- ALL TO ENGINEERS INSTRUCTIONS ON SITE.

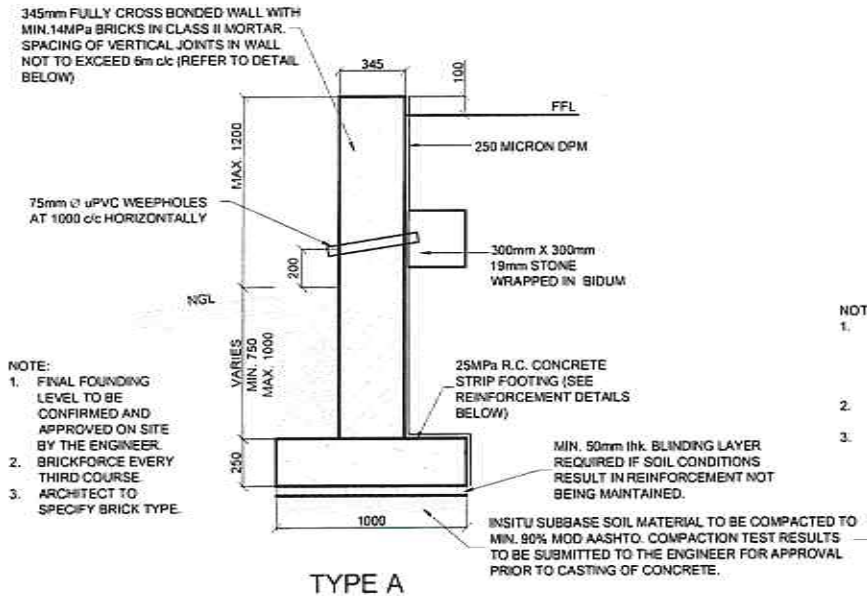
PRIMING :

- " PRE-DAMPEN PREPARED SURFACE WITH WATER AS DESCRIBED BELOW.

REPAIR MATERIAL:

- " SHUTTER UP SIDES AND/OR SOFFIT OF AREA TO BE REPAIRED.
- " THOROUGHLY WET THE SURFACE OF THE CONCRETE WITHIN THE REPAIR AREA WITH WATER.
- " DRAIN EXCESS WATER.
- " MIX 'PRO-STRUCT 531M' (OR EQUALLY APPROVED) AS PER DETAILED INSTRUCTIONS AND POUR REPAIR GROUT INTO THE SHUTTERED AREA FROM ONE SIDE, ENSURING THAT THE GROUT FILLS THE ENTIRE SHUTTERED AREA WITH NO AIR POCKETS.
- " COVERAGE WILL BE APPROXIMATELY 1,4m² @ 10mm THICK PER 25KG BAG OF REPAIR GROUT.
- " LEAVE SHUTTER IN POSITION FOR AT LEAST 24HRS AND THEN STRIP AND CLEAN DOWN THE NEWLY REPAIRED SURFACE.
- " REPAIRED AREAS MUST BE WET CURED FOR A MINIMUM OF 3 DAYS ONCE SHUTTERS HAVE BEEN STRIPPED.

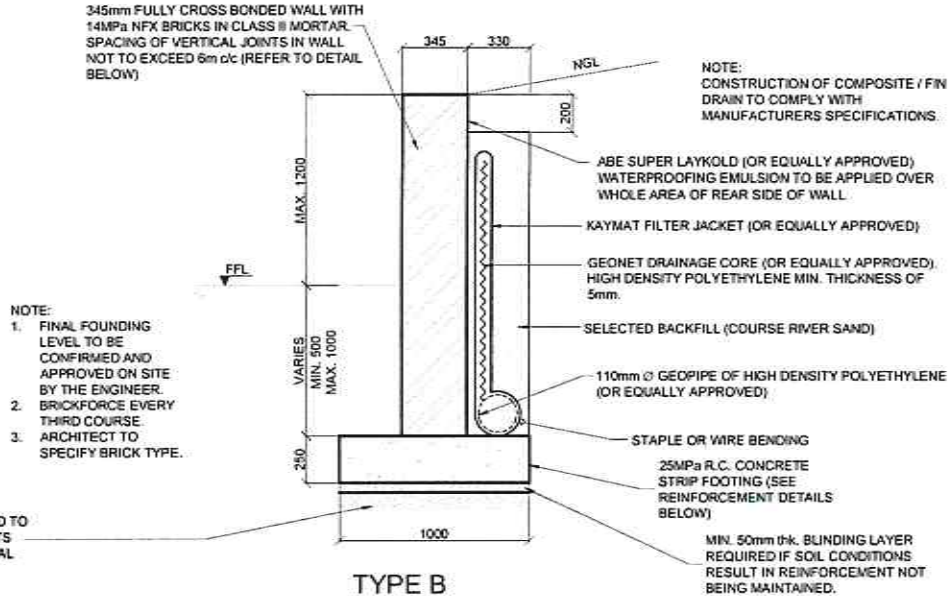
PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	CONCRETE SPALLING REPAIRS - FOR REPAIRS OVER 30mm THICK	2018.10.18	P2
		PROJECT No. 474	SKETCH No. SK 317



TYPE A

TYPICAL 345mm CROSS BONDED BRICK RETAINING WALL WITH WEEP HOLES

N.T.S

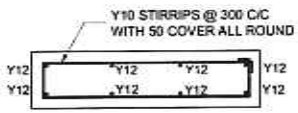


TYPE B

TYPICAL 345mm CROSS BONDED BRICK RETAINING WALL WITH COMPOSITE/FIN DRAIN DETAILS

N.T.S

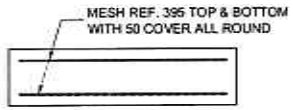
OPTION 1 OR OPTION 2 TO BE CONFIRMED BY ENGINEER ON SITE



OPTION 1

WALL FOUNDATION REINFORCEMENT DETAILS

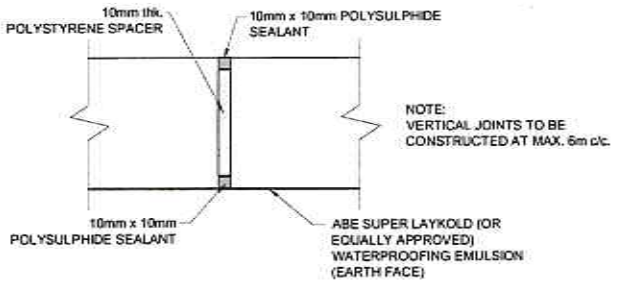
N.T.S



OPTION 2

WALL FOUNDATION REINFORCEMENT DETAILS

N.T.S



TYPICAL VERTICAL ISOLATION JOINT DETAIL

N.T.S

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PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL 345mm FULLY CROSS BONDED BRICK RETAINING WALL DETAILS	DATE 2018.10.18	REVISION P2
		PROJ No 474	SKETCH No Sk 318

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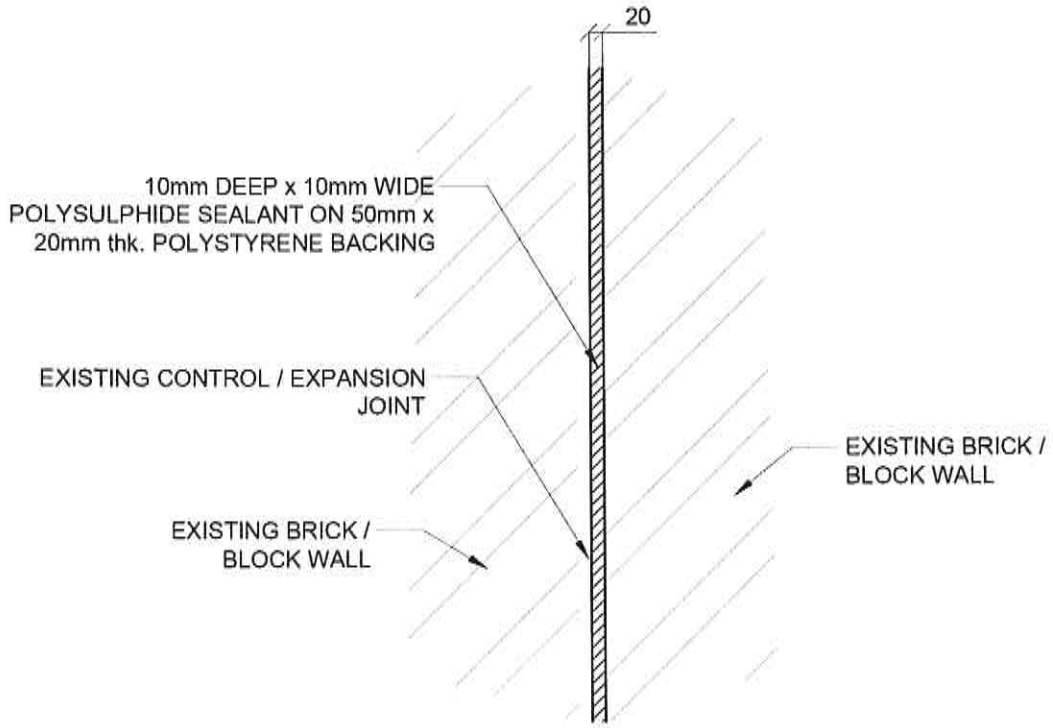
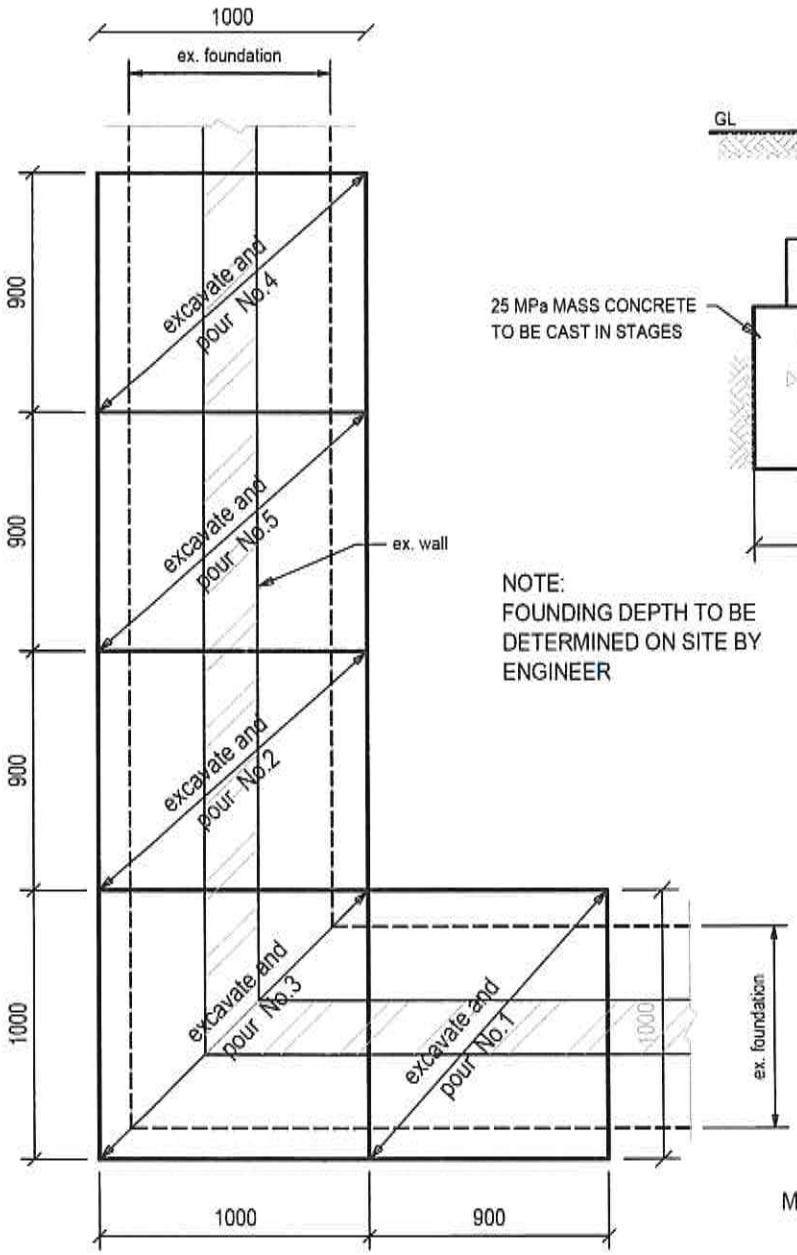
NOTES:

1. SCRAPE OUT AND REMOVE EXISTING MORTAR FILLER AT CONTROL / EXPANSION JOINT TO A MIN DEPTH OF 60mm.
2. INSERT 50mm x 20mm THICK POLYSTYRENE BACKING ALONG LENGTH OF JOINT.
3. APPLY 10mm DEEP x 20mm WIDE POLYSULPHIDE SEALANT TO COVER JOINT AND MAKE GOOD.

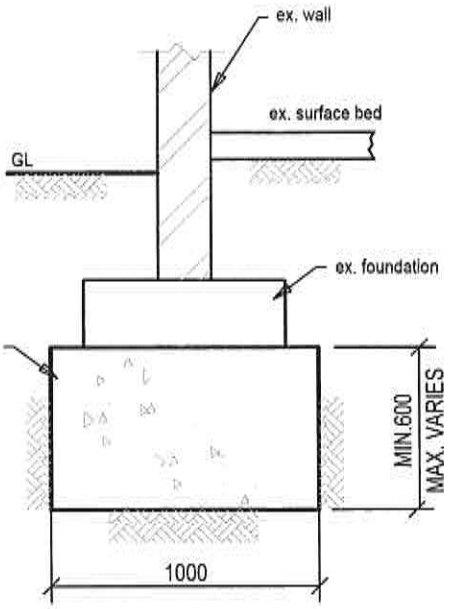


TYPICAL REPAIR DETAILS TO
EXISTING CONTROL / EXPANSION JOINTS
N.T.S

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL CONTROL JOINT DETAILS	2018.09.06	P1
		PROJ. No. 474	SKETCH No. Sk 319



PLAN



NOTE:
FOUNDING DEPTH TO BE DETERMINED ON SITE BY ENGINEER

TYPICAL FINISHED SECTION

MASS CONCRETE CLASS 25/19

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL UNDERPINNING DETAILS	2018.09.06	P1
		PROJ. No. 474	SKETCH No. Sk 320

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REPAIRS TO EXISTING CONCRETE SURFACE BED:

SURFACE PREPARATION :

- REMOVE ALL LOOSE, UNSOUND CONCRETE FROM THE AREAS TO BE REPAIRED.
- CUT OUT AROUND THE AREAS TO BE REPAIRED TO A MINIMUM DEPTH OF 10mm TO AVOID FEATHER EDGING.
- HIGH PRESSURE WATER BLAST THE PREPARED AREAS TO REMOVE ANY CONTAMINANTS.
- ENSURE THAT THE SUBSTRATE ONTO WHICH THE REPAIRED CONCRETE IS TO BE APPLIED IS SOUND AND FREE FROM LOOSE MATERIAL.
- IF REINFORCING IS EXPOSED & SHOWS SIGNS OF CORROSION, THE REINFORCING SHALL BE OPENED UP BY BREAKING OUT THE CONCRETE TO A DEPTH OF 20mm BELOW THE REINFORCING AND 50mm BEYOND THE CORRODED LENGTH OF THE REINFORCING.
- ANY EXPOSED STEEL MUST BE MECHANICALLY CLEANED AND COATED WITH 1 COAT OF 'PRO-STRUCT 688' : ZINC RICH PRIMER (OR EQUALLY APPROVED) @ 4m²/LT.
- REMOVAL OF BADLY CORRODED REINFORCEMENT AND ITS REPLACEMENT- ALL TO ENGINEERS INSTRUCTIONS ON SITE.

TOLERANCES :

- IF LOOSE MATERIAL EXCEEDS MORE THAN 20mm THICK, THE ENTIRE CONCRETE SLAB IS TO BE DEMOLISHED AND RE-CAST AS PER SKETCH 369/SK 304.

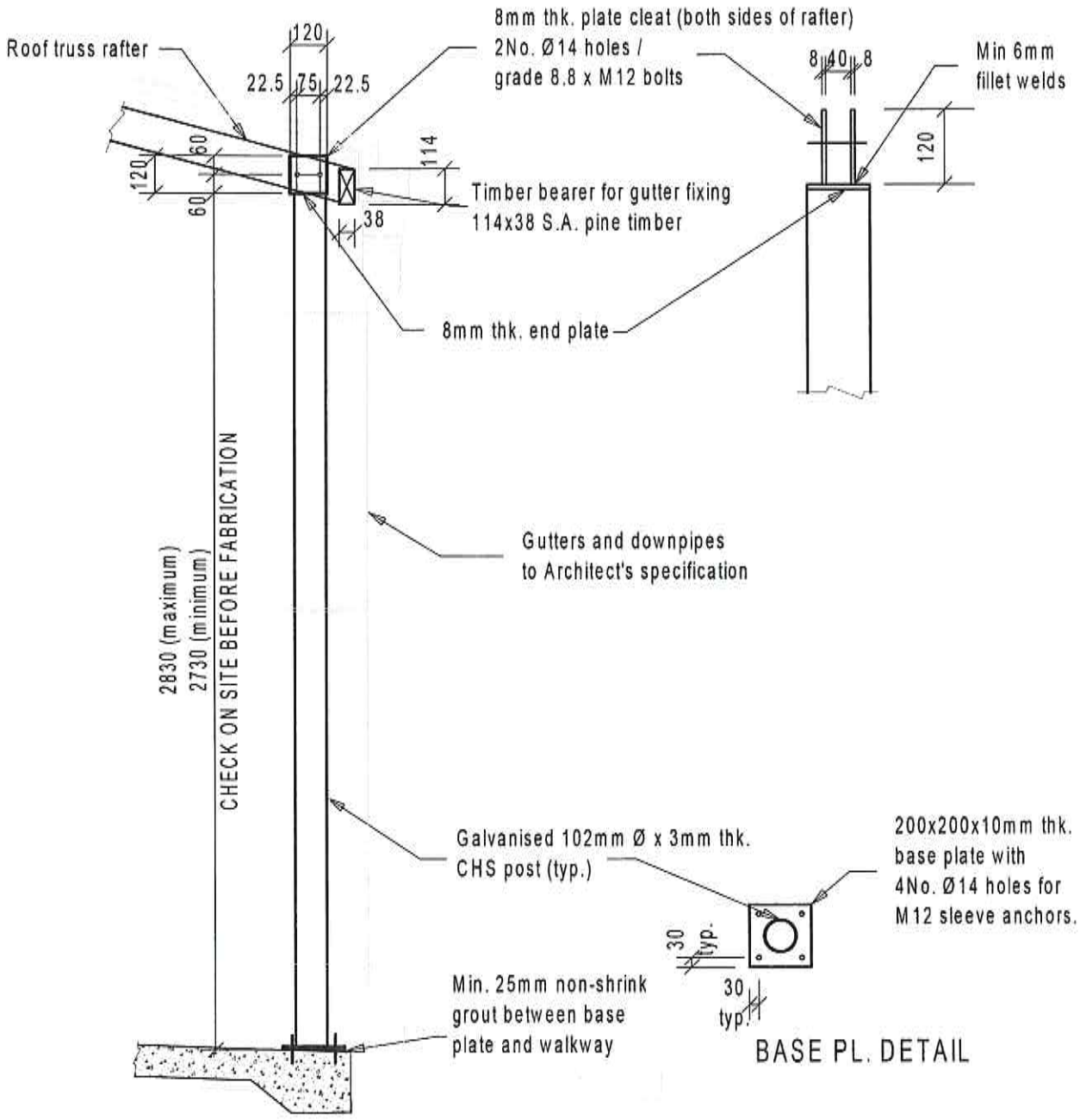
PRIMING :

- PRE-DAMPEN PREPARED SURFACE WITH WATER AS DESCRIBED BELOW.

REPAIR MATERIAL:

- THOROUGHLY WET THE SURFACE OF THE CONCRETE WITHIN THE REPAIR AREA WITH WATER.
- DRAIN EXCESS WATER.
- MIX 'PRO-STRUCT 617' WET TO DRY EPOXY GROUT (OR EQUALLY APPROVED AS PER DETAILED INSTRUCTIONS AND RE SCREED THE SURFACE BED.
- REPAIRED AREAS MUST BE WET CURED FOR A MINIMUM OF 3 DAYS ONCE SHUTTERS HAVE BEEN STRIPPED.

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	REPAIRS TO EXISTING CONCRETE SURFACE BED	2018.10.18	P2
		PROJECT No. 474	SKETCH No. SK 321



STEEL POST DETAIL

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	GUTTER SUPPORT: STEEL POST DETAIL	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 322

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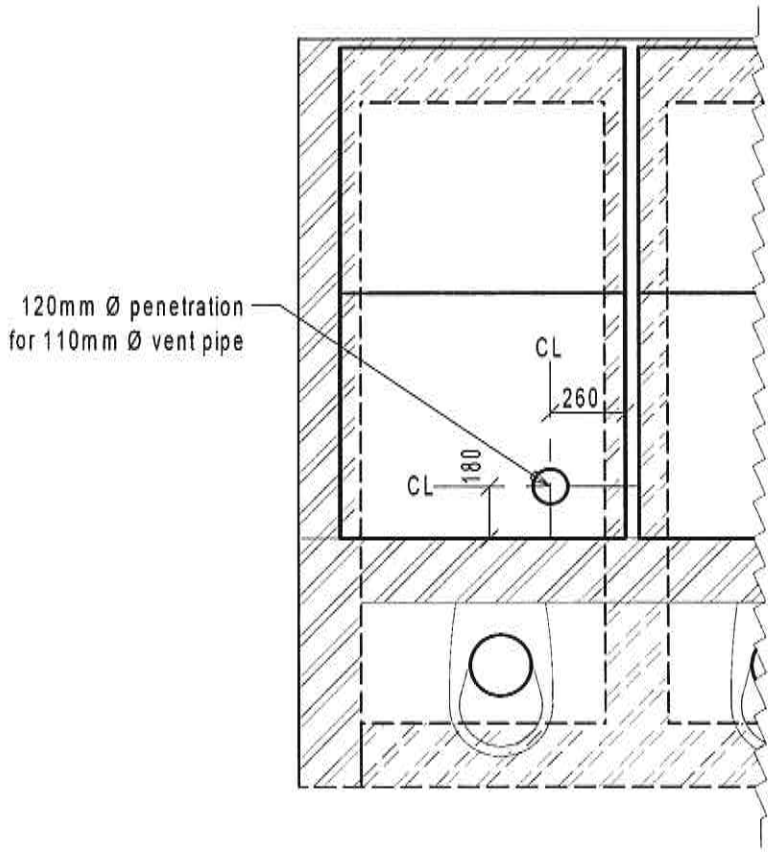
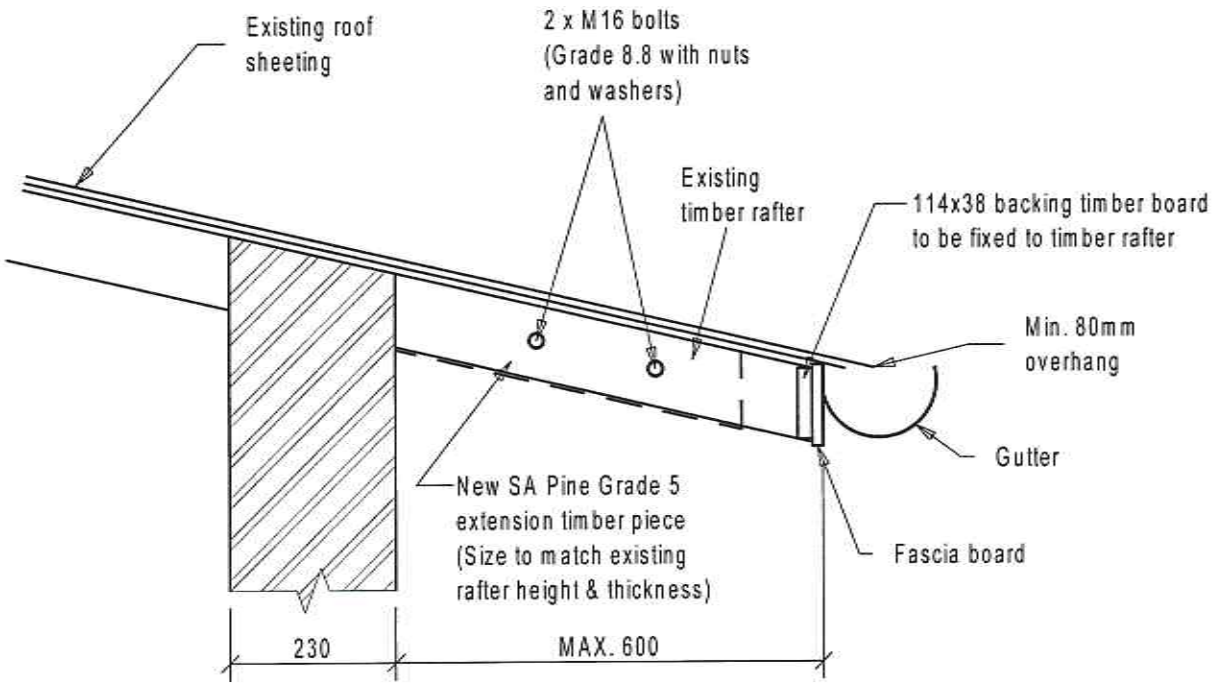


VENT PIPE SETTING OUT ON PRECAST PANEL FOR ABLUTION PITS

PROJECT	DETAILS	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL VENT PIPE SETTING OUT ON PRECAST PANEL FOR ABLUTION PITS	2018.09.06	P1
		PROJECT No. 474	SKETCH No. SK 323



SPECIFICATION ON EXTENSION FOR TIMBER RAFTER

SCALE 1:10

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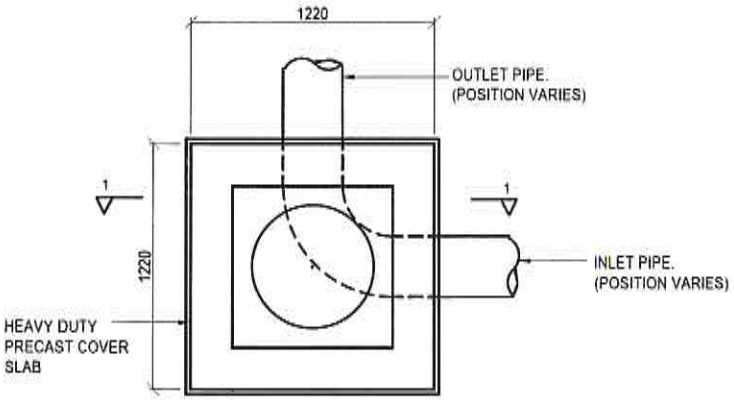
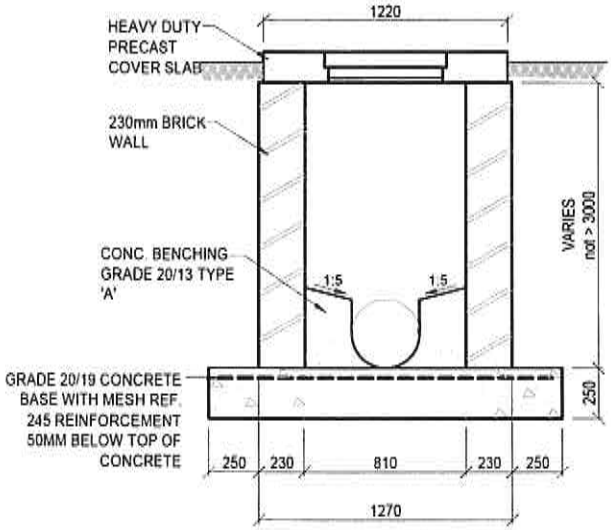
PROJECT DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DATE 2018.09.06
	REVISION P2
DETAILS SPECIFICATION ON EXTENSION FOR TIMBER RAFTER	DRG. No. 474 / Sk 324

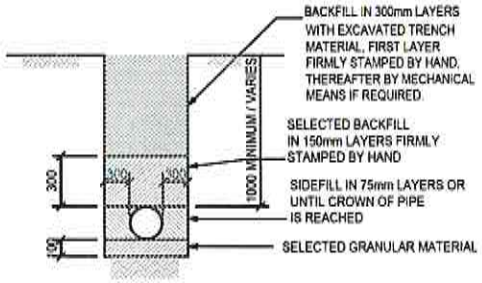
SECTION 3
CIVIL TYPICAL DETAILS AND SPECIFICATIONS



PLAN



SECTION 1 - 1



TYPICAL PIPE BEDDING DETAIL

N.T.S

TYPICAL MANHOLE DETAILS FOR DEPTHS NOT EXCEEDING 3000mm AND FOR PIPES SIZES NOT > 675mm Ø

N.T.S

NOTES

GENERAL

1. SETTING OUT TO ENGINEERS DETAILS.
2. PROVE ALL SERVICES PRIOR TO CONSTRUCTION.
3. ALL WORK AREAS TO BE REINSTATED (PREMIX, CONCRETE, ETC.)
4. SUPPLY AND INSTALLATION TO COMPLY WITH SANS 1200.
5. ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL AND MECHANICAL ENGINEERS DRAWINGS.

STORMWATER

1. THE INSITU GROUND MUST BE COMPACTED TO 95% MOD. A.A.S.H.T.O. PRIOR TO THE INLET BASE SLAB BEING CAST. IF THIS DENSITY CANNOT BE ATTAINED THE INSITU MATERIAL MUST BE REMOVED TO A DEPTH OF 300mm AND REPLACED WITH A SELECTED BACKFILL.
2. BRICKS TO BE ENGINEERING UNITS (NXFE-14) AS PER SABS 227.
3. TYPE AND CLASS OF PIPE AS SPECIFIED ON SITE.
4. MANHOLE COVER AND FRAME TO BE SPECIFIED ON SITE.

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL STORMWATER MANHOLE AND PIPE BEDDING DETAILS	2018.09.06	P1
		PROJ. No. 474	SKETCH No. Sk 900

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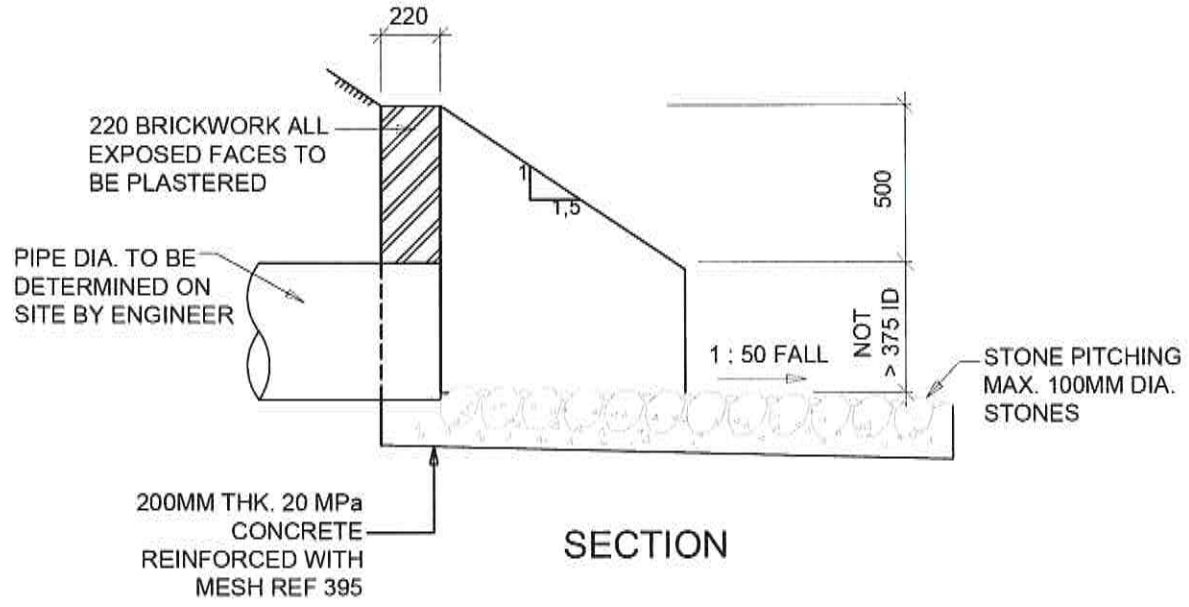
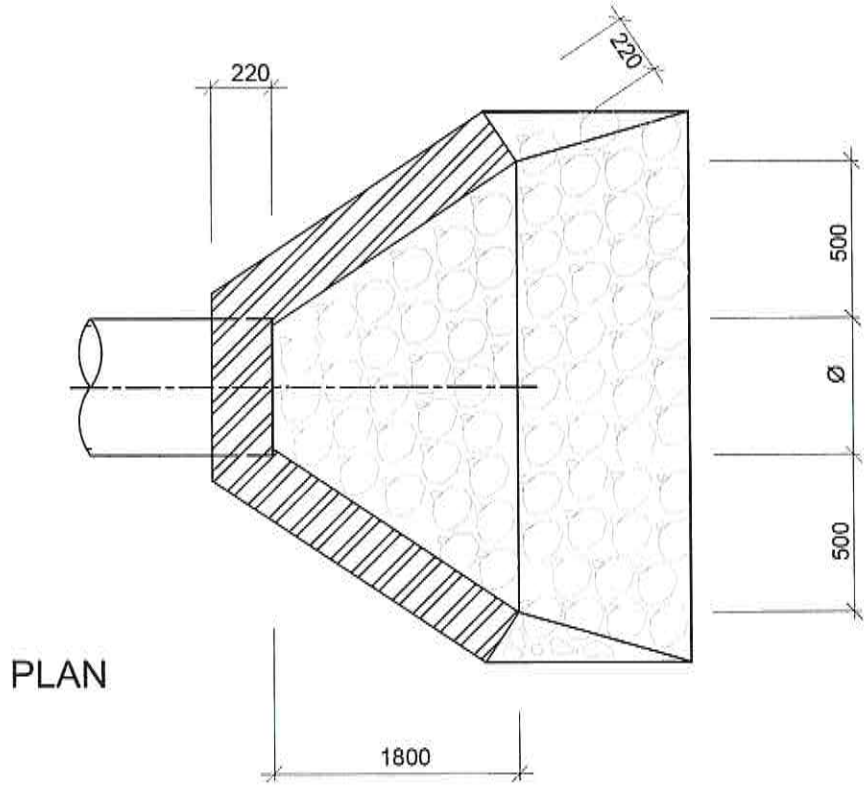


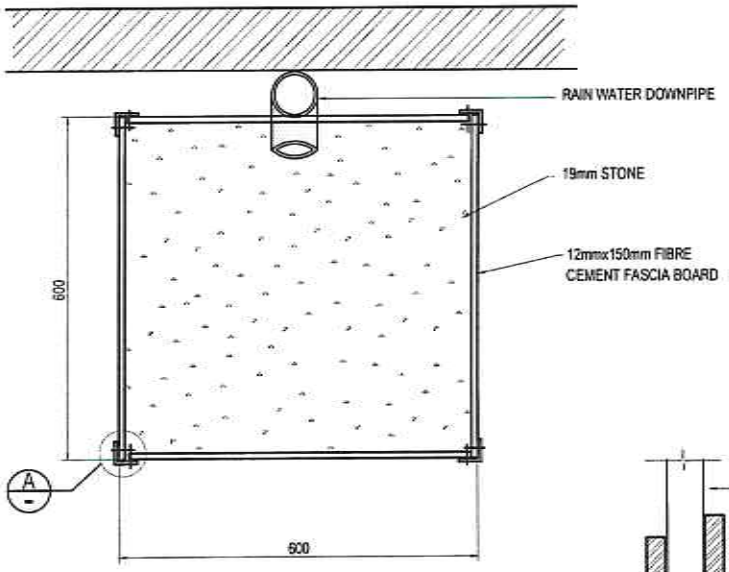
SECTION



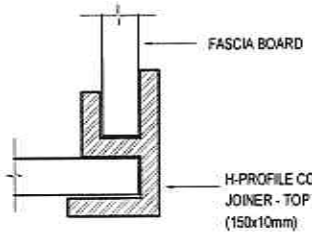
PLAN

STORMWATER HEADWALL DETAILS

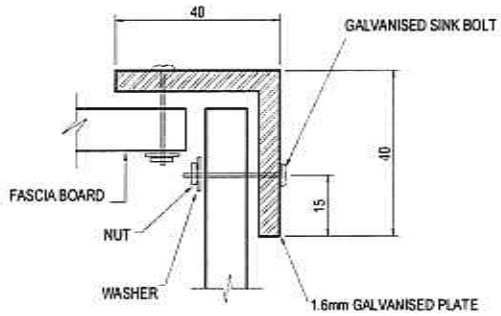
PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL STORMWATER HEADWALL DETAILS ; BRICK AND STONE PITCHED	2018.10.18	P2
		PROJ. No. 474	SKETCH No. Sk 901



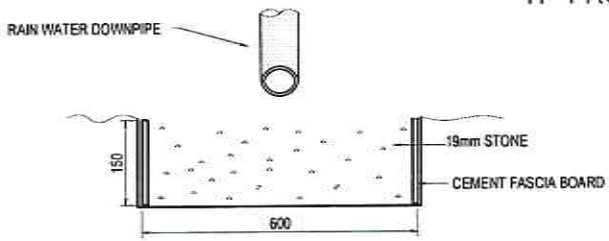
PLAN



H - PROFILE CORNER JOINT



DETAIL A
(NB. ALTERNATIVE METHOD)



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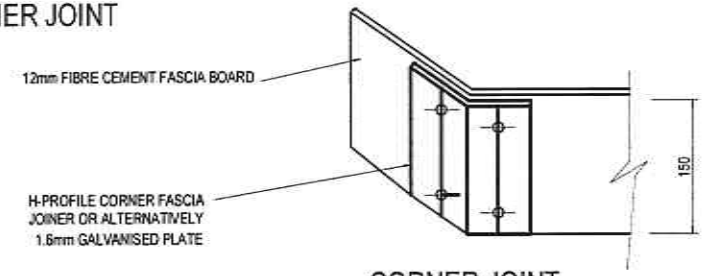

CORNER JOINT

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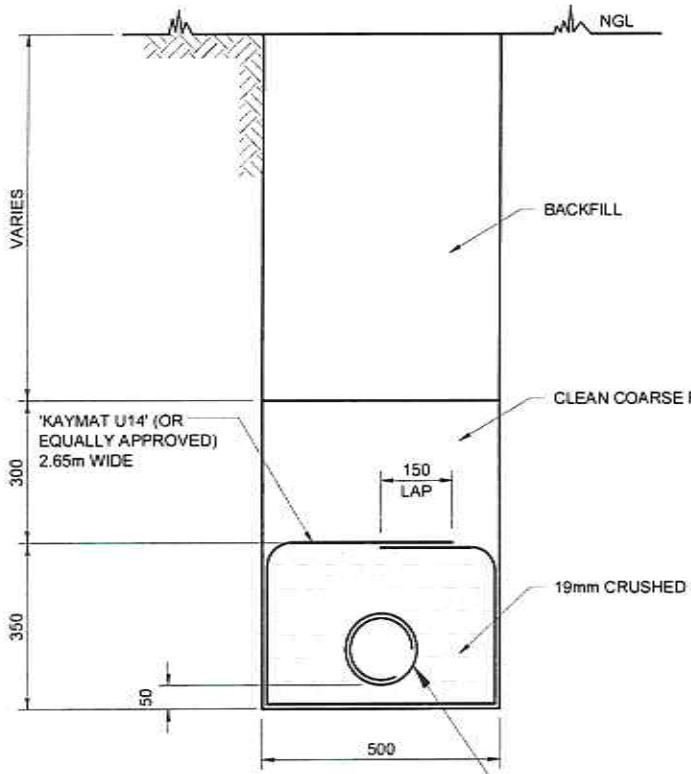
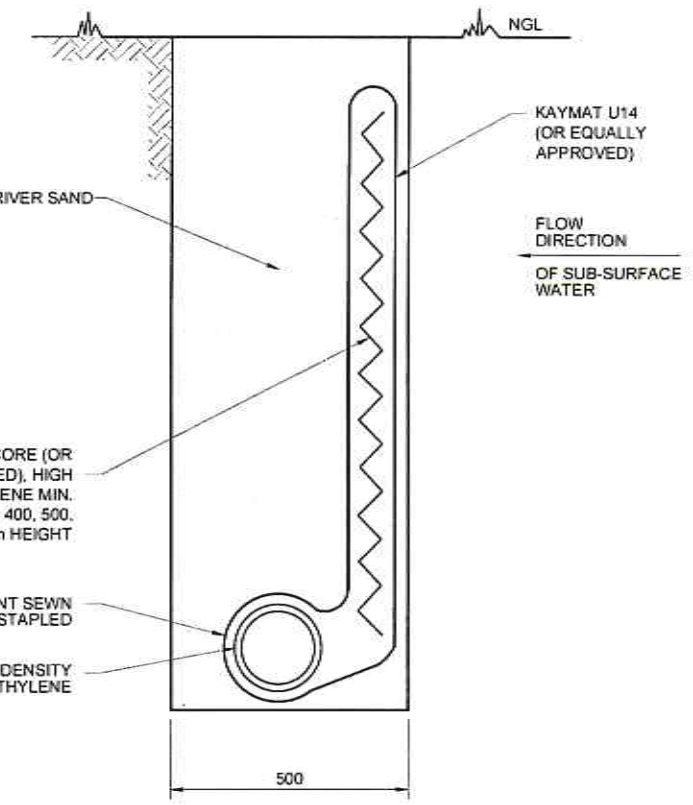
PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL DETAILS: SCOUR PROTECTION AT RWDP OUTLET	DATE: 2018.09.06	REVISION: P1
		PROJ No: 474	SKETCH No: Sk 902



AGGREGATE DRAIN



COMPOSITE DRAIN

NOTES :

1. HOLES OR SLOTS TO BE LOCATED TOWARDS 4 & 8 O'CLOCK
2. ENGINEER TO ADVISE ON LEVELS AND POSITION ON SITE

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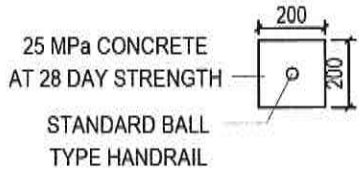
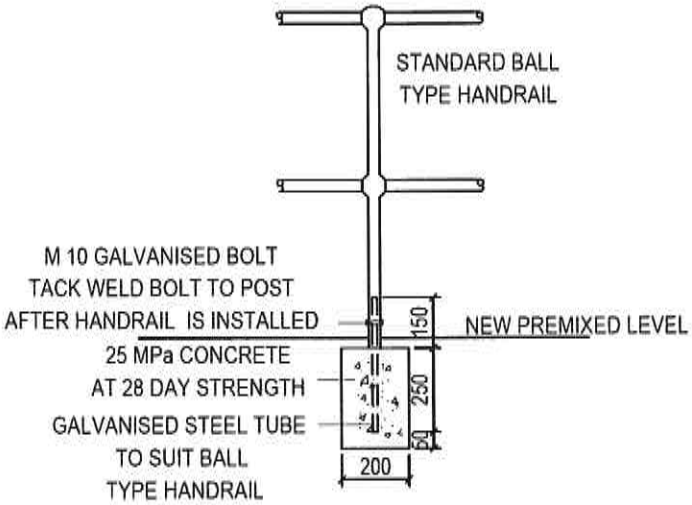
PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL SUB-SURFACE DRAINAGE DETAILS	DATE: 2018.10.18	REVISION: P2
		PROJ. No: 474	SKETCH No: Sk 903

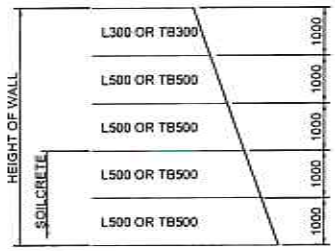


PLAN ON CONCRETE BASE
N.T.S



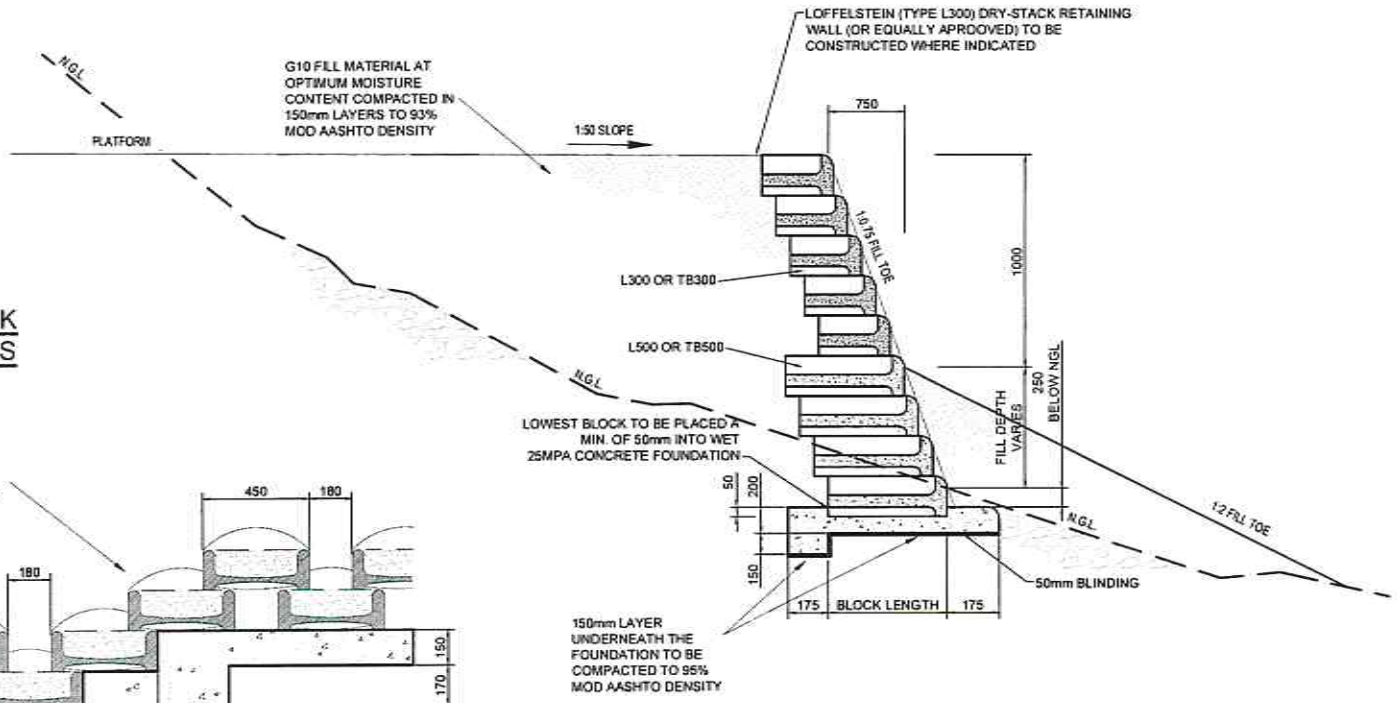
FIXING DETAIL FOR HANDRAIL
N.T.S

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL HAND RAIL DETAILS	2018.09.06	P1
		PROJ. No. 474	SKETCH No. Sk 904

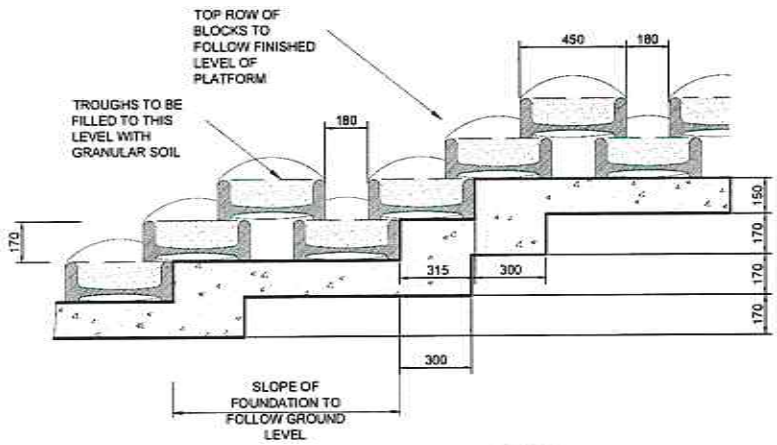


TYPICAL DETAIL SHOWING BLOCK TYPE AND SOILCRETE POSITIONS

N.T.S.



TYPICAL SECTION THROUGH WALL



TYPICAL SIDE VIEW

NOTE:
WHERE FILL DEPTH EXCEEDS 2.0m THEN USE SOILCRETE WITH 3% CEMENT, AT OPTIMUM MOISTURE CONTENT, COMPACTED BY HAND AS FILL MATERIAL BETWEEN AND BEHIND BLOCKS BELOW THIS POINT. (500mm BEHIND BLOCK AND 300mm INTO BLOCK)

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PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL DRY-STACK RETAINING WALL DETAILS	DATE: 2018.10.18	REVISION: P2
		PROJ. No.: 474	SKETCH No.: Sk 905

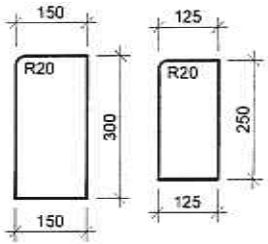


FIG. 1

FIG. 2

RECTANGULAR KERBS

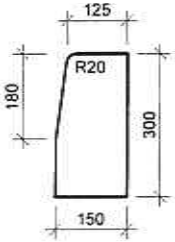


FIG. 3

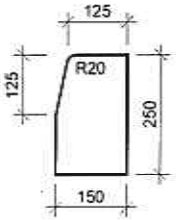


FIG. 4

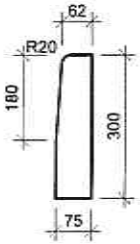


FIG. 5

HALF-BATTERED KERBS

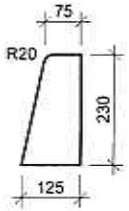


FIG. 6

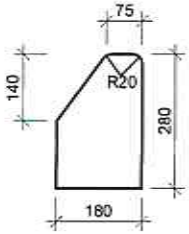


FIG. 7

BATTERED KERBS

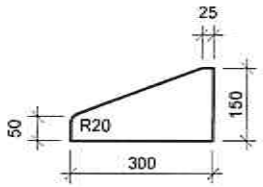


FIG. 8

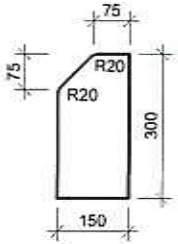


FIG. 9

MOUNTABLE KERBS

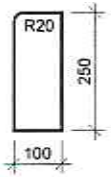


FIG. 10

RECTANGULAR

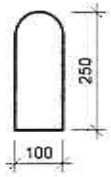


FIG. 11

HALF-ROUND EDGINGS

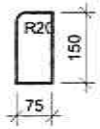


FIG. 12

RECTANGULAR

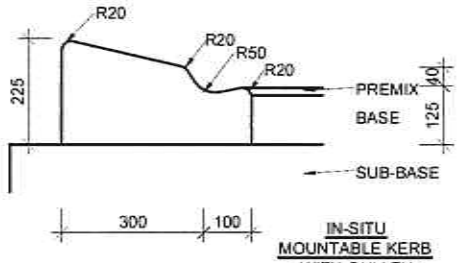
FIG. 13

RECTANGULAR

FIG. 14

TAPERED

CHANNELS



IN-SITU MOUNTABLE KERB WITH GULLEY

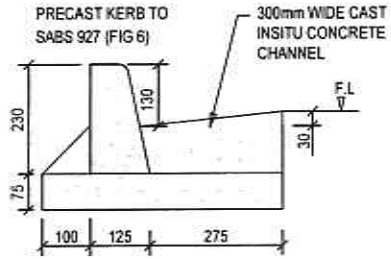


FIG 6 KERB DETAIL - WITH CHANNEL

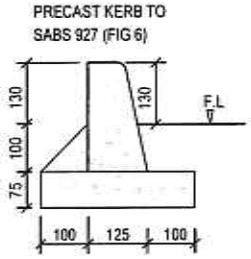


FIG 6 KERB DETAIL -NO CHANNEL

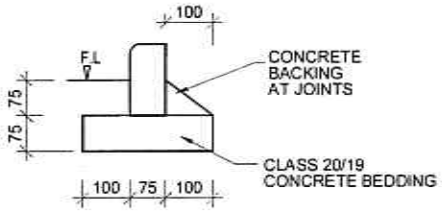


FIG 12 KERB DETAILS

NOTE

EXPANSION JOINTS OF 12mm WIDTH AT 20m INTERVALS AS PER CLAUSE 5.7 OF SABS 1200 M/C

MASS CONCRETE BACKING AT ALL JOINTS

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MAP AFRICA
CONSULTING ENGINEERS

PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TITLE: TYPICAL KERBING DETAILS	DATE: 2018.09.06	REVISION: P1
		PROJ. No: 474	SKETCH No: Sk 906

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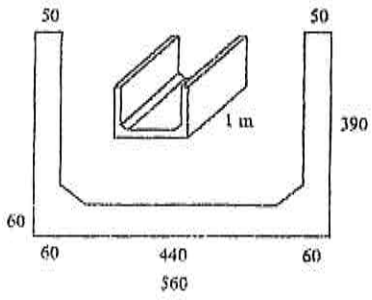
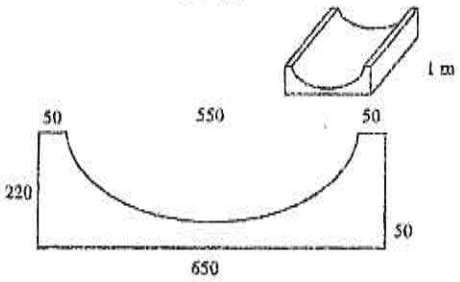
SURFACE WATER CHANNELS

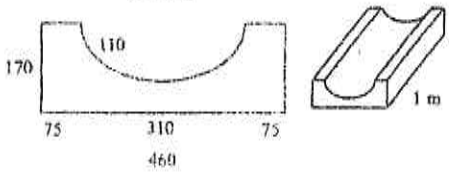
SWC 1



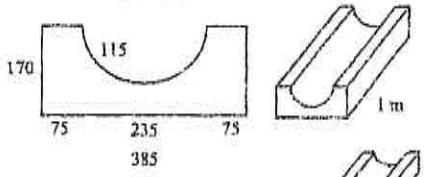
SWC 2



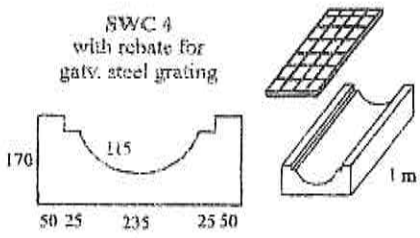
SWC 3



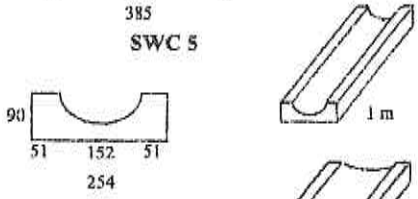
SWC 4



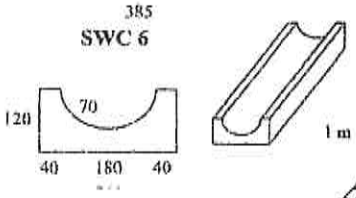
SWC 4
with rebate for
galv. steel grating



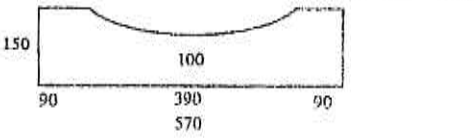
SWC 5



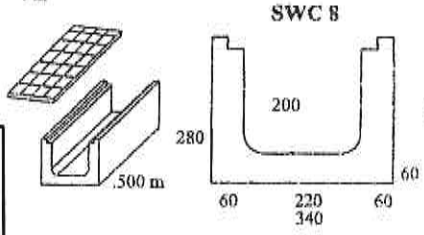
SWC 6



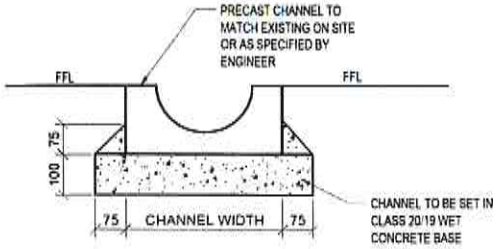
SWC 7



SWC 8



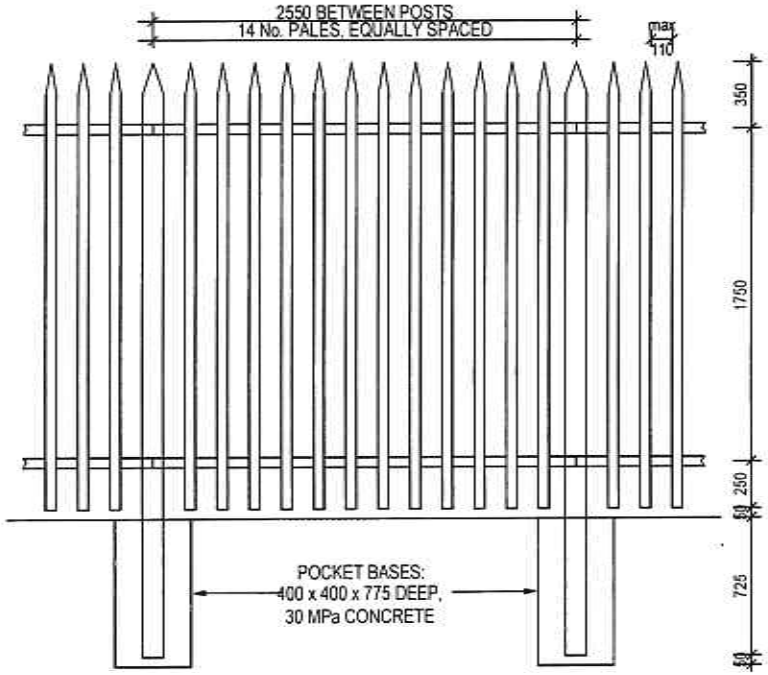
with rebate for
galv. steel grating



TYPICAL INSTALLATION DETAILS FOR PRECAST CONCRETE SURFACE WATER CHANNELS

N.T.S

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL STORMWATER SURFACE CHANNEL TYPES AND INSTALLATION DETAILS	2018.09.06	P1
		PROJ. No. 474	SKETCH No. Sk 907



STEEL PALISADE FENCE – SPECIFICATION NO. 278/SPF SPECIFICATION FOR THE FABRICATION AND INSTALLATION OF STEEL PALISADE FENCING

1 DIMENSIONS AND GENERAL CHARACTERISTICS

1.1 MAIN POSTS
SHAPED IPE 100 SECTIONS. 100 X 55 X 8.1 kg/m. GRADE 300 W, HOT-ROLLED SECTIONS. SLOTTED TO RECEIVE FISH PLATES TOP AND BOTTOM.

1.2 RAILS
TOP AND BOTTOM RAIL : 60 X 60 X 5 ANGLES. GRADE 300W, HOT-ROLLED SECTIONS.

1.3 PALES
40 X 40 X 5 ANGLES. GRADE 300W, HOT ROLLED SECTIONS.

1.4 FISH PLATES
140 X 50 X 8 mm FLAT BAR

1.5 FIXINGS
PALES TO RAIL : WELDING TO SABS STANDARDS RAILS TO FISH PLATE: M12 'ANT-VANDAL' SHEAR FIXINGS, TOP AND BOTTOM GRADE 8.8

2. CONSTRUCTION

2.1 POSTS SHALL BE PROVIDED AT 2.55m CENTRE TO CENTRE, SHAPED TO A POINT AT THE TOP. POST TO BE EMBEDDED IN 30 MPa CONCRETE POCKET BASE (MIN. 400 X 400 X 800 DEEP) TO A MINIMUM DEPTH OF 725mm.

2.2 POSTS TO RAILS CONNECTIONS
RAILS SHALL BE SECURED TO POSTS WITH CONNECTOR PLATES OR 'FISH PLATES', BOLTED TO THE VERTICAL LEG OF THE RAIL.

2.3 PROTECTIVE TREATMENT
AFTER THE FABRICATION OF FENCING COMPONENTS, INCLUDING THE PUNCHING OR DRILLING OF ANY HOLES, THE FENCING SHALL BE HOT-DIPPED GALVANIZED TO SANS 763 STANDARDS.

2.4 GENERAL
ALL FOUNDING CONDITIONS TO BE INSPECTED BY THE ENGINEER PRIOR TO CONCRETE BEING CAST. MAP AFRICA CONSULTING ENGINEERS TO APPROVE ALL SHOP DRAWINGS PRIOR TO FABRICATION OF THE STEEL PALISADE FENCE.

NOTES:

1. POSTS : IPE 100 x 55 (8.1 kg/m), RAILS: 60 x 60 x 5 ANGLES AND PALES: 40 x 40 x 5mm
2. PALES TO BE WELDED TO RAILS AND ALL WELDS TO BE 5mm CFW
3. ALL STEELWORK TO BE HOT-DIPPED GALVANISED TO SANS 763 STANDARDS
4. LOCATION OF FENCE TO BE CONFIRMED ON SITE PRIOR TO FABRICATION
5. ENGINEER TO INSPECT FOUNDING CONDITIONS PRIOR TO CONCRETE BEING CAST

TYPICAL SECTION ON STEEL PALISADE FENCE

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MAP AFRICA CONSULTING ENGINEERS

PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL GALVANISED STEEL PALISADE FENCING DETAILS	DATE 2018.09.05	REVISION P1
		PROJ No. 474	SKETCH No. Sk 908

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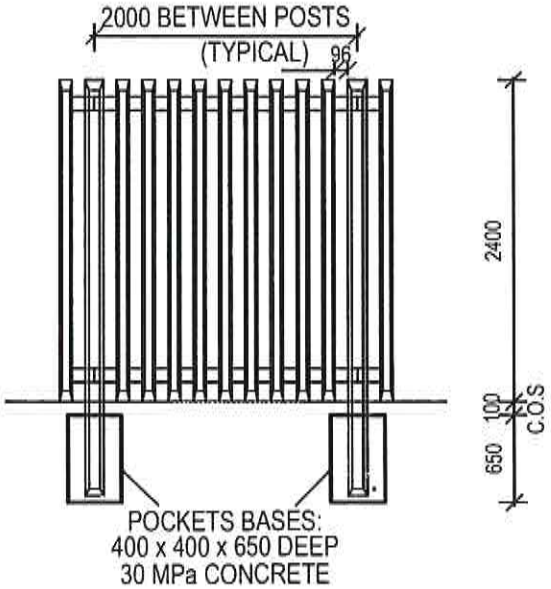
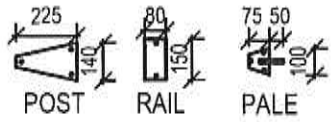
MAP AFRICA
CONSULTING ENGINEERS

1. LOCATION OF FENCE TO BE CONFIRMED ON SITE PRIOR TO FABRICATION AND/ OR CONSTRUCTION.
3. ENGINEER TO INSPECT FOUNDING CONDITIONS PRIOR TO CONCRETE.



TYPICAL ELEVATION ON CONCRETE PALISADE FENCE
SCALE 1 : 50

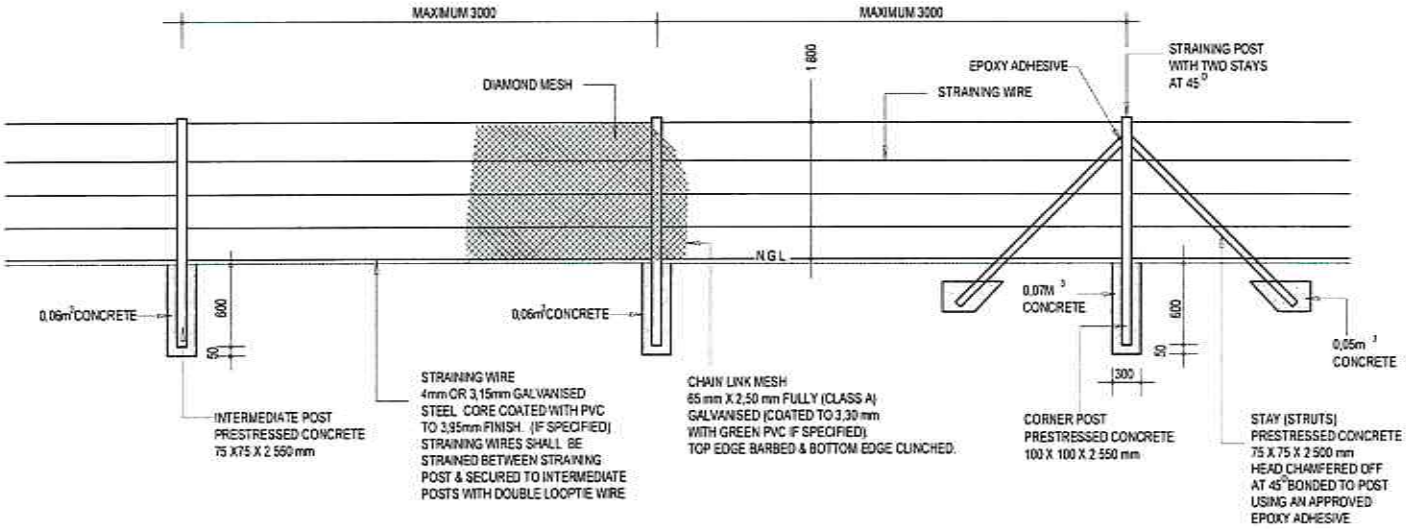


SECTIONAL DETAILS
SCALE 1 : 50

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL PRECAST CONCRETE PALISADE FENCING DETAILS	2018.09.06	P1
		PROJ. No. 474	SKETCH No. Sk 909

NOTES :

1. ALL POSTS, DROPPERS AND STANDARDS TO BE ON THE INSIDE OF FENCE.
2. STRAINING POSTS TO BE USED AT EVERY CHANGE OF VERTICAL AND HORIZONTAL DIRECTION WITH A MAXIMUM SPACING OF 30 METRES.
3. INTERMEDIATE POSTS TO BE USED AT A MAXIMUM SPACING OF 3 METRES.
4. CONCERTINA GATES TO BE USED WHERE SPECIFIED.
5. SPECIFICATION FOR CORROSION PROTECTION FOR GATE TO BE SPECIFIED WHEN ORDERING.
6. SPECIFICATION FOR GATE HINGES TO BE SPECIFIED WHEN ORDERING. (EG. HOLE TYPE OR BRACKET TYPE).



CONCRETE FENCE SUPPORTS WITH CHAIN LINK MESH

NTS

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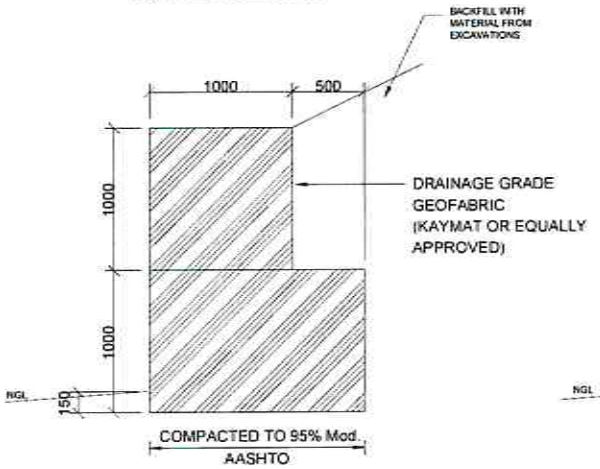
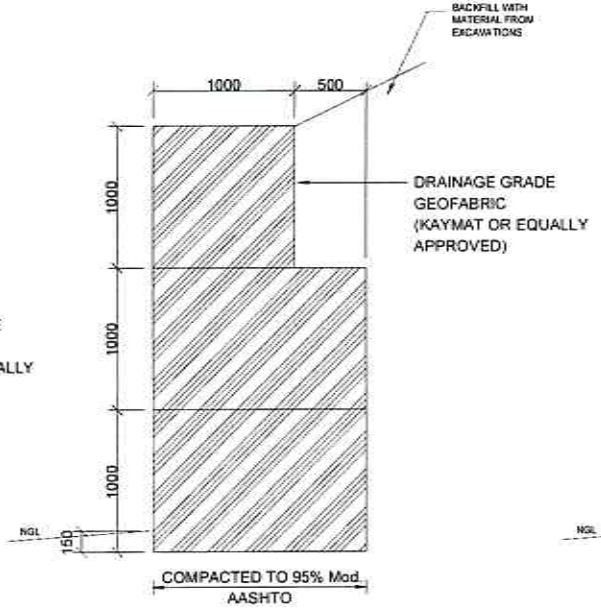
MAP AFRICA CONSULTING ENGINEERS

PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL WIRE MESH FENCING DETAILS	DATE 2018.09.06	REVISION P1
		PROJ. No 474	SKETCH No. Sk 910

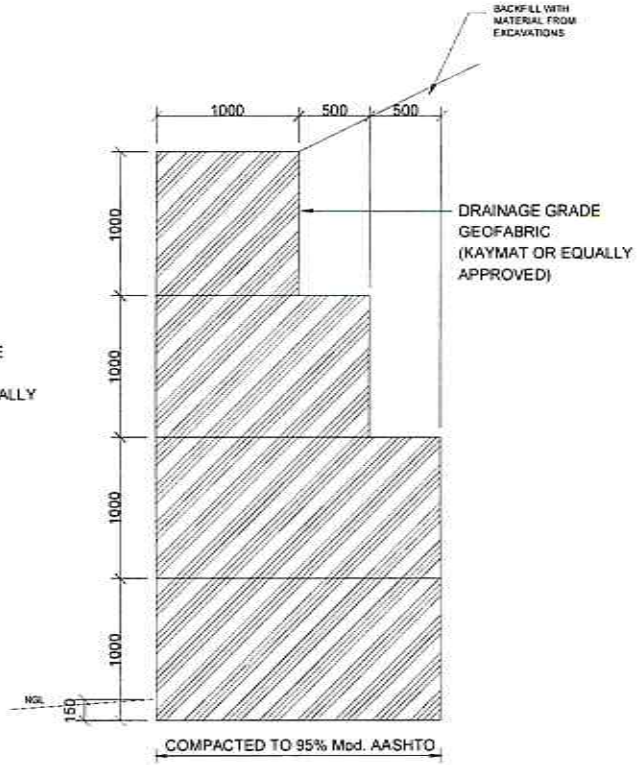
NOTES:
1. FOUNDATIONS TO BE STEPPED AND PREPARED AS INSTRUCTED BY THE ENGINEER
2. GEOTEXTILE FABRIC TO BE GRADE C (OR EQUALLY APPROVED) AS INSTRUCTED BY THE ENGINEER
3. ALL WIRE USED IN THE MAKING OF GABIONS SHALL BE GALVANISED IN ACCORDANCE WITH THE PROVISIONS S.A.B.S. 1582:1993 FOR CLASS A HEAVY GALVANISED MILD-STEEL WIRE.
4. THE STANDARD SIZES OF GABIONS ARE AS FOLLOWS:
   LENGTH : 1.0m , 2.0m , 3.0m & 4.0m
   WIDTH : 1.0m 1.5m DEPTH : 0.5m & 1.0m
   DIAPHRAGM SPACING : 1.0m
5. LACING AND BRACING TO BE DONE IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS



TYPICAL 2,0m HIGH WALL



TYPICAL 3,0m HIGH WALL



TYPICAL 4,0m HIGH WALL

TYPICAL DETAILS OF GABION RETAINING WALLS OF VARIOUS HEIGHTS

N.T.S

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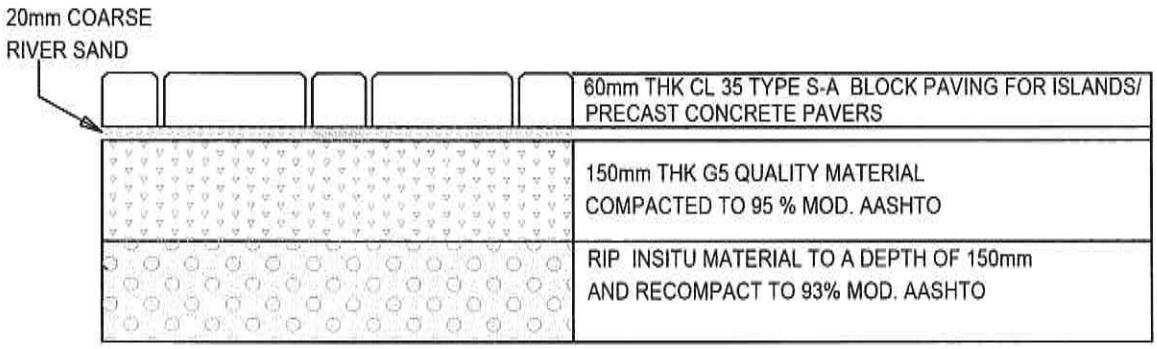
MAP AFRICA CONSULTING ENGINEERS

PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL GABION RETAINING WALL DETAILS	DATE 2018.10.18	REVISION P2
		PROJ No 474	SKETCH No Sk 911



TYPICAL BRICK PAVING/ PRECAST CONCTETE PAVING
LAYERWORK DETAILS
N.T.S

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL BLOCK PAVING/ PRECAST CONCRETE PAVING LAYERWORK DETAILS	2018.09.06	P1
		PROJ. No. 474	SKETCH No. Sk 912

PROPERTY	G1	G2	G3	G4	G5	G6	G7
MAX DIAMETER (mm)	37.5	37.5	37.5	53.0	63.0	63.0	100.0
GRADING MODULUS	GRADING ENVELOPE	GRADING ENVELOPE	GRADING ENVELOPE	GRADING ENVELOPE	>= 1.50	>= 1.20	>= 0.75
LIQUID LIMIT (MAX) (%)	25	25	25	25	30	-	-
PLASTICITY INDEX (MAX) (%)	4	6	6	6	10	12	12
10% FACT (MIN) (kN)	110	110	N.A.	N.A.	N.A.	N.A.	N.A.
LINEAR SHRINKAGE (%) (MAX)	2	3	3	3	5	6	6
ACV (MAX) (%)	29	29	N.A.	N.A.	N.A.	N.A.	N.A.
FLAKINESS INDEX (%)	<= 35.0	<= 35.0	N.A.	N.A.	N.A.	N.A.	N.A.
MIN. CBR %	N.A.	80 @ 98% MOD AASHTO	80 @ 98% MOD AASHTO	80 @ 98% MOD AASHTO	45 @ 95% MOD AASHTO	25 @ 93% MOD AASHTO	15 @ 93% MOD AASHTO
SWELL (MAX) % AT 100% MOD	N.A.	0.2	0.2	0.2	0.5	1.0	1.5
SOLUBLE SALTS (%)	< 0.2%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
MgS_4O + Na S_2O_4 (%)	< 0.05%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

MATERIAL PROPERTIES FOR :
CRUSHED STONE (G1,G2,G3)
NATURAL GRAVEL (G4,G5,G6)
GRAVEL SOIL (G7)

PROPERTY	G8	G9	G10	SELECTED FILL
GRADING MODULUS	NO REQUIREMENTS	NO REQUIREMENTS	NO REQUIREMENTS	0.75
MIN CBR% AT IN-SITU DENSITY	10	7	3	10
SWELL (MAX) % AT 100% MOD AASHTO	1.5	1.5	1.5	1.5
LIQUID LIMIT (MAX) (%)	N.A.	N.A.	N.A.	40
PLASTICITY INDEX (MAX) (%)	N.A.	N.A.	N.A.	18

MATERIAL PROPERTIES FOR
GRAVEL - SOIL AND SELECTED FILL

NOTES:

1. TYPE AND PERCENTAGE OF STABILIZATION TO BE DETERMINED BY LABORATORY
2. MATERIAL PROPERTIES DERIVED FROM TRH 14 & SABS. 1200

PROPERTY	C1	C2	C3	C4
MAX DIAMETER (mm)	37.5	37.5	63.0	63.0
GRADING MODULUS BEFORE TREATMENT	>= 1.50	>= 1.50	>= 1.50	>=1.50
LIQUID LIMIT (MAX) BEFORE (%)	25	25	30	45
PLASTICITY INDEX (MAX) BEFORE (%)	6	6	10	10
PLASTICITY INDEX (MAX) AFTER (%)	N.A.	N.A.	6	6
10% FACT (MIN) kN	110	110	N.A.	N.A.
ACV (MAX) (%)	29.0	29.0	N.A.	N.A.
FLAKINESS INDEX (%)	<= 35.0	<= 35.0	N.A.	N.A.
SAND ADDED EQUIVALENT (%)	>= 30.0	>= 30.0	N.A.	N.A.
UCS 100% MOD AASHTO (MPa)	> 6.0 < 12.0	> 3.0 < 6.0	> 1.5 < 3.0	> 0.75 < 1.5

MATERIAL PROPERTIES FOR
CEMENTED CRUSHED STONE OR NATURAL GRAVEL

SIEVE SIZE	% PASSING		
	G1,C1,C2	G2,G3,C1,C2	G4
53.0mm	100	100	100
37.5mm	100	100	85-100
26.5mm	84-94	100	-
19.0mm	71-84	85-95	60-90
13.2mm	59-75	71-84	-
4.75mm	36-53	42-60	30-65
2.00mm	23-40	27-45	20-50
0.425mm	11-24	13-27	10-30
0.075mm	4-12	5-12	5-15

GRADING ENVELOPE

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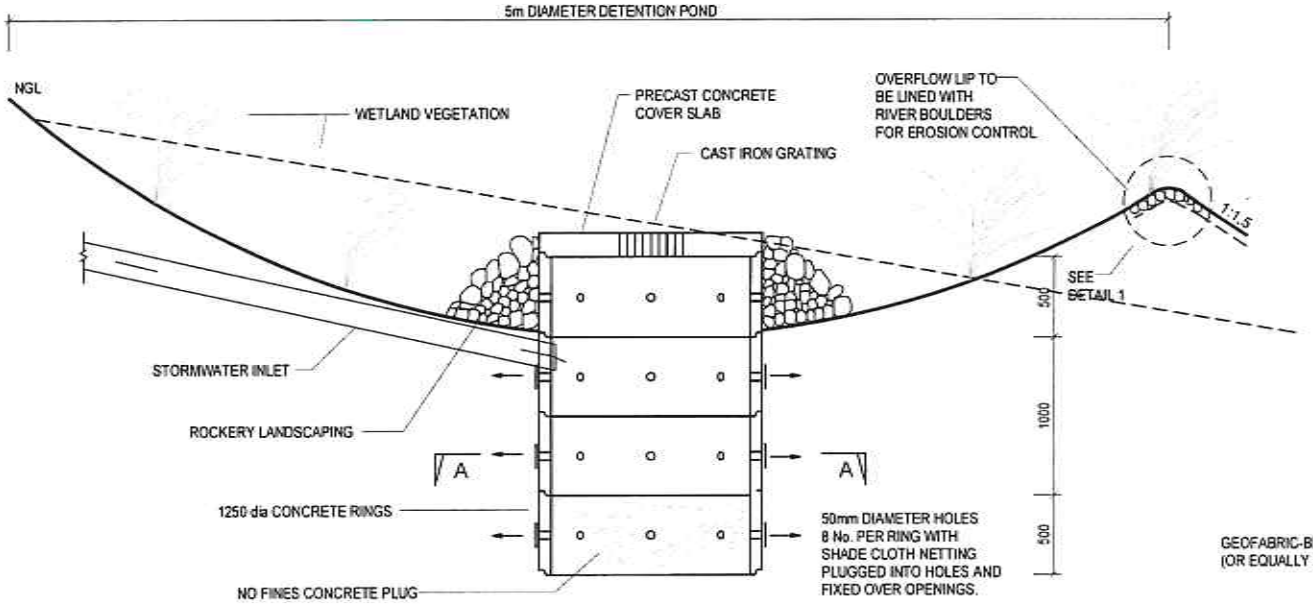
PROJECT:
DEPARTMENT OF EDUCATION
STORM DAMAGED DISASTER
PROGRAMME PHASE 16

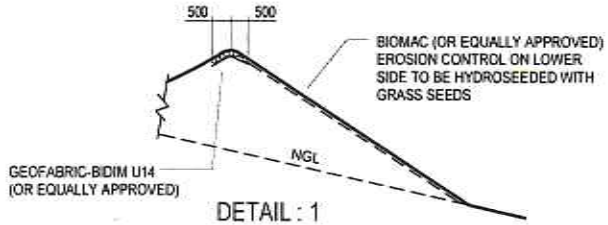
DETAILS:
MATERIAL PROPERTIES
FOR LAYERWORKS

DATE: 2018.09.06
REVISION: P1
PROJ No: 474
SKETCH No: Sk 913

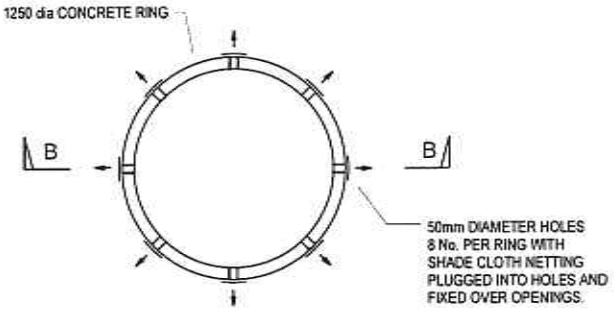


SECTION B-B
N.T.S

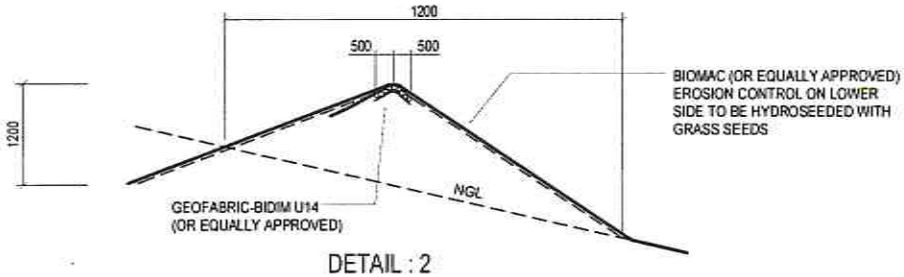
NOTE:
PIPE DIAMETER AND POSITION OF POND TO BE DETERMINED ON SITE BY ENGINEER



DETAIL : 1
N.T.S



SECTION A-A
N.T.S



DETAIL : 2
EARTH BERM AT THE SOUTH EASTERN BOUNDARY
N.T.S

TYPICAL DETAILS FOR SOAK AWAY

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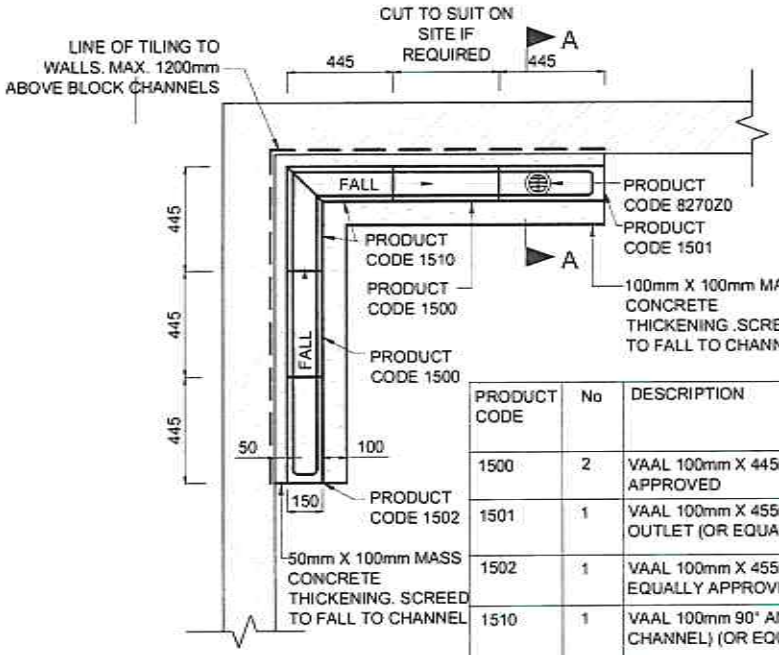
MAP AFRICA
CONSULTING ENGINEERS

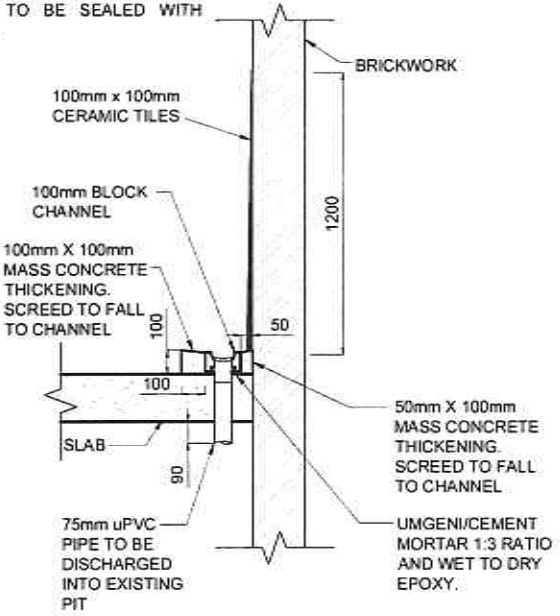
PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: TYPICAL STORMWATER SOAK AWAY DETAILS	DATE 2018.10.18	REVISION P2
		PROJ No. 474	SKETCH No. Sk 914



PRODUCT CODE	No	DESCRIPTION
1500	2	VAAL 100mm X 445mm PLAIN (OR EQUALLY APPROVED
1501	1	VAAL 100mm X 455mm WITH 75mm CENTRE OUTLET (OR EQUALLY APPROVED)
1502	1	VAAL 100mm X 455mm STOPEND (OR EQUALLY APPROVED)
1510	1	VAAL 100mm 90° ANGLE (TWO MITRED 150 CHANNEL) (OR EQUALLY APPROVED)
8210Z0	1	VAAL 75mm C.P DOME GRATING (OR EQUALLY APPROVED)

PLAN
SCALE 1:20

NOTE:
THE CHANNELS ARE TO BE FIXED TO THE SURFACE BED WITH UMGENI/CEMENT MORTAR 1:3 RATIO AND WET TO DRY EPOXY.THE SURFACE BED IS TO BE SCABBLED PRIOR TO APPLICATION OF MORTAR.THE CHANNEL IS TO BE LAID AS PER PLAN FALL. ALL JOINTS BETWEEN CHANNELS TO BE SEALED WITH WATERPROOF GROUT.



SECTION A-A
SCALE 1:20

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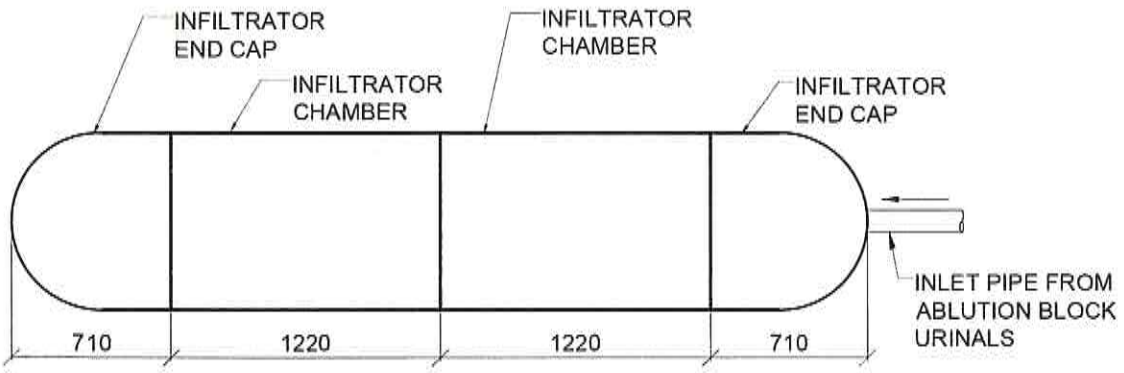
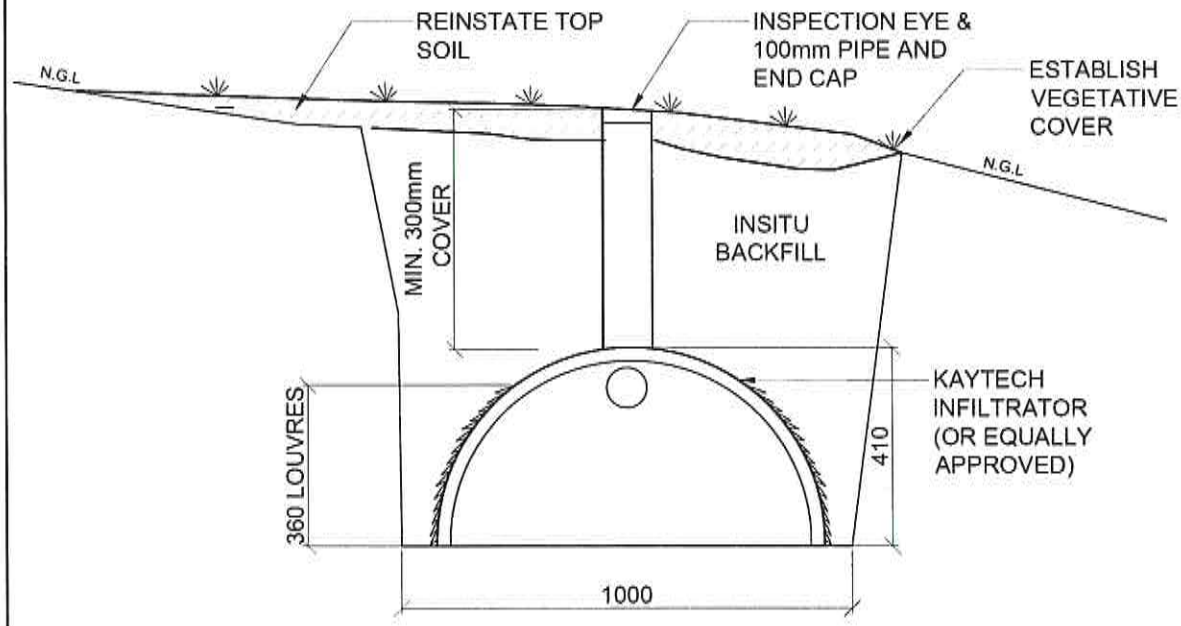
MAPAFRICA

PROJECT: DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	DETAILS: PLAN AND SECTION SHOWING URINAL TO BOYS ABLUTION	DATE 2018.10.18	REVISION P2
		PROJ. No. 474	SKETCH No. Sk 915



PLAN

SCALE 1:30



SECTION

SCALE 1:15

TYPICAL SECTION THROUGH INFILTRATOR SOAKAWAY

PROJECT:	DETAILS:	DATE	REVISION
DEPARTMENT OF EDUCATION STORM DAMAGED DISASTER PROGRAMME PHASE 16	TYPICAL INFILTRATOR SOAKAWAY DETAIL FOR URINALS	2018.10.18	P2
		PROJ. No. 474	SKETCH No. Sk 916