TENDER NO. T22/2022		
Approved by Supply Chain Manager	Version: 00	Page 1 of 341 (excl. BOQ Pages)

CONTRACT DOCUMENT

FOR THE

CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

VOLUME 1: RETURNABLE DOCUMENT

NOTE:

- The Form of Offer and Acceptance (C1.1) is on **page 80** of this document
- Table 1: Preference Schedule (B-BBEE contribution) is on **page 74** of this document

MAY 2022

Name of Tenderer	
Address (Physical)	
Contact Person	
Contact Number	
Email Address	
Amount (15% VAT Included)	
B-BBEE Status	
Duration (weeks)	

ISSUED BY:

THE MUNICIPAL MANAGER
LANGEBERG MUNICIPALITY
28 MAIN ROAD
ASHTON
6715
Tel: (023) 615 8000

LANGEBERG MUNICIPALITY

TENDER NO. T22/2022

CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

General Tender Information

TENDER ADVERTISED	:	27 May 2022
ESTIMATED CIDB CONTRACTOR GRADING DESIGNATION	:	4GB or higher
SITE VISIT/CLARIFICATION MEETING	:	6 June 2022 at 10h00
VENUE FOR SITE VISIT/CLARIFICATION MEETING	:	Municipal offices, 52 Church Street, Robertson
CLOSING DATE	:	17 June 2022
CLOSING TIME	:	12h00
TENDER BOX & ADDRESS	:	The Bid Box, at the Supply Chain Management Unit, LANGEBERG Municipality.
	:	The Tender Document (which includes the Form of Offer and Acceptance) completed in all respects, plus any additional supporting documents required, must be submitted in a sealed envelope with the name and address of the tenderer, the tender No. and title and the closing date indicated on the envelope. The sealed envelope must be inserted into the appropriate official tender box before closing time. If the tender offer is too large to fit into the abovementioned box or the box is full, please enquire at the reception for alternative instructions. The onus remains with the tenderer to ensure that the tender is placed in either the original box or as alternatively instructed.

TENDERERS MUST NOTE THAT WHEREVER THIS DOCUMENT REFERS TO ANY PARTICULAR TRADEMARK, NAME, PATENT, DESIGN, TYPE, SPECIFIC ORIGIN OR PRODUCER, SUCH REFERENCE SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS "OR EQUIVALENT"

PART A (MBD1)
INVITATION TO BID

THE FOLLOWING PARTICULARS MUST BE FURNISHED (FAILURE TO DO SO WILL RESULT IN YOUR OFFER BEING DISQUALIFIED)

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE LANGEBERG MUNICIPALITY					
BID NUMBER:	T22/2022	**CLOSING DATE**:	17 June 2022	**CLOSING TIME:**	12h00
DESCRIPTION:	CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM.					

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT:
ENTRANCE OF THE MUNICIPAL OFFICES 28 Main Road Ashton 6715

SUPPLIER INFORMATION			
NAME OF BIDDER			
POSTAL ADDRESS			
STREET ADDRESS			
TELEPHONE CODE & NUMBER			
CELL PHONE NUMBER			
FACSIMILE CODE & NUMBER			
E-MAIL ADDRESS			
VAT REGISTRATION NUMBER			
TAX PIN		TAX REFERENCE NUMBER	
CSD No			
ORIGINAL AND VALID TAX CLEARANCE CERTIFICATE / TSC PIN SUBMITTED? YES☐ NO☐			
A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BEE. NOTE A CERTIFIED COPY OR ORIGINAL IS COMPULSORY			
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE SUBMITTED? (MBD 6.1) YES☐ NO☐ IF YES, WHO WAS THE CERTIFICATE ISSUED BY? (Tick applicable box) A VERIFICATION AGENCY ACCREDITED BY SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM (SANAS) ☐ or A SWORN AFFIDAVIT FOR EME'S AND QSE'S ☐			
RECENT MUNICIPAL ACCOUNT OF COMPANY (NOT OLDER THAN 90 DAYS) **MUST** BE ATTACHED			
RECENT MUNICIPAL ACCOUNTS OF ALL THE DIRECTORS/ SHAREHOLDERS **MUST** BE ATTACHED			
IF LEASING/RENTING/LODGING – ATTACHED LATEST VALID COPY OF AGREEMENT **IF NO PROPERTY REGISTERED IN YOUR NAME SUBMIT AN AFFIDAVIT CONFIRMING THIS. COPY OF AFFIDAVIT IS AVAILABLE ON REQUEST FROM THE SCM UNIT**			

BID PRICE OFFERED **NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE** **(see definition on MBD 4 attached)**	
TOTAL BID PRICE (INCL 15% VAT)	

ANY ENQUIRIES REGARDING THE BIDDING PROCEDURE MAY BE DIRECTED TO:

LANGEBERG MUNICIPALITY
Contact Person: Mr N. Albertyn
Tel: 023 626 8200
Fax: 086 569 2366
E-mail: nalbertyn@langeberg.gov.za

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

YOURS FAITHFULLY,

ASA DE KLERK
MUNICIPAL MANAGER
MUNICIPAL OFFICES
PRIVATE BAG X2
ASHTON
6715

TEL: 023 626 8200

PART B (MBD 1)
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

1.1 BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2 **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED – (NOT TO BE TYPED) OR ONLINE**
1.3 THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYERS PROFILE AND TAX STATUS.
2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA
2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PARAGRAPH 3 BELOW
2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

3.1	IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
3.2	DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
3.3	DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
3.4	DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
3.5	IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.
NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

CHECK LIST

This list is to assist all bidders to submit complete proposals. Bidders are to check the following points before the submission of their proposals:		
1	All pages of the document have been read by the contractor and initialled.	☐
2	Any discrepancy and/or misunderstanding is cleared with the relevant officials.	☐
3	All pages requiring information have been **completed in black ink.**	☐
4	The Schedule of Quantities has been checked for arithmetic correctness.	☐
5	Totals from each sub section of the Schedule of Quantities have been carried forward to the summary page and done so correctly.	☐
6	The total from the summary page has been carried forward to the Form of Offer.	☐
7	Surety details where applicable have been included in the proposal.	☐
8	All sections requiring information have been completed.	☐
9	Bidder ensured that all documents is properly completed and signed	☐
10	The contractor has complied with the proposal prerequisites.	☐
11	The document is submitted before 12h00 on the due date at the designated bid box of Langeberg Municipality.	☐

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

LANGEBERG MUNICIPALITY

TENDER NO. T22/2022

CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

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LANGEBERG MUNICIPALITY

TENDER NO. T22/2022

CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

T1.1 Tender Notice and Invitation to Tender

LANGEBERG MUNICIPALITY | UMASIPALA | MUNISIPALITEIT
Private Bag X2, Ashton, 6715
☎ (023) 625 8200 🖷 (086) 569 2366 @ nalbertyn@langeberg.gov.za
www.langeberg.gov.za

TENDER NOTICE AND INVITATION TO BID			
DEPARTMENT INFRASTRUCTURE			
ADVERTISED IN	MUNICIPAL NOTICE BOARD, MUNICIPAL WEBSITE, DIE BURGER		
BID NO:	T22/2022	**PUBLISHED DATE:**	
Bids are hereby invited for (Tender Description)	CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU		
Closing Time and Date	No later than 12H00	On the Date	17 June 2022
Compulsory Site Meeting	6 June 2022 @ 10h00		**CIDB GRADING**: 4GB
Bids will be opened immediately thereafter, in public at the Council Chambers of LANGEBERG Municipality, 28 Main Road, Ashton.			
AVAILABILITY OF BID DOCUMENTS			
Tender Documents will be downloadable only form www.langeberg.co.za			
Date Available	27 May 2022		

BID RULES

a. Bids are to be completed in accordance with the conditions and bid rules contained in the bid document and supporting documents must be placed in a sealed envelope and externally endorsed WITH THE NAME AND ADDRESS OF THE TENDERER, THE TENDER NO. AND TITLE AND THE CLOSING DATE, and be deposited in the Bid Box, at the Supply Chain Management Unit, Langeberg Municipality, 28 Main Street, Ashton.

b. Bids may only be submitted on the bid documentation issued by the Municipality.

c. The Langeberg Municipality does not bind itself to accept the lowest or any tender and reserves the right to accept any tender, as it may deem expedient.

d. Online registration to be completed on the CSD registration platform, website https://secure.csd.gov.za.

e. Pre-qualification criteria for preferential procurement is applicable to the tender.

Tenders shall be evaluated in terms of the latest Langeberg Municipality Supply Chain Management Policy and the Preferential Procurement Regulations.		**Bidders may claim preference points in terms of their B-BBEE status level of contribution.**	
Preferential Procurement Point System Applicable	80/20	**Local Content Requirement**	Yes
Site Meeting/Information Session	Yes	**Validity Period**	120 days

TECHNICAL ENQUIRIES: Mr R Siebrits ruaan@udsafrica.co.za		**BIDDING PROCEDURE REQUIREMENTS & ENQUIRIES:** Mr N. Albertyn – nalbertyn@langeberg.gov.za	
Section	UDS Africa	**Section**	SUPPLY CHAIN MANAGEMENT
Contact Person	Mr R Siebrits	**Contact Person**	Mr S Ngcongolo -
Tel:	E-mail Enquiries Only	**Tel:**	E-mail Enquiries Only
E-mail	ruaan@udsafrica.co.za	**E-mail**	SNgcongolo@langeberg.gov.za

Authorised by:
ASA DE KLERK
MUNICIPAL MANAGER
NOTICE NR: T22/2022

Private Bag X2
ASHTON, 6715
TEL: 023 626 8200

T1.2 Tender Data

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of Government Gazette No. 42622 of 8 August 2019, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement. (see www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of tenderers as an Annex to this Tender Data.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

The following variations, amendments and additions to the Standard Conditions of Tender as set out in the Tender Data below shall apply to this tender:

Clause number	**Tender Data**
C.1	**General**
C.1.1	Actions
C.1.1.1	*Add the following:* **The parties agree that this tender, its evaluation and acceptance and any resulting contract shall also be subject to the Employer's Supply Chain Management Policy ('SCM Policy') that was applicable on the date the tender was advertised, save that if the Employer adopts a new SCM Policy which contemplates that any clause therein would apply to the contract emanating from this tender, such clause shall also be applicable to that contract. Please refer to this document contained on the Employer's website.** **Abuse of the supply chain management system is not permitted and may result in the tender being rejected, cancellation of the contract, restriction of the supplier, and/or the exercise by the Employer of any other rights and remedies available to it as described in the SCM Policy.** The Employer is the LANGEBERG MUNICIPALITY, represented by UDS AFRICA as the Employer's Agent.
C.1.2	Tender Documents *Add the following:* **The following documents form part of this contract:** **VOLUME 1:** The Tender Document issued by the employer (this document), in which is bound: **THE TENDER** **Part T1: Tendering Procedure** T1.1 Tender notice and invitation to tender T1.2 Tender data **Part T2: Returnable Documents** T2.1 List of returnable documents T2.2 Returnable schedules **THE CONTRACT** **Part C1: Agreement and contract data** C1.1 Form of Offer and Acceptance C1.2 Contract Data (data provided by the Contractor) – Part 1

C1.2 Contract Data (data provided by the Employer) – Part 2
C1.3 Form of Performance Guarantee
C1.4 Form of Advance Payment Guarantee
C1.5 Occupational Health and Safety Agreement
C1.6 Protection of the Environment Declaration
C1.7 Insurance Broker's Warranty

Part C2: Pricing Data
C2.1 Pricing Assumptions
C2.2 Bills of Quantities

Part C3: Scope of Work
C3.1 Description of the Works
C3.2 Engineering/Design
C3.3 Procurement
C3.4 Construction

Part C4: Site information
C4 Site information

Part C5: LANGEBERG Municipality Supply Chain Policy
C5 Supply Chain Policy

Part C6: Health and Safety Specifications
C6 Health and Safety Tender Specifications

Part C7: Drawings
C7 Drawings

Volume 1 is deemed the "Returnable Document" which must be returned to the Employer in terms of submitting a tender offer.

In addition to the above, the following further documents are part of the tender:

VOLUME 2: The General Conditions of Contract for Construction Works, Third Edition, 2015, prepared by the South African Institution of Civil Engineering (SAICE). This publication is available and tenderers must obtain copies at their own cost from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za.

VOLUME 3: The SANS Standardised Specifications for Civil Engineering Construction prepared by Standards South Africa. These publications are available, and tenderers must obtain copies at their own cost from Standards South Africa, Private Bag X191, PRETORIA, 0001.

VOLUME 4: *Model Preambles for Trades (2008 Edition). This document is published by and is available from the Association of South African Quantity Surveyors, P.O. Box 3527, Halfway House, 1685. Telephone (011) 315 4140. E-mail: administration@asaqs.co.za*

Volumes 2, 3 & 4 may also be inspected, by appointment, at the offices of the Employer's agent during normal office hours.

C.1.4 Communication and employer's agent
Delete the first sentence of the clause and replace with the following:
Verbal or any other form of communication, from the Employer, its employees, agents or advisors during site visits/clarification meetings or at any other time prior to the award of the Contract, will not be regarded as binding on the Employer, unless communicated by the Employer in writing to suppliers by its Municipal Supply Chain Manager or his nominee.

The Employer's agent is:
Company: UDS Africa
Name: Ruaan Siebrits
Address: Unit 8, Time Square Building, 9 Elektron Street, Techno Park, Stellenbosch, 7600
Tel: (021) 880 0443
E-mail: ruaan@udsafrica.co.za

C.1.5 Cancellation and Re-Invitation of Tenders
Delete the full stop at the end of C.1.5.1 d) and replace with, or
Add the following after C.1.5.1 d):
e) the parties are unable to negotiate market related pricing.

C.1.6.2 Competitive negotiation procedure
Add the following between C.1.6.2 and C.1.6.2.1:
A competitive negotiation procedure will **not** be followed.

C.1.6.3 Proposal procedure using the two-stage system
Add the following between C.1.6.3 and C.1.6.3.1:
A two-stage system will **not** be followed.

Add the following Clauses (C.1.6.4, C1.7) after Clause C.1.6.3 and before clause C.2.
C.1.6.4 Objections, complaints, queries and disputes/ Appeals in terms of Section 62 of the Systems Act/ Access to court

C.1.6.4.1 Disputes, objections, complaints, and queries
In terms of Regulations 49 and 50 of the Local Government: Municipal Finance Management Act, 56 of 2003 – Municipal Supply Chain Management Regulations (Board Notice 868 of 2005):
a) Persons aggrieved by decisions or actions taken by the ***Langeberg Municipality*** in the implementation of its supply chain management system, may lodge within 14 days of the decision or action, a written objection or complaint or query or dispute against the decision or action.

C.1.6.4.2 Appeals
a) In terms of Section 62 of the Local Government: Municipal Systems Act, 32 of 2000 a person whose rights are affected by a decision taken by the ***Langeberg Municipality***, may appeal against that decision by giving written notice of the appeal and reasons to the Municipal Manager within 21 days of the date of the notification of the decision.
b) An appeal must contain the following:
   i) Must be in writing
   ii) It must set out the reasons for the appeal
   iii) It must state in which way the Appellant's rights were affected by the decision;
   iv) It must state the remedy sought; and
   v) It must be accompanied with a copy of the notification advising the person of the decision
c) The relevant ***Langeberg Municipality*** appeal authority must consider the appeal and **may confirm, vary or revoke** the decision that has been appealed, but no such revocation of a decision may detract from any rights that may have accrued as a result of the decision.

C.1.6.4.3 Right to approach the courts and rights in terms of Promotion of Administrative Justice Act, 3 of 2000 and Promotion of Access to Information Act, 2 of 2000
The sub-clauses above do not influence any affected person's rights to approach the High Court at any time or its rights in terms of the Promotion of Administrative Justice Act and Promotion of Access to Information Act.

C.1.6.4.4 All requests referring to sub clauses C.1.6.4.1; C.1.6.4.2 and C.1.6.4.3 must be submitted in writing to:
The Municipal Manager - Langeberg Municipal Offices
Via hand delivery at: Langeberg Municipality, 28 Main Street, Ashton
Via post at: Private Bag X2, Ashton, 6715
Via fax at: (086) 569 2366
Via email at: mm@langeberg.gov.za

C.1.7 National Treasury Web Based Central Supplier Database (CSD) Registration
Tenderers are required to be registered on the National Treasury Web Based Central Supplier Database (CSD) as a service provider. Tenderers must register as such upon being requested to do so in writing and within the period contained in such a request, failing which no orders can be raised or payments processed

from the resulting contract. In the case of Joint Venture partnerships this requirement will apply individually to each party of the Joint Venture.

Tenderers who wish to register on the National Treasury Web Based Central Supplier Database (CSD) may do so via the web address **https://secure.csd.gov.za**.

It is each tenderer's responsibility to keep all the information on the National Treasury Web Based Central Supplier Database (CSD) updated.

C.2 Tenderer's obligations

C.2.1.1 *Delete the content of this clause and replace with the following:*
Tenderers must submit a tender offer that complies in all aspects to the conditions as detailed in this document. Only those tenders that comply in all aspects with the tender conditions, specifications, pricing instructions and contract conditions will be declared responsive.

Add the following clauses after C.2.1.2 and before C2.2:

C.2.1.3 Only those tender submissions from which it can be established that a clear and unambiguous offer has been made to Employer, by whom the offer has been made and what the offer constitutes, will be declared responsive.

C.2.1.4 Only those tenders that satisfy the following criteria will be declared responsive:

C.2.1.4.1 Construction Industry Development Board (CIDB) Registration
Only those tenderers who are registered with the CIDB, or capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations, for a CE or GB class of construction work, are eligible to have their tenders evaluated. Tenderers must obtain such active status upon being requested to do so in writing and within the period contained in such a request, failing which their tenders will be declared non-responsive.

Joint Ventures are eligible to submit tenders provided that:

a) every member of the joint venture is registered with an active status with the CIDB;
b) the lead partner has a contractor grading designation of not lower than one level below the required grading designation in the **GB class** of construction work; and
c) the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **GB class** of construction work or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations.

For alpha-numerics associated with the contractor Grading Designations see Annex G attached.

C.2.1.4.2 Compliance with requirements of LANGEBERG MUNICIPALITY SCM Policy and procedures
Only those tenders that are compliant with the requirements below will be declared responsive:

a) A completed **Compulsory Enterprise Questionnaire** to be provided (applicable schedule to be completed);
b) A completed **Certificate of Authority for Companies/Partnerships/Joint Ventures/Consortiums** to be provided authorising the tender to be made and the signatory to sign the tender on the partnership /joint venture/consortium's behalf (applicable schedule to be completed);
c) A copy of the partnership / joint venture / consortium agreement to be provided;
d) A completed **Declaration of Interest – State Employees** to be provided and which does not indicate any non-compliance with the legal requirements relating to state employees (applicable schedule to be completed);
e) A completed **Declaration – Conflict of Interest** and **Declaration of Bidder's past Supply Chain Management Practices** to be provided and which does not indicate any conflict or past practises that renders the tender non-responsive based on the conditions contained thereon (applicable schedules to be completed);
f) A completed **Certificate of Independent Bid Determination** to be provided and which does not indicate any non-compliance with the requirements of the schedule (applicable schedule to be completed);
g) The tenderer (including any of its directors or members), has not been restricted in terms of abuse of the Supply Chain Management Policy;
h) The tenderer's tax matters with SARS are in order, or the tenderer is a foreign supplier that is not required to be registered for tax compliance with SARS;

i) The tenderer is not an advisor or consultant contracted with the Employer whose prior or current obligations creates any conflict of interest or unfair advantage;
j) The tenderer is not a person, advisor, corporate entity or a director of such corporate entity, involved with the bid specification committee;
k) A completed Authorisation for the Deduction of Outstanding Amounts Owed to the Langeberg Municipality to be provided and which does not indicate any details that renders the tender non-responsive based on the conditions contained thereon (applicable schedules to be completed);
l) The tenderer (including any of its directors or members), has not been found guilty of contravening the Competition Act 89 of 1998, as amended from time to time;
m) The tenderer (including any of its directors or members), has not been found guilty on any other basis listed in the SCM Policy.

C.2.1.4.3 Minimum score for functionality based on a pre-qualification inspection

Please note that points scored for Quality (functionality) will not have an influence on the total tender evaluation points and will therefore not affect the ranking of the tenderers, it will only be regarded as a pre-qualification. The minimum points required to be eligible to tender is 70 out of a 100.

THE CRITERIA to be applied in evaluating the proposal is set out in the table below:

Calculate the points for functionality according to the following formula:

$$P_s = S_o/M_s \times A_p$$

Where P_s = Percentage scored for functionality by bid under consideration
S_o = Total score of bid/proposal under consideration
M_s = Maximum possible score = 500
A_p = percentage allocated for functionality = 100

Total points by bidder on functionality:

i) $P_{s(Criterion\ 1)}$ = (Indicator allocated/scored out of 5) x weight
ii) $P_{s(Criterion\ 2)}$ = (Indicator allocated/scored out of 5) x weight
$P_{s(TOTAL)} = [(P_{s(Criterion\ 1)} + P_{s(Criterion\ 2)}) / 5] \times 100$

Criteria can be amended to suit project complexity or omitted if not applicable.

Criterion	Weight
1) Relevant Experience (Returnable Schedule 14)	50%
2) Construction manager Experience (Returnable Schedule 15)	50%
Total	**100%**

EVALUATION CRITERION 1

Tenderers must have successfully **completed** (please note that current projects will not be included in the evaluation) at least 5 projects of a similar scope and nature in the last 10 years to score full marks on this criterion. Refer to the table below for a measurement of how points will be awarded against this criterion.

A detailed list of successfully completed projects must be completed in/attached to **Schedule 14**.

Projects of a similar scope and nature is regarded as:

Structural steel structures or brick and mortar buildings or refurbishment of existing brick and mortar buildings with a project value equal to or higher than the sum tendered. Please note that no tenderer will be contacted to clarify any experience or construction equipment, or plant submitted with this bid. If insufficient information is shown, the tenderer will **not** be contacted for clarification.

1. RELEVANT EXPERIENCE	
INDICATOR	**Evaluation Criteria for Relevant Experience:** (number of similar projects completed by the contractor in the last 10 years)
0	The tenderer has completed zero projects in the last 10 years
1	The tenderer has completed only 1 project in the last 10 years
2	The tenderer has completed exactly 2 projects in the last 10 years
3	The tenderer has completed exactly 3 projects in the last 10 years
4	The tenderer has completed exactly 4 projects in the last 10 years
5	The tenderer has completed 5 or more projects in the last 10 years

EVALUATION CRITERION 2

Detailed, project specific CV's to be included in **Schedule 15** of the Returnable Documents. Failure to do so during tender phase will lead to disqualification of tenderer.

Construction managers must have successfully **completed** (please note that current projects will not be included in the evaluation) at least 5 projects of a similar scope and nature in the last 10 years to score full marks on this criterion. Refer to the table below for a measurement of how points will be awarded against this criterion.

Projects of a similar scope and nature is regarded as:

Structural steel structures or brick and mortar buildings or refurbishment of existing brick and mortar buildings with a project value equal to or higher than the sum tendered. Please note that no tenderer will be contacted to clarify any experience or construction equipment, or plant submitted with this bid. If insufficient information is shown, the tenderer will **not** be contacted for clarification.

If, during construction, the contractor wishes to replace the construction manager, the contractor will apply in writing to the Engineer as per clause 4.12 of the GCC 2015. Only similarly experienced and competent construction managers will be considered.

2. CONSTRUCTION MANAGER	
INDICATOR	**Evaluation Criteria for Construction manager:** (number of similar projects completed by the Construction manager in the last 10 years)
0	The Construction manager has completed zero projects in the last 10 years
1	The Construction manager has completed only 1 project in the last 10 years
2	The Construction manager has completed exactly 2 projects in the last 10 years
3	The Construction manager has completed exactly 3 or more projects in the last 10 years
4	The Construction manager has completed exactly 4 or more projects in the last 10 years
5	The Construction manager has completed 5 or more projects in the last 10 years

The functionality proposal will be evaluated individually on score sheets, by a representative evaluation panel according to the evaluation criteria indicated above. All service providers who scored less than 70 out of 100 points for functionality will not be considered further. At least 3 evaluators will evaluate the quality schedules separately.

NB: Points scored for Quality (functionality) will not have an influence on the total tender evaluation points.

Where the entity tendering is a Joint Venture the tender must be accompanied by a statement describing exactly what aspects of the work will be undertaken by each party to the joint venture (appended to Schedule 3, Part T2.2: Returnable Schedules).

C.2.1.4.4.3 A copy of the authorisation letter must be submitted together with the bid document at the closing date and time of the bid.

C.2.1.4.4.4 The Employer is obliged and must ensure that contracts for **the designated sector** are awarded at prices that are market related taking into account, among others, benchmark prices designated by the DTI for the sector, value for money and economies of scale. Where appropriate, prices may be negotiated with preferred bidders in accordance with provisions for Negotiation with Preferred Bidders as set out in the LANGEBERG Municipality SCM Policy.

C.2.1.4.4.5 A bid will be declared non-responsive / disqualified if the **Local Content Declaration / Annexure C** returnable schedule as well as the authorisation letter referred to above (if applicable) are not submitted as part of the bid documentation at the closing date and time of the bid.

C.2.1.4.4.6 For further information relating to the local production and content legislation, bidders may refer to website http://www.thedti.gov.za/industrial_development/ip.jsp, or the DTI Contact Centre no 0861 843384.

C.2.1.4.5 Compulsory clarification meeting
Tenderers are required to attend a compulsory clarification meeting at which they may familiarise themselves with aspects of the proposed work, services or supply and pose questions.
Details of the meeting(s) are stated in the General Tender Information.
Only those tenders submitted by tenderers whose attendance at this meeting have been recorded, will be declared responsive.

C.2.1.4.6 Good standing with Bargaining Council

Only those tenders submitted by tenderers who are in good standing with the **Bargaining Council for the Civil Engineering Industry (BCCEI)** at the time of the tender award will be declared responsive. Tenderers must attach such proof to the schedule titled **Declaration in Respect of Compliance with Labour Legislation** or obtain such upon being requested to do so in writing and within the period contained in such a request, failing which their tenders will be declared non-responsive.

C.2.1.4.7 Good standing with SARS/Tax Clearance

Bidders are required to submit their unique personal identification number (pin) issued by SARS to enable the organ of state to view the taxpayer's profile and tax status. Application for the tax compliance status (TCS) certificate or pin may also be made via e-filing. In order to use this provision, taxpayers will need to register with SARS as e-filers through the website www.SARS.gov.za. Bidders may also submit a printed TCS certificate together with the bid (valid and original). In Bids where Consortia/Joint Venture/Sub-contractors are involved each party must submit a separate and Original Valid Tax Clearance Certificate.

C.2.3 Check documents

Delete the clause content and replace with the following:

The Tenderer should check the tender documents on receipt for completeness, missing or duplicated pages, indistinct figures or writing and any obvious errors. The Tenderer must notify the Employer's agent at once of any such problems identified

C.2.7 Clarification meeting

Add the following after the second sentence:

The arrangements for the site visit/clarification meeting are as stated on the General Tender Information page and in the Responsiveness Criteria (if applicable). Failure to provide proof of attendance of this clarification meeting will result in disqualification of the tender. The applicable schedule in the returnable documents must be signed by employer **or** employer's agent as proof of attendance or the signed (signed by attending tenderers) attendance register should be attached to this schedule.

Tenderers should be represented at the clarification meeting by a person who is suitably qualified and experienced to comprehend the implications of the work involved. The employer or employer's agent cannot be held liable for any information discussed during the Clarification Meeting not correctly carried forward to the authorised person signing the tender document.

C.2.8 Seek Clarification

Add the following after the first sentence:

The tenderer warrants that it has:

a) inspected the Specifications and read and fully understood the Conditions of Contract.
b) read and fully understood the whole text of the Specifications and Price Schedule and thoroughly acquainted itself with the nature of the goods proposed and generally of all matters which may influence the Contract.
c) visited the site(s) where delivery of the proposed works will take place, carefully examined existing conditions, the means of access to the site(s), the conditions under which the delivery is to be made, and acquainted itself with any limitations or restrictions that may be imposed by the Municipal or other Authorities in regard to access and transport of materials, plant and construction equipment to and from the site(s) and made the necessary provisions for any additional costs involved thereby.
d) requested the Employer to clarify the requirements contained in the Specifications and Price Schedule, the exact meaning or interpretation of which is not clearly intelligible to the tenderer.
e) received any notices to the tender documents which have been issued in accordance with the Employer's SCM Policy.

The Employer will therefore not be liable for the payment of any extra costs resulting from any claim submitted by the tenderer arising from any alleged ambiguity or uncertainty contained in the tender document.

C.2.11 Alterations to documents

Delete the first sentence and replace with the following:

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer in writing, or necessary to correct errors made by the tenderer.

C.2.12 Alternative tender offers

C.2.12.1 *Add the following to C.2.12.1 at the end of the first sentence:*
If a tenderer wishes to submit an alternative tender offer, he shall do so as a separate offer on a separate set of tender documents. The alternative tender offer shall be submitted in a separate sealed envelope on a separate Form of Offer, both clearly marked "Alternative Tender" in order to distinguish it from the main tender offer.

While it is not necessary to duplicate all parts of the main tender offer, the alternative tender offer shall be supported by the following documents as applicable:

a) the schedule that compares the alternative(s) offered with the requirements of the issued tender documents
b) preliminary designs, calculations, drawings and all other pertinent technical information and characteristics must be submitted with the alternative tender offer, in order to enable the Employer to evaluate the efficacy of the alternatives proposed
c) revised Bills of Quantities, or parts thereof, highlighting the changes made, together with a revised Summary, the total of which has been carried to the Form of Offer
d) details of any proposed amendments to the Pricing Assumptions

An alternative of the highest ranked acceptable main tender offer that is priced higher than the main tender offer may be recommended for award, provided that the ranking of the alternative tender -offer is higher than the ranking of the next ranked acceptable main tender offer.

The Employer's costs in confirming the acceptability of the alternative offer will be, *inter alia*, considered in considering the alternative offer.

The Employer will not be bound to consider alternative tenders and shall have sole discretion in this regard.

If the alternative is accepted, the Contractor shall accept full responsibility that the alternative offer complies in all respects with the Employer's standards and requirements.

C.2.13 Submitting a tender offer

Add the following to C.2.13.1 at the end of the first sentence:
C.2.13.1 Where the tendering entity is a joint venture it is recommended that the standard CIDB Joint Venture Agreement be used.

Delete the following word from C.2.13.2 and add the following sentence after the first sentence:
C.2.13.2 Delete "either electronically (if they were issued in electronic format) or". No electronic submissions will not be accepted unless specifically requested by the Employer in writing.

Add the following to C.2.13.3:
C.2.13.3 Parts of each tender offer communicated on paper shall be submitted as an original, plus 0 (nil) copies.

Add the following after the first sentence of C.2.13.4:
C.2.13.4 The tender shall be signed by a person duly authorised to do so. Tenders submitted by joint ventures of two or more firms shall be accompanied by the document of formation of the joint venture, authenticated by a notary public or other official deputed to witness sworn statements, in which is defined precisely the conditions under which the joint venture will function, its period of duration, the persons authorised to represent and obligate it, the participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning.

Delete the clause and replace with the following.
C.2.13.5 The tender submission details are all described on the General Tender Information page.

The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:

Location of tender box:	Langeberg Municipal Office
Physical address:	Langeberg Municipality, Main Street 28, Ashton
Identification details:	Tender number: T22/2022
Title of tender:	CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

Sealed tenders with the name and address of the tenderer, the tender No. and title and the closing date indicated on the envelope, must be placed in the appropriate official tender box at the abovementioned address.

Add the following to C.2.13.6:

C.2.13.6 A two-envelope procedure will **not** be followed (C.3.5).

Add the following new Clauses after C.2.13.9 and before C.2.14:

C.2.13.10 By signing the offer part of C1.1 Form of Offer and Acceptance the tenderer declares that all information provided in the tender submission is true and correct.

C.2.13.11 The Employer shall not formally issue tender documents in electronic format and shall only issue tender documents in hardcopy. An electronic version of the issued tender documents, or elements thereof, may be made available to the tenderer at the Employer's discretion, upon written request in terms of this clause, subject to the following:

a) No Electronic copies of the issued tender documents including BOQ, or parts thereof, will be provided to tenderers.
b) The Employer shall not accept tenders submitted in electronic format. Only those tenders that have been completed on the issued hard copy tender document shall be considered.
c) Where Addenda have been issued which amend the Bills of Quantities, then the printed Bills of Quantities shall take these into account. The pages of the issued Bills of Quantities should not be removed from the tender document.
d) The Employer accepts no responsibility or liability arising from any reliance on or use of the electronic version provided in terms of this clause. Tenderers are alerted to the fact that electronic versions of the tender documents may not reflect any notices or addenda that amend the tender document.
e) Any non-compliance with these provisions, including effecting any unauthorised alterations to the tender documents as contemplated in C.2.11, shall render the tender non-responsive. The Employer reserves the right to take any action against such tenderer allowed in law including, in circumstances where the tender had already been awarded, the right to cancel the contract.

C.2.15 Closing time

Add the following to C.2.15.1 after the first sentence:

C.2.15.1 The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

C.2.16 Tender offer validity

Add the following to C.2.16.1 after the first sentence:

C.2.16.1 The tender offer validity period is **120 days**.

C.2.16.2 Delete the clause and replace with the following:

Notwithstanding the period stated above, bids shall remain valid for acceptance for a period of twelve (12) months after the expiry of the original validity period, unless the Municipality is notified in writing of anything to the contrary by the bidder. The validity of bids may be further extended by a period of not more than six months subject to mutual agreement and administrative processes and upon approval by the Municipal Manager.

C.2.17 Clarification of tender offer after submission

Add the following to C.2.17 at the end of the third sentence:

A tender will be rejected as non-responsive if the tenderer fails to provide any clarification or supporting documents requested by the Employer within the time for submission stated in the Employer's written request for such clarification or documents.

C.2.18 Provide other material

Delete the following word in C.2.18.1:

C.2.18.1 "notarized"

Add the following to C.2.18.1 at the end of the first paragraph:

Provide, on written request by the Employer, where the transaction value (tendered amount) inclusive of VAT **exceeds R 10 million**:

a) audited annual financial statement for the past 3 years, or for the period since establishment if established during the past 3 years, if required by law to prepare annual financial statements for auditing;
b) a certificate signed by the tenderer certifying that the tenderer has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days;
c) particulars of any contracts awarded to the tenderer by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract;
d) a statement indicating whether any portion of the goods or services are expected to be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality or municipal entity is expected to be transferred out of the Republic.

Each party to a Consortium/Joint Venture shall submit separate certificates/statements in the above regard.

Add the following Clauses after C.2.18.2 and before Clause C.2.19:

C.2.18.3 Tenderers shall fully cooperate with the Employer's external service provider appointed to perform a due diligence review and risk assessment upon receipt of such written instruction from the Employer.

Failure to fully cooperate could result in a tender being declared as non-responsive.

C.2.18.4 Compliance with Occupational Health and Safety Act, 85 of 1993

Tenderers are to note the requirements of the Occupational Health and Safety Act, 85 of 1993 and the Construction Regulations, 2014 issued in terms of Section 43 of the Act. The Tenderer shall be deemed to have read and fully understood the requirements of the above Act and Regulations and to have allowed for all costs in compliance therewith.

In this regard the Tenderer shall submit with his tender or upon request, appended to Schedule 21: Health and Safety Plan in T2.2: Returnable Schedules, a draft Health and Safety Plan in respect of the Works in sufficient detail to demonstrate the necessary competencies and resources to perform the construction work all in accordance with the Act, Regulations and Health and Safety Specification in Part C6 in the Scope of Work.

Such Health and Safety Plan shall cover inter-alia the following details:

(1) Management Structure, Site Supervision and Responsible Persons including a succession plan.
(2) Contractor's induction training programme for employees, sub-contractors, and visitors to the Site.
(3) Health and safety precautions and procedures to be adhered to, to ensure compliance with the Act, Regulations and Safety Specifications.
(4) Regular monitoring procedures to be performed.
(5) Regular liaison, consultation, and review meetings with all parties.
(6) Site security, welfare facilities and first aid.
(7) Site rules and fire and emergency procedures.

Tenderers are to note that the Contractor is required to ensure that all sub-contractors or others engaged in the performance of the contract also comply with the above requirements.

The Contractor shall prepare and maintain a Health and Safety File in respect of the project, which shall always be available for inspection on Site and handed over to the Employer on Final Completion of the project.

The Contractor is required to submit to the Employer the Occupational Health and Safety Agreement (included in C1.5 of the Contract Document) and a letter of good standing from the Compensation Commissioner, or a licensed compensation insurer, within 14 days after the Commencement Date of the Contract.

C.2.23 Certificates

Add the following after the first sentence:

The tenderer is required to submit the following:

C.2.23.1 Evidence of tax compliance

Tenderers shall be registered with the South African Revenue Service (SARS) and their tax affairs must be in order and they must be tax compliant subject to the requirements of clause C.2.1.4.2.h. In this regard, it is the responsibility of the Tenderer to submit evidence in the form of a valid Tax Clearance Certificate issued by SARS to the Employer at the Supplier Management Unit located within the Supplier Management /

Registration Office 28 Main Street, Ashton. (Tel 023 656 8200) or included with this tender. The tenderer must also provide its Tax Compliance Status PIN number on the **Compulsory Enterprise Questionnaire**

Each party to a Consortium/Joint Venture shall submit a separate Tax Clearance Certificate.

Before making an award the Langeberg Municipality must verify the bidder's tax compliance status. Where the recommended bidder is not tax compliant, the bidder should be notified of the non-compliant status and be requested to submit to the Langeberg Municipality, within 7 working days, written proof from SARS that they have made arrangement to meet their outstanding tax obligations. The proof of tax compliance submitted by the bidder must be verified by the Langeberg Municipality via CSD or e-Filing. The Langeberg Municipality should reject a bid submitted by the bidder if such bidder fails to provide proof of tax compliance within the timeframe stated herein.

Only foreign suppliers who have answered "NO" to all the questions contained in the Questionnaire to Bidding Foreign Suppliers section on the **Details of Tenderer** pages of the tender submission, are not required to register for a tax compliance status with SARS.

C.2.23.2 Broad-Based Black Economic Empowerment Status Level Documentation

In order to qualify for preference points, it is the responsibility of the tenderer to submit documentary proof, either as certificates, sworn affidavits or any other requirement prescribed in terms of the B-BBEE Act, of its B-BBEE status level of contribution in accordance with the applicable Codes of good practise as issued by the Department of Trade and Industry, to the LANGEBERG MUNICIPALITY at the Supplier Management Unit located within the Supplier Management / Registration Office, 28 Main Street, Ashton.(Tel: 023 626 8200) or included with the tender submission.

Consortiums/Joint Ventures will qualify for preference points, provided that the **entity** submits the relevant certificate/scorecard in accordance with the applicable codes of good practise. Note that, in the case of unincorporated entities, a verified consolidated B-BBEE scorecard must be submitted in the form of a certificate with the tender.

Tenderers are further referred to the content of the **Preference Schedule** for the full terms and conditions applicable to the awarding of preference points.

The applicable code for this tender is the **Amended Codes for Measuring Broad-Based Black Economic Empowerment in the Construction Sector.**

The tenderer shall indicate in Section 25 of the **Preference Schedule** the Level of Contribution in respect of the enterprise status or structure of the tendering entity (the supplier).

Add the follow new clause after C.2.23.2

C.2.24 Proposed Deviations and Qualifications

Where the tenderer cannot tender in all respects in accordance with the provisions contained in the tender documents, all deviations therefrom shall be clearly and separately listed in the schedule titled **Proposed Deviations and Qualifications by Tenderer** in T2.2 Returnable Schedules, or in a tenderer's covering letter expressly referenced in this schedule.

The tenderer accept that the Employer will examine such deviations in terms of clause C.3.8.2 and shall not be bound to accept any such deviations or qualifications.

It must be clearly stated by the tenderer whether the sum tendered in the Tender Offer includes for all such deviations or qualifications listed or referred to in the schedule titled **Proposed Deviations and Qualifications by Tenderer** or not.

C.3 The Employer's undertakings

C.3.2 Issue Addenda

Delete the first sentence and replace with:

If necessary, issue addenda in writing that may amend or amplify the tender documents to each tenderer during the period from the date the tender documents are available until one week before the tender closing time stated in the Tender Data. The Employer reserves its rights to issue addenda less than one week before the tender closing time in exceptional circumstances.

Add the following to C.3.2 at the end of the paragraph:

Notwithstanding any requests for confirmation of receipt of` Addenda issued, the tenderer shall be deemed to have received such addenda if the employer can show proof of transmission thereof (or a notice in respect thereof) via electronic mail, facsimile, or registered post. It is therefore of great importance that the contact details provided during the compulsory clarification meeting is legible and contactable.

C3.4 Opening of tender submissions

Add the following to C.3.4.2 at the end of the paragraph:
The location for opening of the tender offers is the Tender Submission Office at the address as stated on the General Tender Information page.

C.3.8 Test for responsiveness

C.3.8.2 *Replace the final sentence of C.3.8.2 with the following:*
Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the material deviation.

Add the following after clause C.3.8.2
C.3.8.3 The Employer reserves the right to accept a tender offer which does not, in the Employer's opinion, materially and/or substantially deviate from the terms, conditions, and specifications of the tender documents.

C.3.9 Arithmetical errors, omissions, and discrepancies

Add the following after clause C.3.9.4
C.3.9.5 In the event of tendered rates or lump sums being declared by the Employer to be unacceptable to it because they are not priced, either excessively low or high, or not in proper balance with other rates or lump sums, the Tenderer may be required to produce evidence and advance arguments in support of the tendered rates or lump sums objected to. If, after submission of such evidence and any further evidence requested, the Employer is still not satisfied with the tendered rates or lump sums objected to, it may request the tenderer to amend these rates and lump sums along the lines indicated by it.

The Tenderer will then have the option to alter and/or amend the rates and lump sums objected to and such other related amounts as are agreed on by the Employer, but this shall be done without altering the tender offer in accordance with this clause.

Should the Tenderer fail to amend his tender in a manner acceptable to and within the time stated by the Employer, the Employer may declare the tender as non-responsive.

C.3.10 Clarification of a tender offer

Delete the clause and replace with the following:
C3.10 The Employer may, after the closing date, request additional information or clarification from any tenderer, in writing on any matter affecting the evaluation of the tender offer or that could give rise to ambiguity in a contract arising from the tender offer, which written request and related response shall not change or affect their competitive position or the substance of the tenderer's offer.

C.3.11 Evaluation of tender offers

Add the following Clauses after clause C.3.11.1 and before Clause C.3.12
C.3.11.2 Where the scoring of functionality forms part of a bid process, each member of the Bid Evaluation Committee must individually score functionality. The individual scores must then be interrogated and calibrated if required where there are significant discrepancies. The individual scores must then be added together and averaged to determine the final score.

C.3.11.3 The tender will be evaluated in terms of the requirements of the Preferential Procurement Regulations of 2017 as follows:

C.3.11.3.1 The preference point system applicable to this tender is the 80/20 preference point system.

C.3.11.3.2 Price, preference and functionality will be scored, as relevant, to two decimal places.

C.3.11.3.3 Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the tender data and reject all claims for preferences where tenderers are not eligible for such preferences.

Points will be awarded to tenderers who are eligible for preferences in terms of the **Preference Schedule** (where preferences are granted in respect of B-BBEE contribution) which is included in T2.2 Returnable Schedules.

The terms and conditions of the **Preference Schedule** shall apply in all respects to the tender evaluation process and any subsequent contract.

In addition, the various deemed B-BBEE Status Level of Contributor in accordance with the relevant Codes can be attained and such tenderers must be awarded the appropriate number of points.

It should be noted that such Deemed B-BBEE Status Level of Contribution can be enhanced or discounted in accordance with the relevant clauses in the applicable Codes.

C.3.11.4 Risk Analysis

Notwithstanding compliance with regard to CIDB registration or any other requirements of the tender, the employer will perform a risk analysis in respect of the following:

a) reasonableness of the financial offer
b) reasonableness of unit rates and prices
c) the tenderer's ability to fulfil its obligations in terms of the tender document, that is, that the tenderer can demonstrate that he/she/it possesses the necessary professional and technical qualifications, professional and technical competence, financial resources (Bank Ratings will be requested), equipment and other physical facilities, managerial capability, reliability, capacity, experience, reputation, personnel to perform the contract, etc.; the Employer reserves the right to consider a tenderer's existing contracts with the Employer in this regard
d) any other matter relating to the submitted bid, the tendering entity, matters of compliance, verification of submitted information and documents.

The conclusions drawn from this risk analysis will be used by the Employer in determining the acceptability of the tender offer in terms of C.3.13.

C.3.13 Acceptance of tender offer

Delete first sentence of C.3.13 and replace with the following):

Accept the tender offer, if in the opinion of the employer, it does not present any material risk and only if the tenderer:

Delete C.3.13 a) and replace with the following):

a) is not under restrictions, has any principals who are under restrictions, or is not currently a supplier to whom notice has been served for abuse of the supply chain management system, preventing participation in the employer's procurement;

Add the following below C.3.13 f)

If an award cannot be made in terms of anything contained herein, the Employer reserves the right to consider the next ranked tenderer(s). The Employer does not bind himself to accept the lowest priced tender, highest evaluation points tender or any tender offer. The Employer has the right to accept any part of a tender as he may deem expedient subject to negotiation with the successful tenderer for the whole tender.

C.3.13.1 The Employer reserves the right not to make an award, or revoke an award already made, where the implementation of the contract may result in reputational risk or harm to the Langeberg Municipality as a result of (inter alia):

a) reports of poor governance and/or unethical behaviour;
b) association with known family of notorious individuals;
c) poor performance issues, known to the Langeberg Municipality;
d) negative social media reports; and
e) adverse assurance (e.g. due diligence) report outcomes.

C.3.13.2 The Employer reserves the right to nominate an alternative bidder at the time when an award is made and in the event that a contract is terminated during the execution thereof, the LANGEBERG MUNICIPALITY may consider the award of the contract, or non-award, to the alternative bidder in terms of the procedures included its SCM Policy.

C.3.13.3 The Employer shall notify the successful tenderer in writing of the decision of the Employer's Bid Adjudication Committee to award the tender to the successful tenderer. No rights shall accrue to the successful tenderer in terms of this notice.

C.3.13.4 The Employer shall, at the same time as notifying the successful tenderer of the Bid Adjudication Committee's decision to award the tender to the successful tenderer, also give written notice to the other tenderers informing them that they have been unsuccessful.

C.3.17 Provide copies of the contract

Add the following after the first sentence:

The number of paper copies of the signed contract to be provided by the Employer is one.

Add the following Clauses after C.3.18:

C.3.19 Negotiations with preferred tenderers

The Employer may negotiate the final terms of a contract with tenderers identified through a competitive tendering process as preferred tenderers provided that such negotiation:

a) does not allow any preferred tenderer a second or unfair opportunity;
b) is not to the detriment of any other tenderer; and
c) does not lead to a higher price than the tender as submitted.

If negotiations fail to result in acceptable contract terms, the Municipal Manager (or his delegated authority) may terminate the negotiations and cancel the tender or invite the next ranked tenderer for negotiations. The original preferred tenderer should be informed of the reasons for termination of the negotiations. If the decision is to invite the next highest ranked tenderer for negotiations, the failed earlier negotiations may not be reopened by the LANGEBERG MUNICIPALITY.

Minutes of any such negotiations shall be kept for record purposes.

The provisions of this clause will be equally applicable to any invitation to negotiate with any other tenderers.

In terms of the PPPFA Regulations, 2017, tenders must be cancelled in the event that negotiations fail to achieve a market related price with any of the three highest scoring tenderers.

C.3.20 Claims arising after submission of tender

No claim for any extras arising out of any doubt or obscurity as to the true intent and meaning of anything shown on the Contract Drawings or contained in the Conditions of Contract, Scope of Work and Pricing Data, will be admitted by the Employer/Employer's Agent after the submission of any tender and the Tenderer shall be deemed to have:

a) inspected the Contract Drawings and read and fully understood the Conditions of Contract.
b) read and fully understood the whole text of the Scope of Work and Pricing Data and thoroughly acquainted himself with the nature of the works proposed and generally of all matters which may influence the Contract.
c) visited the site of the proposed works, carefully examined existing conditions, the means of access to the site, the conditions under which the work is to be done and acquainted himself with any limitations or restrictions that may be imposed by the Municipal or other Authorities in regard to access and transport of materials, plant and construction equipment to and from the site and made the necessary provisions for any additional costs involved thereby.
d) requested the Employer or his duly authorised agent to make clear the actual requirements of anything shown on the Contract Drawings or anything contained in the Scope of Work and Pricing Data, the exact meaning or interpretation of which is not clearly intelligible to the Tenderer.
   Before submission of any tender, the Tenderer should check the number of pages, and if any are found to be missing or duplicated, or the figures or writing indistinct, or if the Pricing Data contain any obvious errors, the tenderer must apply to the Employer/Employer's Agent at once to have the same rectified, as no liability will be admitted by the Employer/Employer's Agent in respect of errors in any tender due to the foregoing.
e) received any Addenda to the tender documents which have been issued in accordance with the Employer's Supply Chain Management Policy.

C.3.21 General supply chain management conditions applicable to tenders

In terms of its Supply Chain Management Policy the Employer may not consider a tender unless the provider who submitted the tender:

a) has furnished the Employer with that provider's:
   - full name;
   - identification number or company or other registration number; and
   - tax reference number and VAT registration number, if any;

b) has indicated whether:
   - the provider is in the service of the state, or has been in the service of the state in the previous twelve months;
   - the provider is not a natural person, whether any of the directors, managers, principal shareholders or stakeholders is in the service of the state, or has been in the service of the state in the previous twelve months;
   - whether a spouse, child or parent of the provider or of a director, manager, shareholder or stakeholder referred to above is in the service of the state, or has been in the service of the state in the previous twelve months; or

c) irrespective of the procurement process followed, the Employer is prohibited from making an award to:
   - a person who is in the service of the state;
   - a juristic entity of which any director, manager, principal shareholder or stakeholder is in the service of the state;
   - an advisor or consultant contracted with the Employer, or
   - a person, advisor or corporate entity involved with the bid specification committee, or a director of such corporate entity.

The Contract Price shall not be subject to any contract price adjustment, the rates and prices tendered in the bills of quantities shall. In this regard, tenderers shall complete Schedule 1, Part T2.2: Returnable Schedules: Compulsory Enterprise Questionnaire. Failure to complete this Schedule may result in the tender not being considered.

C.3.22 Combating abuse of the Supply Chain Management Policy

In terms of the Municipality's Supply Chain Management Policy, the Employer may reject the tender of any tenderer if that tenderer or any of its directors has:

a) failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than three months
b) failed, during the last five years, to perform satisfactorily on a previous contract with the Municipality or any other organ of state after written notice was given to that tenderer that performance was unsatisfactory.
c) abused the supply chain management system of the Employer or has committed any improper conduct in relation to this system.
d) been convicted of fraud or corruption during the past five years.
e) wilfully neglected, reneged on, or failed to comply with any government, municipal or other public sector contract during the past five years; or
f) been listed with the Register of Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004) or has been listed on National Treasury's database as a person or juristic entity prohibited from doing business with the public sector.

In this regard, tenderers shall complete Part T2.2: Returnable Schedules: Declaration of Tenderer's Past Supply Chain Management Practices (in terms of the Municipal Finance Management Act). Failure to complete this Schedule may result in the tender not being considered.

C.3.23 UIF payments

The Tenderer shall submit to the Employer a letter from the Industrial Council indicating his good standing with regard to UIF payments upon being requested to do so.

C.3.24 Price variations

Tender document or part thereof. Only those tenders that have been completed on the issued hard copy tender final and binding throughout the period of the contract. However, price adjustments for variations in the costs of special materials may be applicable where the Employer/Employer's Agent specifies such materials and the relevant information in the Contract Data.

Notwithstanding the above, if, as a result of any extension of time granted, the duration of the contract period exceeds one year, the contract will automatically be subject to contract price adjustment for that period by which the extended contract period exceeds such one year.

Adjustment in rates or prices shall be subject to the provisions of Part C1.2: Contract Data.

C.3.25 Requests for contract documents, or parts thereof, in electronic format

The Employer shall not formally issue tender documents in electronic format as contemplated in C.2.13.2 and C.2.13.3 and shall only issue tender documents in hardcopy. An electronic version of the issued tender

documents may be made available to the tenderer, upon written request in terms of this clause, subject to the following:

a) Electronic copies of the contract document, or parts thereof, will only be provided to tenderers who have been issued with the tender documents as contemplated in C.1.2 in hardcopy.
b) The electronic version shall not be regarded as a substitute for the issued tender documents.
c) The Employer shall not accept tenders submitted in electronic format. Tenderers may **not** complete and submit a printed copy of the electronic version of the tender document.
d) The Employer accepts no responsibility or liability arising from any reliance on or use of the electronic version provided in terms of this clause. The Employer further does not guarantee that the electronic version corresponds with the issued tender documents in all respects. Tenderers are alerted to the fact that electronic versions of the tender documents may not reflect any notices or addenda that amend the tender document.
e) Any non-compliance with these provisions, including effecting any unauthorised alterations to the tender document as contemplated in C.2.11, shall render the tender invalid. The Employer reserves the right to take any action against such tenderer allowed in law including, in circumstances where the tender had already been awarded, the right to cancel the contract.
f) In requesting the electronic version of the tender document or parts thereof, the tenderer is deemed to have read, understood, and accepted all of the above conditions.

C.3.26 Bidders who do not submit B-BBEE Status Level Verification Certificates or are non-compliant contributors to B-BBEE do not qualify for preference points for B-BBEE but should not be disqualified from the bidding process. They will score points out 80 for price only and zero (0) points out of 20 for B-BBEE. A trust, consortium or joint venture must submit a consolidated B-BBEE Status Level Verification Certificate for every separate bid

Annex C
(normative)
Standard Conditions of Tender

C.1 General

C.1.1 Actions

C.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in C.2 and C.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

C.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note:
1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.
2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

C.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

C.1.2 Tender Documents issued by the employer for the purpose of a tender offer are listed in the tender data.

C.1.3 Interpretation

C.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

C.1.3.2 These conditions of tender, the tender data and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

C.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

a) conflict of interest means any situation in which:
i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
ii) an individual or tenderer is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
iii) incompatibility or contradictory interests exist between an employee and the tenderer who employs that employee.
b) comparative offer means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;
c) corrupt practice means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
d) fraudulent practice means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels;

C.1.4 Communication and employer's agent
Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An employer may, prior to the award of the tender, cancel a tender if-

a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;
b) funds are no longer available to cover the total envisaged expenditure; or
c) no acceptable tenders are received.
d) there is a material irregularity in the tender process.

C.1.5.2 The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised

C.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General
Unless otherwise stated in the tender data, a contract will, subject to C.3.13, be concluded with the tenderer who in terms of C.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

C.1.6.2 Competitive negotiation procedure

C.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

C.1.6.2.2 All responsive tenderers or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the tender data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information.

Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

C.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their tender offer based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

C.1.6.2.4 The contract shall be awarded in accordance with the provisions of C.3.11 and C.3.13 after tenderers have been requested to submit their best and final offer.

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1
Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

C.1.6.3.2 Option 2

C.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

C.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data and award the contract in terms of these conditions of tender.

C.2 Tenderer's obligations

C.2.1 Eligibility

C.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.

C.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

C.2.2 Cost of tendering

C.2.2.1 Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

C.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

C.2.3 Check documents
Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

C.2.4 Confidentiality and copyright of documents
Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

C.2.5 Reference documents
Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

C.2.6 Acknowledge addenda
Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary, apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.

C.2.7 Clarification meeting
Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

C.2.8 Seek clarification
Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the tender data.

C.2.9 Insurance
Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.

C.2.10 Pricing the tender offer

C.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable fourteen (14) days before the closing time stated in the tender data.

C.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

C.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.

C.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

C.2.11 Alterations to documents
Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.

C.2.12 Alternative tender offers

C.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

C.2.12.2 Accept that an alternative tender offer must be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.

C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

C.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

C.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

C.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

C.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

C.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

C.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked “financial proposal” and place the remaining returnable documents in an envelope marked “technical proposal”. Each envelope shall state on the outside the employer’s address and identification details stated in the tender data, as well as the tenderer's name and contact address.

C.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

C.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

C.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

C.2.14 Information and data to be completed in all respects
Accept that tender offers, which do not provide all the data or information requested completely and, in the form, required, may be regarded by the employer as non-responsive.

C.2.15 Closing time

C.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

C.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

C.2.16 Tender offer validity

C.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.

C.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.

C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).

C.2.16.4 Where a tender submission is to be substituted, a tenderer must submit a substitute tender in accordance with the requirements of C.2.13 with the packages clearly marked as "SUBSTITUTE".

C.2.17 Clarification of tender offer after submission
Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause C.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.

C.2.18 Provide other material

C.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment.

Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

C.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

C.2.19 Inspections, tests, and analysis
Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.

C.2.20 Submit securities, bonds, and policies
If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies, and certificates of insurance required in terms of the conditions of contract identified in the contract data.

C.2.21 Check final draft
Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

C.2.22 Return of other tender documents
If so, instructed by the employer, return all retained tender documents within twenty-eight (28) days after the expiry of the validity period stated in the tender data.

C.2.23 Certificates
Include in the tender submission or provide the employer with any certificates as stated in the tender data.

C.3 The employer's undertakings

C.3.1 Respond to requests from the tenderer

C.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the Tender Data and notify all tenderers who collected tender documents.

C.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:
a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.3.3 Return late tender offers
Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

C.3.4 Opening of tender submissions

C.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

C.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, number of points claimed for its BBBEE status level and time for completion for the main tender offer only.

C.3.4.3 Make available the record outlined in C.3.4.2 to all interested persons upon request.

C.3.5 Two-envelope system

C.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

C.3.5.2 Evaluate functionality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any points claimed on BBBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

C.3.6 Non-disclosure
Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

C.3.7 Grounds for rejection and disqualification
Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

C.3.8 Test for responsiveness

C.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

a) complies with the requirements of these Conditions of Tender,
b) has been properly and fully completed and signed, and
c) is responsive to the other requirements of the tender documents.

C.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or
c) affect the competitive position of other tenderers presenting responsive tenders if it were to be rectified.

Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

C.3.9 Arithmetical errors, omissions, and discrepancies

C.3.9.1 Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

C.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with C.3.11 for:
a) the gross misplacement of the decimal point in any unit rate;
b) omissions made in completing the pricing schedule or bills of quantities; or c) arithmetic errors in:

(i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
(ii) the summation of the prices.

C.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.

C.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:
a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern, and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

C.3.10 Clarification of a tender offer
Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

C.3.11 Evaluation of tender offers
The Standard Conditions of Tender standardize the procurement processes, methods, and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer’s obligations in submitting a tender and the employer’s undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures.

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	Qualitative interpretation of goal
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.

The activities associated with evaluating tender offers are as follows:

a) Open and record tender offers received
b) Determine whether or not tender offers are complete
c) Determine whether or not tender offers are responsive
d) Evaluate tender offers
e) Determine if there are any grounds for disqualification
f) Determine acceptability of preferred tenderer
g) Prepare a tender evaluation report
h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

C.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

C.3.13 Acceptance of tender offer

Accept the tender offer; if in the opinion of the employer, it does not present any risk and only if the tenderer:

a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement;
b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract;
c) has the legal capacity to enter into the contract;
d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing;
e) complies with the legal requirements, if any, stated in the tender data; and
f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

C.3.14 Prepare contract documents

C.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:
a) addenda issued during the tender period,
b) inclusion of some of the returnable documents and
c) other revisions agreed between the employer and the successful tenderer.

C.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

C.3.15 Complete adjudicator's contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

C.3.16 Registration of the award

An employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the CIDB Register of Projects.

C.3.17 Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

C.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.

Annex G
(normative)
Alpha-numerics associated with the Contractor Grading Designations

In terms of Government Gazette 42561, dated 5 July 2019, the tender value range as set out in Table 8 in CIDB Regulation 17 has been amended. Table G1 below reflects the amended values that come into effect on 07 October 2019

Table G1: Contractor grading designations and associated parameters applicable after 7 October 2019

Contractor Grading Designation	Tender Value Range designation	Maximum value of contract that a contractor is considered capable of performing (R)
1 (class of construction works)	1	500 000
2 (class of construction works)	2	1 000 000
3 (class of construction works)	3	3 000 000
4 (class of construction works)	4	6 000 000
5 (class of construction works)	5	10 000 000
6 (class of construction works)	6	20 000 000
7 (class of construction works)	7	60 000 000
8 (class of construction works)	8	200 000 000
9 (class of construction works)	9	No Limit

Table G2: Classes of construction work

Description	Designation	Definition	Work types	Examples
Civil engineering works	**CE**	Construction works that are primarily concerned with materials such as s t e e l , concrete, earth and rock and their application in the development, extension, installation, maintenance, removal, renovation, alteration, or dismantling of building and engineering infrastructure	Water, sewerage, roads, railways, harbours and transport, urban development and municipal services	Structures such as a cooling tower, bridge, culvert, dam, grand stand, road, railway, reservoir, runway, swimming pool, silo or tunnel The results of operations such as dredging, earthworks and geotechnical processes. Township services, water treatment and supply, sewerage works, sanitation, soil conservation works, irrigation works, storm-water and drainage works, coastal works, ports, harbours, airports and pipelines.
Electrical engineering works (Infrastructure)	**EP**	Construction works that are primarily concerned with development, extension, installation, removal, renovation, alteration or dismantling of engineering infrastructure: a) relating to the generation, transmission and distribution of electricity; or b) which cannot be classified as EB.	Electrical power generation, transmission, control and distribution equipment and systems.	Power generation Street and area lighting Substations and protection systems Township Reticulations Transmission Lines Supervisory control and data acquisition systems
Electrical engineering works (buildings)	**EB**	Construction works that are primarily concerned with the installation, extension, modification or repair of electrical installations in or on any premises used for the transmission of electricity from a point of control to a point of consumption, including any article forming part of such an installation	All electrical equipment forming an integral and permanent part of buildings and/or structures, including any wiring, cable jointing and laying and electrical overhead line construction	Electrical installations in buildings Electrical reticulations within a plot of land (erf) or building site Standby plant and uninterrupted power supply Verification and certification of electrical installations on premises
General building works	**GB**	Construction works that: a) Are primarily concerned with the development, extension, installation, renewal, renovation, alteration, or b) dismantling of a permanent shelter for its occupants or contents; or cannot be categorized in terms of the definitions provided for civil engineering works, electrical engineering works, mechanical engineering works, or specialist works.	Buildings and ancillary works other than those categorised as being: a) civil engineering works; b) electrical engineering works; c) mechanical engineering works; or d) specialist works.	Buildings for domestic, industrial, institutional or commercial occupancies Car ports Fences other than classified as SS Stores Walls

Description	Designation	Definition	Work types	Examples
Mechanical engineering works	**ME**	Construction works that are primarily concerned with the development, extension, installation, removal, alteration, renewal of engineering infrastructure for gas transmission a n d distribution, solid w a s t e disposal, heating, ventilation and cooling, chemical works, metallurgical works, manufacturing, food processing and, materials handling	Machine systems including those relating to the environment of building interiors. a) gas transmission and distribution systems b) pipelines c) solid waste disposal d) materials handling, lifting machinery, heating, ventilation and cooling, pumps, e) continuous process systems f) chemical works, metallurgical works, manufacturing, food processing such as that in concentrator machinery and apparatus, oil and gas wells, smelters, cyanide plants, acid plants, metallurgical machinery, equipment and apparatus, and works necessary for the beneficiation of metals, minerals, rocks, petroleum and organic substances or other chemical	Air-conditioning and mechanical ventilation Boiler installations and steam distribution Central heating Centralised hot water generation Cranes and hoists Dust and sawdust extraction Compressed air, gas and vacuum installations Conveyor and materials handling installations Continuous process systems involving chemical works, metallurgical works, oil and gas wells, acid plants, metallurgical machinery, equipment and apparatus, and works necessary for the beneficiation of metals, minerals, rocks, petroleum and organic substances and other chemical processes Kitchen equipment Laundry equipment Lift installations and escalators Refrigeration and cold rooms Waste handling systems (including compactors)
Specialist works	**SB**	A subset of construction works identified and defined by the Board that involves specialist capabilities for its execution	The extension, installation, repair, maintenance or renewal, or removal, of asphalt	
	SC		The development, extension, installation, removal, and dismantling, as relevant, associated with building excavations, shaft sinking and lateral earth support	
	SD		The development, extension, installation, repair, renewal, removal, or alteration of corrosion protection systems (cathodic, anodic and electrolytic)	
	SE		Demolition of buildings and engineering infrastructure and blasting	
	SF		The development, extension, installation, renewal, removal, renovation, alteration or dismantling of fire prevention and protection infrastructure (drencher and sprinkler systems and fire installation)	
	SG		The development, extension, installation, renewal, removal, renovation, alteration or dismantling of glazing, curtain walls and shop fronts	
	SH		The development, extension, installation, maintenance, renewal. removal, alteration or dismantling, as relevant, of landscaping, irrigation and horticultural works	
	SI		The development, extension, installation, repair, maintenance, renewal. removal, renovation, alteration or, dismantling of lifts, escalators, travellators and hoisting machinery	

	SJ		The development, installation, removal, or dismantling, as relevant, of piles and other specialized foundations for buildings and structures	
Description	**Designation**	**Definition**	**Work types**	**Examples**
	SK	A subset of construction works identified and defined by the Board that involves specialist capabilities for its execution	The installation, renewal, removal, alteration or dismantling, as relevant, road markings and signage	
	SL		The development, extension, installation, renewal. removal, renovation, alteration or dismantling of structural steelwork and scaffolding	
	SM		Timber buildings and structures	
	SN		The extension, installation, repair, maintenance, renewal, removal, renovation or alteration, as relevant, of the waterproofing of basements, roofs and walls using specialist systems.	
	SO		The development, extension, installation, renewal, removal, alteration or dismantling or demolition of water installations and soil and waste water drainage associated with buildings (wet services, plumbing)	
	SQ		The development, extension, installation, repair, removal, alteration, dismantling or demolition of precast concrete or steel fencing	

Part T2: Returnable Documents

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T2.1 List of Returnable Documents

The tenderer must complete the following Returnable Documents in non-erasable **black ink**:

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T2.2 Returnable Schedules

Schedule 1: Compulsory Enterprise questionnaire

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise: …

Section 2: VAT registration number, if any: …

Section 3: CIDB registration number, if any: …

Section 4a: National Treasury Central Supplier Database registration number: … … … … … … … … … … … …

Section 4b: SARS Tax Compliance Status PIN: …

Section 5: Particulars of sole proprietors and partners in partnerships

Name*	**Identity number***	**Personal income tax number***

***** Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

Section 6: Particulars of companies and close corporations

Company registration number**… …**

Close corporation number**… …**

Tax reference number**… …**

Section 7: MBD4 – Attached to this document

Section 8: MBD6 – Attached to this document

Section 9: MBD8 – Attached to this document

Section 10: MBD9 – Attached to this document

Section 11: Foreign Bidding Suppliers	
Is tenderer the accredited representative in South Africa for the Goods / Services / Works offered?	☐Yes ☐No If yes, enclose proof

Is tenderer a foreign based supplier for the Goods / Services / Works offered?	☐Yes ☐No If yes, answer the Questionnaire to Bidding Foreign Suppliers (below)
Questionnaire to Bidding Foreign Suppliers	
a) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐Yes ☐No
b) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐Yes ☐No
c) Does the tenderer have a permanent establishment in the Republic of South Africa?	☐Yes ☐No
d) Does the tenderer have any source of income in the Republic of South Africa?	☐Yes ☐No
e) Is the tenderer liable in the Republic of South Africa for any form of taxation?	☐Yes ☐No

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;

ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 or Database of Restricted Suppliers;

iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and

v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

LANGEBERG MUNICIPALITY

TENDER NO. T22/2022

CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

Schedule 2: Clarification meeting attendance certificate

Refer to tender conditions C.2.7 in section T1.2 Tender data

This is to certify that I/we, (the representative(s)) .....

representing (the tenderer) .....

of address .....

.....

.....

.....

Telephone and cellphone number .....

fax number .....

on (date) .....

attended the clarification meeting, have examined the Site of the Works and its surroundings for which I/we am/are submitting this Tender and have, so far as is practicable, familiarized myself/ourselves with all the information, risks, contingencies and other circumstances which may influence of affect my/our Tender.

Attendance of the above person(s) at the Clarification Meeting is confirmed by:

EMPLOYER'S AGENT / REPRESENTATIVE: . (Name) ……

SIGNED BY EMPLOYER'S AGENT / REPRESENTATIVE: ……

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 3: Certificate of Independent Tender determination (MBD9)

I, the undersigned, in submitting this tender for TENDER NO. **T22/2022: CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU**

in response to the invitation for the tender made by the Langeberg Municipality, do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of _____ that:
(Name of Tenderer)

1. I have read, and I understand the contents of this Certificate;
2. I understand that this tender will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the tenderer to sign this Certificate, and to submit this tender on behalf of the tenderer;
4. Each person whose signature appears on this tender has been authorized by the tenderer to determine the terms of, and to sign, the tender, on behalf of the tenderer;
5. For the purposes of this Certificate and this tender, I understand that the word "competitor" shall include any individual or organization, other than the tenderer, whether affiliated with the tenderer or not, who:
   (a) has been requested to submit a tender in response to this invitation to tender;
   (b) could potentially submit a tender in response to this invitation to tender, based on their qualifications, abilities, or experience; and
   (c) provides the same goods and services as the tenderer and/or is in the same line of business as the tenderer;
6. The tenderer has arrived at this tender independently from, and without consultation, communication, agreement, or arrangement with any competitor. However, communication between partners in a joint venture or consortium[1] will not be construed as collusive tendering;
7. In particular (without limiting the generality of paragraph 6 above) there has been no consultation, communication, agreement, or arrangement with any competitor regarding:
   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation);
   (c) methods, factors, or formulas used to calculate prices;
   (d) the intention or decision to submit or not to submit a tender;
   (e) the submission of a tender which does not meet the specifications and conditions of the tender; or
   (f) tendering with the intention not to win the tender;
8. In addition, there have been no consultations, communications, agreements, or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this invitation to tender relates;
9. The terms of this tender have not been, and will not be, disclosed by the tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening or of the awarding of the contract;
10. I am aware that , in addition and without prejudice to any other remedy provided to combat any restrictive practices related to tenders and contracts, tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

[1]Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill, and knowledge in an activity for the execution of a contract.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 4: Certificate of Authority (for Companies/Joint Ventures/etc.)

Assurance shall be given at the time of submission of the tender that the tender has been signed by someone properly authorised thereto by resolution of the Directors, Members or Partners. Tenderers shall submit with their tenders the following information:

Single Company, Close Corporation or Partnership

Signatories for companies shall confirm their authority by attaching to this form a copy of the relevant resolution of the board of directors, duly signed and dated.

By resolution of the board of directors taken on (*Date*) .....
Mr/Ms (*Print Name*) .....
has been duly authorized to sign all documents in connection with this tender / contract on behalf of .....
(*Print Company Name*).....
.....
Signed on behalf of Company .....
In his/her capacity as.....
Date.....

Joint Ventures

We, the undersigned, are submitting this tender offer in joint venture and hereby authorize;
Mr/Ms ..... , authorised signatory
of the company, close corporation, or partnership.....
acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

Date.....

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner		Signature, Name &Designation
		Signature, Name &Designation
		Signature, Name &Designation

Note: A copy of the Joint Venture Agreement, showing clearly the **percentage contribution of each partner** to the joint venture, shall be appended to this schedule. Lead partner need to be clearly stated.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 5: Declaration of Tenderer's past Supply Chain Management practices (MBD8)

Where the entity tendering is a joint venture, each party to the joint venture must sign a declaration in terms of the Municipal Finance Management Act, 56 of 2003, and attach it to this schedule.

1 The tender offer of any tenderer may be rejected if that tenderer or any of its directors/members have:

a) abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
b) been convicted for fraud or corruption during the past five years;
c) willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
d) been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

2 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
2.1	Is the Tenderer or any of its directors listed on the National Treasury's Database of Restricted Suppliers as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied). **The Database of Restricted Suppliers now resides on the National Treasury's website www.treasury.gov.za and can be accessed by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
2.1.1	If so, furnish particulars:		
2.2	Is the Tenderer or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act, 12 of 2004? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
2.2.1	If so, furnish particulars:		
2.3	Was the Tenderer or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
2.3.1	If so, furnish particulars:		
2.4	Does the Tenderer or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
2.4.1	If so, furnish particulars:		

2.5	Was any contract between the Tenderer and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
2.5.1	If so, furnish particulars:		

I, _____, the undersigned,
(full name in block letters)

certify that the information furnished on this declaration form is true and correct, and accept that, in addition to cancellation of a contract, action may be taken against me should this declaration prove to be false.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 6: Declaration of interest – State Employees (MBD 4 amended)

- No bid will be accepted from:
  - 1.1 persons in the service of the state[1], or
  - 1.2 if the person is not a natural person, of which any director, manager or principal shareholder[2] or stakeholder is in the service of the state, or
  - 1.3 from persons, or entities of which any director, manager or principal shareholder or stakeholder, has been in the service of the Langeberg Municipality during the twelve (12) months after the Langeberg Municipality employee has left the employ of the Langeberg Municipality, or
  - 1.4 from an entity who has employed a former Langeberg Municipality employee who was at a level of T14 of higher at the time of leaving the LANGEBERG Municipality's employ and involved in any of the Langeberg Municipality's bid committees for the bid submitted, if:
    - 1.4.1 the Langeberg Municipality employee left the Langeberg Municipality's employment voluntarily, during a period of twelve (12) months after the Langeberg Municipality employee has left the employ of the Langeberg Municipality;
    - 1.4.2 the Langeberg Municipality employee left the Langeberg Municipality's employment whilst facing disciplinary action by the Langeberg Municipality, during a period of twenty-four (24) months after the Langeberg Municipality employee has left the employ of the Langeberg Municipality, or any other period prescribed by applicable legislative provisions, after having left the Langeberg Municipality's employ.

- Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the tenderer or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Full Name of tenderer or his or her representative:……

3.2 Identity Number:……..

3.3 Position occupied in the Company (director, trustee, shareholder[2]):……

3.4 Company or Close Corporation Registration Number:……..…….

3.5 Tax Reference Number:……

3.6 VAT Registration Number:……

3.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in <u>paragraph 4</u> below.

3.8 Are you presently in the service of the state? **YES / NO**

3.8.1 If yes, furnish particulars:

……
…
……
…
……
…

3.9 Have you been in the service of the state for the past twelve months? **YES / NO**

3.9.1 If yes, furnish particulars:

……
…
……
…
……
…

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.10.1 If yes, furnish particulars:

……
…
……
…
……
…
……
…

3.11 Are you, aware of any relationship (family, friend, other) between any other supplier and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.11.1 If yes, furnish particulars

……
…
……
…
……
…
……
…

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.12.1 If yes, furnish particulars:

……
…
……
…
……
…
……
…

3.13 Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.13.1 If yes, furnish particulars:

……
…
……
…
……
…
……
…

13.4 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract? **YES / NO**

3.14.1 If yes, furnish particulars:

……
…
……
…
……
…
……
…

3.15 Have you, or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company been in the service of the LANGEBERG Municipality in the past twelve months? **YES / NO**

3.15.1 If yes, furnish particulars:

……
…
……
…
……
…
……
…

3.16 Do you have any employee/s who was/were in the service of the LANGEBERG Municipality at a level of T14 or higher at the time they left the employ of the LANGEBERG Municipality, and who was involved in any of the LANGEBERG Municipality's bid committees for this bid? **YES / NO**

3.16.1 If yes, furnish particulars:

……
…
……
…
……
…

4. Full details of directors / trustees / members / shareholders.

Full Name	Identity Number	State Employee Number

If the above table does not sufficient to provide the details of all directors / trustees / shareholders, please append full details to the tender submission.

The tenderer hereby certifies that the information set out in this schedule and/or attached thereto is true and correct, and acknowledges that failure to properly and truthfully complete this schedule may result in the tender being disqualified, and/or (in the event that the tenderer is successful) the cancellation of the contract, restriction of the tenderer or the exercise by the employer of any other remedies available to it

[1] MSCM Regulations: "in the service of the state" means to be –

- ***(a) a member of –***
  - ***(i) any municipal council;***
  - ***(ii) any provincial legislature; or***
  - ***(iii) the national Assembly or the national Council of provinces;***
- ***(b) a member of the board of directors of any municipal entity;***
- ***(c) an official of any municipality or municipal entity;***
- ***(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);***
- ***(e) an executive member of the accounting authority of any national or provincial public entity; or***
- ***(f) an employee of Parliament or a provincial legislature.***

***[2] Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company*.**

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 7: Authorisation for the deduction of outstanding amounts owed to the Langeberg Municipality

To: **THE MUNICIPAL MANAGER, LANGEBERG MUNICIPALITY**

From: _____
(Name of tenderer)

The tenderer:

a) hereby acknowledges that according to SCM Regulation 38(1)(d)(i) the Municipal Manager may reject the tender of the tenderer if any municipal rates and taxes or municipal service charges owed by the tenderer (or any of its directors/members/partners) to the LANGEBERG MUNICIPALITY, or to any other municipality or municipal entity, are in arrears for more than 3 (three) months; and
b) therefore hereby agrees and authorises the LANGEBERG MUNICIPALITY to deduct the full amount outstanding by the Tenderer or any of its directors/members/partners from any payment due to the tenderer; and
c) confirms the information as set out in the tables below for the purpose of giving effect to b) above;
d) The tenderer hereby certifies that the information set out in this schedule and/or attached hereto is true and correct, and acknowledges that failure to properly and truthfully complete this schedule may result in steps being taken against the tenderer, the tender being disqualified, and/or (in the event that the tenderer is successful) the cancellation of the contract and/or steps in terms of abuse of the Supply Chain Management Policy.

Physical **Business** address of the Tenderer	Municipal Account number(s)

If there is not enough space for all the names, please attach the additional details to the Tender Document

Name of Director / Member / Partner	Identity Number	Physical **residential** address of Director / Member / Partner	Municipal Account number(s)

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 8: Declaration in respect of compliance with labour legislation

Tenderers must be registered with the relevant Bargaining Council as contained in the tender conditions and must append to this schedule a certificate of compliance / letter of good standing in terms of the relevant Government Gazette that indicates compliance / validity at the time of tender award.

Each party to a Consortium/Joint Venture shall append separate certificates in the above regard.

Declaration in respect of labour legislation

The tenderer, by signing this schedule, declares that it will comply with all labour legislation, as may be applicable.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 9: Declaration for procurement above R10 million (MBD5)

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire:

1. Are you by law required to prepare annual financial statements for auditing?***YES / NO**

    1.1. If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.
    ……
    …
    ……
    …

2. Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?***YES / NO**

    2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.

    2.2 If yes, provide particulars.
    ……
    …
    ……
    …

3. Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?***YES / NO**

    3.1 If yes, furnish particulars
    ……
    …
    ……
    …

4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?***YES / NO**

    4.1 If yes, furnish particulars
    ……
    …
    ……
    …

** Delete if not applicable*

CERTIFICATION:
I, THE UNDERSIGNED (NAME)……
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 10:Confirmation of Central Supplier Database (CSD) registration

CENTRAL SUPPLIER DATABASE REGISTRATION		
COMPANY NAME	**REGISTERED YES/NO**	**REGISTRATION NUMBER IF APPLICABLE**

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 11:Tax Clearance Certificate

SARS Tax Compliance Status PIN	
COMPANY NAME	**SARS Tax Compliance Status PIN**

Bidders are required to submit their unique personal identification number (pin) issued by SARS to enable the organ of state to view the taxpayers' profile and tax status.

Application for the tax compliance status (TCS) certificate or pin may also be made via e-filing. In order to use this provision, taxpayers will need to register with SARS as e-filers through the website www.sars.gov.za.

Bidders may also submit a printed TCS certificate together with the bid (valid and original). In Bids where Consortia/Joint Venture/Sub-contractors are involved each party must submit a separate and Original Valid Tax Clearance Certificate.

Failure to submit proof of good standing with SARS (Tax Clearance Certificate) will result in the invalidation of the tender/bid. **Certified copies of the Tax clearance Certificate will not be acceptable.**

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 12:Confirmation of Contractor Enterprise Registration

CIDB REGISTRATION

We hereby confirm our registration on Construction Industry Development Board (CIDB) Contractor Database:

COMPANY NAME	CIDB CONTRACTOR GRADING DESIGNATION	CRS REGISTRATION NUMBER AS APPLICABLE

I/We attach a printed copy of the Active Contractor's Listing off the CIDB website www.cidb.org.za as documentary proof of the Contractor's Registration issued by the Construction Industry Development Board (CIDB) to this schedule.

Where a tenderer satisfies CIDB Contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.

Failure to affix such documentation as proof of Contractor Enterprise registration as prescribed to this Schedule shall result in this tender not being further considered for the award of the Contract.

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 13: Tenderer's banking details

Notes to tenderer:

1. **The tenderer shall attach to this form a letter from the bank at which he declares he conducts his account. The contents of the bank's letter must state the credit rating that it, in addition to the information required below, accords to the tenderer for the business envisaged by this tender. The Employer will also do an independent Bank Rating investigation via the Employer's Agent's independent source.**
2. **The tenderer's banking details as they appear below shall be completed.**
3. **If the tenderer is a joint venture enterprise, details of all the members of the joint venture shall be similarly provided and attached to this form. The nominated bank account that will be used for this project need to be completed below. Only one bank account may be used, shown below.**

The method used to obtain a bank rating is an online service provided by ABSA bank. If the tendered contract period is three months or more, an average 3-month cash flow for each tender submitted will be calculated and used as input into the online service. This process ensure that an equivalent method is used when determining the bank ratings of each tenderer. The Employer will obtain codes from the relevant independent financial institutions. The evaluation of your offer will be based on the Bank Rating received from our own independent investigation and not the Bank Rating attached by the tenderer himself. This is to ensure a fair and equal evaluation of bids.

Bidders must provide their banking details below.

The tenderer shall provide the following:

Name of Account Holder: .....

Account Number: .....

Bank name: .....

Branch Number: .....

Bank and branch contact details .....

.....

.....

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 14:Schedule of work experience of Tenderer

The tenderer shall insert in the spaces provided below a list of completed contracts and those currently being undertaken with a scope of similar nature. This information is deemed to be material to the award of the Contract.

Projects of a similar scope and nature is regarded as: Structural steel structures or brick and mortar buildings or refurbishment of existing brick and mortar buildings with a project value equal to or higher than the sum tendered

Please note that no tenderer will be contacted to clarify any experience or construction equipment, or plant submitted with this bid. If insufficient information is shown, the tenderer will not be contacted for clarification.

The information provided in this schedule will be utilized to calculate the pre-qualification functionality scores. Tenderers must have successfully completed (please note that current incomplete projects will not be included in the evaluation) at least 5 projects of a similar scope and nature in the last 10 years to score full marks on this criterion.

A detailed list of successfully completed projects must be completed below (or attached to this schedule).

COMPLETED SIMILAR CONTRACTS				
EMPLOYER (NAME, TEL No AND FAX No)	CONSULTING ENGINEER (NAME, TEL No AND FAX No)	NATURE OF WORK	VALUE OF WORK R(m)	DATE COMPLETED

CURRENT SIMILAR PROJECTS				
EMPLOYER (NAME, TEL No AND FAX No)	CONSULTING ENGINEER (NAME, TEL No AND FAX No)	NATURE OF WORK	VALUE OF WORK R(m)	DATE COMPLETED

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 15:Details of qualifications and experience of staff

Tenderers shall set out in the Schedule hereunder details of the Construction Manager and General Foreman's experience in work of a similar nature to that for which their Tender is submitted. Detailed, project specific CV's to be included in this Schedule. Failure to do so during tender phase will lead to disqualification of tenderer.

Construction managers must have successfully **completed** (please note that current projects will not be included in the evaluation) at least 5 projects of a similar scope and nature in the last 10 years to score full marks on this criterion. Projects of a similar scope and nature is regarded as: Structural steel structures or brick and mortar buildings or refurbishment of existing brick and mortar buildings with a project value equal to or higher than the sum tendered. Please note that no tenderer will be contacted to clarify any experience or construction equipment, or plant submitted with this bid. If insufficient information is shown, the tenderer will **not** be contacted for clarification.

CONSTRUCTION MANAGER/SITE AGENT	**NAME**: ……			
CLIENT/CLIENT AGENT'S NAME AND CONTACT DETAILS	**NATURE OF WORK**	**POSITION HELD**	**VALUE OF WORK**	**YEAR COMPLETED**

GENERAL FOREMAN/CONSTRUCTION SUPERVISOR	NAME: ……			
CLIENT/CLIENT AGENT'S NAME AND CONTACT DETAILS	**NATURE OF WORK**	**POSITION HELD**	**VALUE OF WORK**	**YEAR COMPLETED**

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 16: Schedule of construction equipment

The tenderer shall state below what construction equipment will be available for this Contract. The tenderer shall differentiate, if applicable, between construction equipment immediately available and construction equipment which will become available by virtue of outstanding orders, and indicate what further construction equipment will be acquired or hired for the work should he be awarded the Contract.

CONSTRUCTION EQUIPMENT IMMEDIATELY AVAILABLE

DESCRIPTION, SIZE, CAPACITY	NUMBER

CONSTRUCTION EQUIPMENT ON ORDER

(State details of arrangements made, with delivery dates)

DESCRIPTION, SIZE, CAPACITY	NUMBER

CONSTRUCTION EQUIPMENT THAT WILL BE ACQUIRED OR HIRED

(State details of delivery arrangements)

DESCRIPTION, SIZE, CAPACITY	NUMBER

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 17:Preliminary programme (for information purposes only)

The tenderer shall attach a preliminary programme, reflecting the proposed sequence and tempo of execution of the various activities comprising the work for the Contract, to this page.

This programme shall be in the form of a bar chart (Gantt chart) or similar acceptable time/activity form reflecting the proposed sequence and tempo of the various activities and the quantities that will be carried out every week under each of the elements, comprising the work for this contract. The programme shall also indicate the point where the tenderer intends to commence work operations and the direction in which the work will proceed. The working hours shall be indicated.

The tenderer shall also take into account the additional requirements stated in the Project Specifications when drawing up the programme.

Details of the preliminary programme shall be appended to this Schedule.

Number of sheets, appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 18:Proposed work plan

The tenderer shall append their proposed work plan to this Schedule.

It should be noted that while a programme may form part of the required work plan, more than a programme is expected in response to this requirement. The work plan must indicate the approach and methodology that the tenderer intends following to reach the required outcomes. The work plan must show that the tenderer has comprehended the Scope of Work and has good insight as to what actions or activities are required to comply with the Employer's objectives.

The proposed work plan must not exceed two A4 pages.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 19:Schedule of estimated monthly expenditure

The tenderer shall state his estimated expenditure indicating the value of work done and materials not yet built into the Permanent Works for each month of the Contract period which he estimates will arise based on his preliminary programme and tendered rates, as set out in the table below. The total of the monthly amounts shall be equal to the tender sum.

MONTH	VALUE
1.	R
2.	R
3.	R
4.	R
SUBTOTAL	R
CONTINGENCIES (5%)	R
SUBTOTAL	R
VAT (15%)	R
TOTAL	R (INCLUDING VAT @ 15%)

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 20: Schedule of sub-contractors

We notify you that it is our intention to employ the following sub-contractors for work (excluding work covered by provisional sums and contingencies) in this contract.

Acceptance of this tender shall not be construed as approval of all or any of the listed sub-contractors. Should any of the sub-contractors not be approved subsequent to acceptance of the tender, this shall in no way invalidate the contract, and the tendered unit rates for the various items making up the work activities shall remain final and binding.

Local Sub-Contractors must be utilized.

SUB-CONTRACTORS		
Sub-contractor's name	Work activities to be undertaken by the Sub-contractor	Estimated value of work (Rand)

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 21:Health and Safety plan

Tenderers are referred to the requirements of Clause C.2.18.4 in Part T1.2 Tender Data and shall append the required draft Health and Safety Plan to this Schedule.

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 22:Proposed deviations and qualifications by tenderer

The Tenderer should record any **proposed** deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such proposed deviations and qualifications in a covering letter attached to his tender and reference such letter in this schedule. Any proposed deviations or qualifications contained in a covering letter which is not referenced in this schedule will not be considered.

The Tenderer's attention is drawn to clause C.3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the Employer's handling of material deviations and qualifications.

If no deviations or qualifications are proposed, the schedule hereunder is to be marked NIL and signed by the Tenderer.

PAGE	CLAUSE OR ITEM	PROPOSED DEVIATION OR QUALIFICATION

Number of sheets appended by the tenderer to this Schedule ..... (If nil, enter NIL).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 23: Functionality criteria

The Tenderer shall provide information for the functionality criteria listed in this Returnable Schedule.

The Tenderer's attention is drawn to clause C.2.1.4.3 in the Tender Data for a more detailed explanation of the functionality criteria given in the table below and how the score will be calculated (with applicable values).

Please note that points scored for Quality (functionality) will not have an influence on the total tender evaluation points and will therefore not affect the ranking of the tenderers, it will only be regarded as a pre-qualification. The minimum points required to be eligible to tender is 70 out of a 100.

THE CRITERIA to be applied in evaluating the proposal is set out in the table below:

Calculate the points for functionality according to the following formula:

$$P_s = S_o/M_s \times A_p$$

Where P_s = Percentage scored for functionality by bid under consideration
S_o = Total score of bid/proposal under consideration
M_s = Maximum possible score = 500
A_p = percentage allocated for functionality = 100

Total points by bidder on functionality:

i) $P_{s(Criterion\ 1)}$ = (Indicator allocated/scored out of 5) x weight
ii) $P_{s(Criterion\ 2)}$ = (Indicator allocated/scored out of 5) x weight
$P_{s(TOTAL)} = [(P_{s(Criterion\ 1)} + P_{s(Criterion\ 2)}) / 5] \times 100$

Criteria can be amended to suit project complexity or omitted if not applicable.

Criterion	Weight
1) Relevant Experience (Returnable Schedule 14)	50%
2) Construction manager Experience (Returnable Schedule 15)	50%
Total	**100%**

EVALUATION CRITERION 1

Tenderers must have successfully **completed** (please note that current projects will not be included in the evaluation) at least 5 projects of a similar scope and nature in the last 10 years to score full marks on this criterion. Refer to the table below for a measurement of how points will be awarded against this criterion.

A detailed list of successfully completed projects must be completed in/attached to **Schedule 14**.

Projects of a similar scope and nature is regarded as:
Construction of structural steel structures or brick and mortar buildings or refurbishment of existing brick and mortar buildings with a project value equal to or higher than the sum tendered. Please note that no tenderer will be contacted to clarify any experience or construction equipment, or plant submitted with this bid. If insufficient information is shown, the tenderer will **not** be contacted for clarification.

5. RELEVANT EXPERIENCE	
INDICATOR	**Evaluation Criteria for Relevant Experience:** (number of similar projects completed by the contractor in the last 10 years)
0	The tenderer has completed zero projects in the last 10 years
1	The tenderer has completed only 1 project in the last 10 years
2	The tenderer has completed exactly 2 projects in the last 10 years
3	The tenderer has completed exactly 3 projects in the last 10 years
4	The tenderer has completed exactly 4 projects in the last 10 years
5	The tenderer has completed 5 or more projects in the last 10 years

EVALUATION CRITERION 2

Detailed, project specific CV's to be included in **Schedule 15** of the Returnable Documents. Failure to do so during tender phase will lead to disqualification of tenderer.

Construction managers must have successfully **completed** (please note that current projects will not be included in the evaluation) at least 5 projects of a similar scope and nature in the last 10 years to score full marks on this criterion. Refer to the table below for a measurement of how points will be awarded against this criterion.

Projects of a similar scope and nature is regarded as:

The Construction of structural steel structures or brick and mortar buildings or refurbishment of existing brick and mortar buildings with a project value equal to or higher than the sum tendered. Please note that no tenderer will be contacted to clarify any experience or construction equipment, or plant submitted with this bid. If insufficient information is shown, the tenderer will **not** be contacted for clarification.

If, during construction, the contractor wishes to replace the construction manager, the contractor will apply in writing to the Engineer as per clause 4.12 of the GCC 2015. Only similarly experienced and competent construction managers will be considered.

2. CONSTRUCTION MANAGER	
INDICATOR	**Evaluation Criteria for Construction manager:** (number of similar projects completed by the Construction manager in the last 10 years)
0	The Construction manager has completed zero projects in the last 10 years
1	The Construction manager has completed only 1 project in the last 10 years
2	The Construction manager has completed exactly 2 projects in the last 10 years
3	The Construction manager has completed exactly 3 or more projects in the last 10 years
4	The Construction manager has completed exactly 4 or more projects in the last 10 years
5	The Construction manager has completed 5 or more projects in the last 10 years

The functionality proposal will be evaluated individually on score sheets, by a representative evaluation panel according to the evaluation criteria indicated above. All service providers who scored less than 70 out of 100 points for functionality will not be considered further. At least 3 evaluators will evaluate the quality schedules separately.

NB: Points scored for Quality (functionality) will not have an influence on the total tender evaluation points.

Where the entity tendering is a Joint Venture the tender must be accompanied by a statement describing exactly what aspects of the work will be undertaken by each party to the joint venture (appended to Schedule 4, Part T2.2: Returnable Schedules).

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Schedule 24:Preference Schedule: Measuring B-BBEE in the construction sector (2017)

Preference schedule to be used in terms of the amended codes for measuring Broad-Based Black Economic Empowerment in the construction sector (2017)

1 Definitions

The following definitions shall apply to this schedule:

All applicable taxes: Includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

Applicable Code: Shall be either the Amended Codes of Good Practise (published on 11 October 2013) or Sector Specific Codes as indicated in the tender conditions

B-BBEE: Broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act.

B-BBEE status level of contributor: The B-BBEE status of an entity in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

Bid (Tender): A written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals.

Black Designated Groups: The meaning assigned to it in the codes of good practice issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act, 2003, (Act 53 of 2003).

Black People: The meaning assigned to it in section 1 of the Broad-Based Black Economic Empowerment Act.

Broad-Based Black Economic Empowerment Act: The Broad-Based Black Economic Empowerment Act, Act 53 of 2003.

Consortium or Joint Venture: An association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

Contract The agreement that results from the acceptance of a bid by an organ of state.

Co-operative: A co-operative registered in terms of section 7 of the Co-operatives Act, 2005 (Act no. 14 of 2005).

Designated Group: Black designated groups, black people, women, people with disabilities or small enterprises as defined in section 1 of the National Small Enterprises Act, 1996 (act no. 102 of 1996)

Designated Sector: A sector, sub-sector or industry or product that has been designated in terms of any relevant regulation of the Preferential Procurement Regulations, 2017.

Exempted Micro Enterprise (EME): An exempted micro enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

Firm Price: The price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract.

Functionality: The ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.

Military Veteran: The meaning assigned to it in section 1 of the Military Veterans Act, 2011 (Act No. 18 of 2011).

National Treasury: The meaning assigned to it in section 1 of the Public Finance Management Act, 1999 (Act No. 18 of 1999.

Non-firm prices: All prices other than “firm” prices.

Person: Includes a juristic person.

People with disabilities: The meaning assigned to it in section 1 of the Employment Equity Act, 1998 (Act No. 55 of 1998).

Price: Includes all applicable taxes less unconditional discounts.

Proof of B-BBEE status level of contributor: The B-BBEE status level certificate issued by an authorised body or person, a sworn affidavit as prescribed by the B-BBEE Codes of good Practice or any other requirement prescribed in terms of the Broad-Based Black Economic Empowerment Act.

Qualifying Small Enterprise (QSE): A qualifying small enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

Rand Value: means the total estimated value of a contract in Rand, calculated at the time of bid invitations.

Rural Area: A sparsely populated area in which people farm or depend on natural resources, including villages and small towns that are dispersed through the area or an area including a large settlement which depends on migratory labour and remittances and government social grants for survival, and may have a traditional land tenure system.

Stipulated Minimum Threshold: The minimum threshold stipulated in terms of any relevant regulation of the Preferential Procurement Regulations, 2017.

Sub-contract: The primary contractor's assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract.

The Act: The Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000).

Total Revenue: Bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007.

Township: An urban living area that at any time from the late 19th century until 27 April 1994, was reserved for black people, including areas developed for historically disadvantaged individuals post 27 April 1994.

Treasury: The meaning assigned to it in section 1 of the Public Finance Management Act, 1999 (Act No. 18 of 1999).

Trust: The arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person.

Trustee: Any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

Youth: The meaning assigned to it in section 1 of the National Youth Development Agency Act, 2008 (Act No. 54 of 2008).

2 Conditions associated with the granting of preferences

A supplier that is granted a preference undertakes to:

2.1. accept that the number of preference points allocated will be based on the B-BBEE status level of contributor of the supplier as at the closing date for submission of quotation offers;

2.2. not sub-contract more than 25% of the value of the contract to sub-contractors that do not have an equal or higher B-BBEE status level of contributor than the supplier, unless the intended sub-contractors are exempted micro enterprises that have the capability and ability to execute the sub-contract works or unless otherwise declared in terms of Section 5 below;

2.3. accept that a contract may not be awarded if the price offered is not market related;

2.4. accept the sanctions set out in Section 3 below should Condition 2(2) be breached, or should the tenderer have submitted any false information regarding its B-BBEE status level of contributor, local production and content, or any other matter required in terms of this bid that will affect, or has affected the bid evaluation;

2.5. accept that, in order to qualify for preference points, it is the responsibility of the supplier to submit documentary proof of its BBBEE level of contribution in accordance with the Codes of Good Practise, 2013, to the LANGEBERG MUNICIPALITY at the Supplier Management Unit located within the Tender Distribution Office 28 Main Street. (Tel 023 656 8200);

2.6. Accept that, further to 5) above, Consortiums/Joint Ventures will qualify for preference points, provided that the entity submits the relevant certificate/scorecard in terms of the Preferential Procurement Regulations, 2017. Note that, in the case of unincorporated entities, a verified scorecard in the name of the consortium/Joint Venture must be submitted with the quotation (attached to this schedule);

2.7. accept that if it is found that, in the performance of the contract, the participation of the various partners in a Consortium/ Joint Venture differs substantially from that upon which the consolidated scorecard submitted in terms of 5) above was based, and the impact of which is that the Joint Venture would not have been awarded the contract in terms of the actual B-BBEE level of contribution achieved by the Joint Venture, then a financial penalty shall be

applied (in addition to any other remedies that the LANGEBERG MUNICIPALITY may have) in accordance with Section 3 below;

2.8. accept that the LANGEBERG MUNICIPALITY will verify the B-BBEE level of contributor of the supplier as at the closing date for submission of tender offers, to determine the number of preference points to be awarded to the supplier. In the case of Consortiums/Joint Ventures which tender as unincorporated entities, a verified scorecard submitted with the tender and valid as at the closing date will be used to determine the number of preference points to be awarded to the supplier;

2.9. accept that, notwithstanding 8) above, a supplier will **not** be awarded points for B-BBEE status level of contributor if he indicates in his tender that he intends sub-contracting more than 25% of the value of the contract to sub-contractors that do not qualify for at least the points that the supplier qualifies for unless the intended sub-contractors are exempted micro enterprises that have the capability and ability to execute the sub-contract works;

2.10. accept that any subcontracting arrangements after the award of the tender may only be entered into upon the prior approval of the Langeberg Municipality; and

2.11. immediately inform the Langeberg Municipality of any change that may affect the tenderer's B-BBEE level of contribution upon which preference points will be or have been allocated.

3 Sanctions relating to breaches of preference conditions

The sanctions for breaching the conditions associated with the granting of preferences are:

3.1. disqualify the supplier from the quotation process;

3.2. recover costs, losses or damages the LANGEBERG MUNICIPALITY has incurred or suffered as a result of the supplier's or contractor's conduct;

3.3. cancel the contract in whole or in part and claim any damages which the LANGEBERG MUNICIPALITY has suffered as a result of having to make less favourable arrangements due to such cancellation;

3.4. restrict the supplier, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from the LANGEBERG MUNICIPALITY for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied and inform the National Treasury accordingly;

3.5. forward the matter for criminal prosecution; and/or

3.6. financial penalties payable to the LANGEBERG MUNICIPALITY, as set out below.

Financial penalty for breach of Condition 2.2 in Section 2 above:
The penalty to be applied for sub-contracting more than 25% of the value of the contract to sub-contractors that do not qualify for at least the preference points that the supplier qualified for (unless so declared or proven to be beyond the control of the supplier, or the sub-contractors are EMEs that have the capability and ability to execute the sub-contract works) shall be as provided for in the following formula:

Penalty = 0.5 x E (%) x P*

where:

E	=	The value of work (excluding VAT) executed by sub-contractors that do not qualify for at least the preference points that the supplier qualified for, expressed as a percentage of P*, less 25%
P*	=	Value of the contract

Financial penalty for breach in terms of condition 2.6 in Section 2 above:
The penalty to be applied where, in the performance of the contract, the participation of the various partners in a Consortium/ Joint Venture differs substantially from that upon which the consolidated scorecard submitted in terms of 5) in Section 2 above was based, and the impact of which is that the Joint Venture would not have been awarded that contract in terms of the actual B-BBEE level of contribution achieved by the Joint Venture, shall be as provided for in the following formula:

Penalty = 5/100 x ($B\text{-}BBEE^{a}$ – $B\text{-}BBEE^{t}$) x P*

where:

$B\text{-}BBEE^{a}$	=	The B-BBEE level of contribution that is achieved, determined in accordance with the actual participation of the Joint Venture partners in the performance of the contract
$B\text{-}BBEE^{t}$	=	The B-BBEE level of contribution that was used to determine the number of preference points granted to the Joint Venture at the time of quotation evaluation
P*	=	Value of the contract

Financial penalty for breach in terms of condition 2.10 in Section 2 above:
The penalty to be applied where the supplier fails to disclose subcontracting arrangement after the award of the tender is up to a maximum of 10% of the value of the contract.

4 Level of Contribution in respect of enterprise status or structure of the tendering entity (the supplier)

In the interest of transparency, suppliers are required to complete Table 1: Level of Contribution below applicable to the Code they wish to be evaluated against.

Table 1: Level of Contribution: Amended Codes for Measuring Broad-Based Black Economic Empowerment in the Construction Sector.

Type of B-BBEE Contributor	Status (tick box(es) below)
Exempted Micro Enterprise (EME), 100% black-owned	☐
Exempted Micro Enterprise (EME), at least 51% but less than 100% black-owned	☐
Exempted Micro Enterprise (EME), at least 30% but less than 51% black-owned	☐
Exempted Micro Enterprise (EME), less than 30% black-owned	☐
Exempted Micro Enterprise (B-BBEE Status Level of Contributor[1]**)** ☐	☐
Qualifying Small Enterprise (B-BBEE Status Level of Contributor[1]**)** ☐	☐
Qualifying Small Enterprise (QSE), 100% black-owned	☐
Qualifying Small Enterprise (QSE), at least 51% but less than 100% black-owned	☐
Qualifying Small Enterprise (QSE), less than 51% black-owned	☐
Verified B-BBEE contributor (B-BBEE Status Level of Contributor[1]**)** ☐	☐
Non-compliant contributor	☐

[1] If it is indicated that the company/firm/entity is a verified B-BBEE contributor, then the verified status level of contributor must be inserted in the box provided (insert a number from 1 to 8 as applicable)

5 Declarations

(5.1) With reference to Condition 8 in Section 2 above, the supplier declares that:

I/we hereby forfeit my preference points because I /we DO intend sub-contracting more than 25% of the value of the contract to sub-contractors that do not qualify for at least the points that I/we as supplier qualify for or are not exempted micro enterprises that have the capability and ability to execute the sub-contract works ☐

Note: Tenderers who do not tick this box will be allocated preference points but the sanctions relating to breaches of preference conditions in Section 3 will be applicable if the tenderer contravenes the conditions in Section 2.

(5.2) The undersigned, who warrants that he/she is duly authorized to do so on behalf of the supplier, hereby certifies that the preference claimed based on the B-BBEE status level of contribution indicated in Table 1, qualifies the supplier, subject to condition 8 in Section 2 above, for such preference claimed, and acknowledges that:

(i) the information furnished is true and correct;
(ii) the preference claimed is in accordance with the conditions of this schedule;
(iii) the supplier may be required to furnish documentary proof to the satisfaction of the LANGEBERG MUNICIPALITY that the BBBEE level of contributor as at the closing date is correct; and
(iv) he/she understands the conditions under which preferences are granted, and confirms that the supplier will satisfy the conditions pertaining to the granting of preferences.

_____ _____

Signature **Date**

_____

Name (PRINT)
(For and on behalf of the Supplier (duly authorised))

For official use.		
SIGNATURE OF MUNICIPAL OFFICIALS AT TENDER OPENING		
1.	**2.**	**3.**

Schedule 25:Record of addenda to tender documents

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	Date	**Title or Details**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Attach additional pages if more space is required.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Part C1: Agreements and Contract Data

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C1.1 Form of Offer and Acceptance

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

TENDER NO. T22/2022: CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

Rand……

……(in words);

R……(in figures)

This offer may be accepted by the employer by signing the acceptance part of this *Form of Offer and Acceptance* and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature(s): ……. …….

Name(s): ……. …….

Capacity: …….. …….

Name of organization/tenderer: ……

Address of organization/tenderer: ……

……

Name and signature of witness: ……Date: ……

For official use.		
INITIALS OF MUN. OFFICIALS AT TENDER OPENING		
1.	**2.**	**3.**

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract are contained in:

Part C1: Agreements and contract data (which includes this agreement)
Part C2: Pricing data
Part C3: Scope of work
Part C4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the returnable schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this form of offer and acceptance. No amendments to or deviations from said documents are valid unless contained in this schedule.

The tenderer shall within two weeks after 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 securities, bonds, guarantees, proof of insurance and any other documents to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

CONTRACT TO BE COMPLETED AT THE ACCEPTANCE STAGE

Notwithstanding anything contained herein, this agreement comes into effect on the date when the parties have signed the table below and confirms receipt from the employer of one fully completed original copy of this agreement, including the schedule of deviations (if any). The tenderer (now contractor**)** shall within five working days of the agreement coming into effect notify the employer in writing of any reason why he cannot accept the contents of this agreement as a complete and accurate memorandum thereof, failing which the agreement presented to the contractor shall constitute the binding contract between the parties.

The Parties	**Employer**	**Contractor**
Business Name		
Business Registration		
Tax number (VAT)		
Physical Address		
Accepted contract sum (incl. tax)		
Accepted contract duration		
Signed (who by signature hereto warrants authority)		
Name of signatory		
Signed: Date		
Signed: Location		
Signed: Witness		
Name of Witness		

Schedule of Deviations

Notes:

1. The extent of deviations from the tender documents issued by the employer before the tender closing date is limited to those permitted in terms of the conditions of tender.
2. A tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

2 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

3 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

4 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

ONLY TO BE COMPLETED AT ACCEPTANCE STAGE

By the duly authorised representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the returnable schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

C1.2 Contract Data (Part 1)

Part 1: Contract Data provided by the Employer

GENERAL CONDITIONS OF CONTRACT

The following standardised General Conditions of Contract:

General Conditions of Contract for Construction Works, Third Edition, 2015

Prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and from the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za.

Prepared by the South African Institution of Civil Employer's Agenting (SAICE) shall apply to and from the General Conditions of Contract for this Contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Employer's Agenting (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Employer.
The General Conditions of Contract make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the General Conditions of Contract. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Special Conditions of Contract below.

In the event of any discrepancy and/or ambiguity in the Contract, the following precedence will govern (priority in order from highest to lowest):

1. Contract Data
2. Project Specifications
3. Drawings
4. Bill of Quantities
5. SANS 1200

SPECIAL CONDITIONS OF CONTRACT

In this regard, the Standard Conditions of Contract – GCC 2015 is amended by the numbered clauses set out below, as follows:

(i) where the Standard Conditions of Contract – GCC 2015 contains no provision with the corresponding clause number, the clause set out herein is inserted into the Contract; and
(ii) where the Standard Conditions of Contract – GCC 2015 contains a provision with the corresponding clause number, it is amended, as set out herein.

Save as amended in terms of this document, the provisions of the Standard Conditions of Contract – GCC 2015 shall remain unchanged.

1.1 Definitions

1.1.1.1 "agreed" means agreed by the Employer and the Contractor; or the Employer's Agent and the Contractor expressly authorised in terms of the Contract, unless specifically stated otherwise.

1.1.1.5 "Commencement Date" means the date that the Contract, made in terms of the Form of Offer and Acceptance, comes into effect by signing the Acceptance part and returning one fully completed original copy of this document, the Contract Agreement.

1.1.1.7 "Contract" means the documentation of the agreement between the parties in terms of the Form of Offer and Acceptance, and such written amendments or additions to the Contract as may be agreed and signed by both parties.

1.1.1.13 "Defects Liability Period" means the period stated in the Contract Data, commencing from the issue of the Certificate of Completion or Certificates of Completion in the event of more than one Certificate of Completion having been issued for different portions of the Works, during which the Contractor has both the right and the obligation to make good defects in the materials, Plant and workmanship covered by the Contract.

1.1.1.16 "Employer's Agents" means the person named as the Employers' Agent in the Contract Data, or any other person appointed from time to time by the Employer, and of whom the Contractors is notified, in writing, to act as the Employers Agent for the purposes of the Contract as substitute for the Employer's Agent so named. In terms of this Contract the term "Employers Agent" will mean to be "Engineer" and vice versa.

1.1.1.14 "Due Completion Date" means the date or dates of the expiry of the time stated in the Contract Data for achieving Practical Completion for the whole or portions of the Works, calculated from the Commencement Date and as adjusted by such extensions of time or acceleration as may be allowed or agreed in terms of Contract.

1.1.1.20 "Form of Offer and Acceptance" means the document defined as the Contract Agreement that formalises the legal process of offer and acceptance and gives rise to the Contract.

1.1.1.35 **"**parties**"** means the Contractor and the Employer.

1.1.1.36 "approved programme" means the latest programme submitted by the Contractor and approved by the Employer's Agent. The latest programme approved by the Employer's Agent supersedes previous approved programmes.

1.2 Interpretations

1.2.1 Any written communication between the parties shall have been duly delivered if:
1.2.1.1 Handed to the addressee or to his duly authorise agent; or
1.2.1.2 Delivered at the address of the addressee as stated in the Contract Data, including an e-mail address; and
1.2.1.3 Any notice or claim required in accordance with this Contract shall be communicated separately from other communications, on a separate cover with specific reference to the clause in terms of which the communication was made
Provided that the Employer, Employer's Agent and Contractor shall be entitled, by written notice to each other, to change their said addresses.

1.2.6 Any act or communication, including but not limited to "accept, agree, appoint, approve, certify, decide, delegate, dispute, elect, grant, inform, instruct, issue, notice, object, order, record, refuse, request, require, state, dispute, call for" and their derivatives indicate an act to be carried out in writing.

1.4 Non Variation Clause

1.4.1 This Contract is the entire contract between the parties regarding the matters addressed in this Contract. No representations, terms, conditions or warranties not contained in this Contract shall be binding on the parties. No agreement or addendum varying, adding to, deleting or terminating this Contract including this clause shall be effective unless reduced to writing and signed by both parties.

2.4 Ambiguity or discrepancy

2.4.2 If compliance with any such instruction shall result in delay to Practical Completion and/or the incurrence of proven additional cost the Contractor shall be entitled to make a claim in accordance with Clause 10.1 as read with Clause 6.3.

2.5 Assignment

2.5.1 Neither the Contractor nor the Employer shall, without the written consent of the other, assign the Contract or any part thereof, or any obligation under the Contract, or cede any right or benefit thereunder. Such assignment or cession shall be null and void without the other parties consent.

3.1 Qualifications of the Employer's Agent

3.1.1 The natural person appointed by the Employer to administer the Contract shall be a registered professional in a built environment profession that is appropriate to the Scope of Work.

3.2 Functions of the Employer's Agent

3.2.1 The function of the Employer's Agent is to administer the Contract in accordance with the provisions of the Contract.

4.1 Extent of obligations and liability

4.1.1 The Contractor shall, save insofar as it is legally or physically impossible, design (to the extent provided in the Contract Data), execute and complete the Works and obligations remedy any defects therein in accordance with the provisions of the Contract.

4.1.2 Where the Contract Data provides that part of the Works shall be designed by the Contractor,

4.1.2.1 the relevant part of the Works shall be fit for such purposes for which it is intended as are specified in the Contract, and

4.1.2.2 the Contractor shall, notwithstanding approval by the Employer's Agent, be liable for any error or deficiency in any drawing or document supplied by him for that part of the Works, and for any loss or damage arising out of such error or deficiency.

4.1.2.3 the Contractor shall submit to the Employer's Agent the "as-built" documents and operation and maintenance manuals in accordance with the Scope of Works and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of issuing a Certificate of Practical Completion in terms of Clause 5.14.1 as read with the relevant Contract data until these documents and manuals have been submitted to the Employer's Agent.

4.1.4 The Contractor indemnifies the Employer against any liability for any breach of the provisions of Clause 4.1.

4.2 Employer's Agent's instructions

4.2.3 Should the Contractor fail to proceed with due diligence with any Employer's Agent's instruction, the Employer's Agent may notify the Contractor to proceed within 7 days from receipt of such notice. Without further notice, on default by the Contractor, the Employer may employ other parties or use its own resources to give effect to such instruction in addition to any other rights that the Employer may have inter alia in terms of Clause 9.2.1.3.6. The Employer may recover such costs from the Contractor resulting from same.

4.3 Legal provisions

4.3.3 The Employer and the Contractor shall enter into an agreement required for the construction of the Works in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (Act 85 of 1993) and the latest Construction Regulations promulgated thereunder.

4.12 Contractors Superintendence

4.12.2 The Contractor, or a competent and authorized agent or representative approved in writing by the Employers Agent (which approval may at any time be withdrawn in writing), hereinafter called the Construction Manager, shall be on

site at all times when work is being performed, or when the Employers Agent shall, with reason, require his presence. The Construction Manager must be in possession of the following:
a) NQF level 5 for labour intensive construction methods.
b) Completed at least 5 projects by means of labour intensive construction.
c) Minimum ND Civil qualification.

5.3 Commencement of the Works

5.3.1 Upon the Employer's Agent's instruction the Contractor shall, save as may be otherwise provided in the Contract or be legally or physically impossible, commence executing the Works. Such instruction shall be subject to the submission by the Contractor, and approval by the Employer, of documentation required before commencement with Works execution, as set out in the Contract Data.

5.3.3 If the Employer's Agent's instruction to commence executing the Works, or to resubmit documentation with reasons after having found to be unacceptable by the Employer, is not received by the Contractor within 7 days from the actual date of the submission of all the documentation referred to in Clause 5.3.1, commencement of the Works shall be taken to be on the expiry of such 7 days. However, deemed commencement of the Works shall not be construed as approval of the documentation submitted.

5.4 Access to Site

5.4.3 If the Contractor suffers delay to Practical Completion and/or incurs proven additional cost from failure of the Employer to give access to or possession in accordance with the terms of this Clause, the Contractor shall be entitled to make a claim in accordance with Clause 10.1, for which purpose the time limits of 28 days provided in Clause 10.1.1.1 shall commence to run only from the time when access to or possession of the Site has actually been given.

5.6 Programme

5.6.1 The Contractor shall deliver to the Employer's Agent as part the documentation required before commencement with Works execution in accordance with Clause 5.3.1, an initial programme and method statement for carrying out the Works in order to meet the Due Completion Date.

5.6.2 The initial programme and all subsequent adjusted programmes shall show and, when relevant, describe in method statements, the entire scope of the Works to be performed including but not limited to:

5.6.2.1 The Commencement Date, commencement of the Works, Due Completion Date(s) or revisions thereof, and the planned date(s) of Practical Completion for the Works as a whole or in respect of different portions of the Works.
5.6.2.8 Health and safety requirements
5.6.2.9 Critical path including the links between all predecessors and successors for activities on the critical path

5.6.3 The Employer's Agent shall, within 7 days after the Contractor has submitted an initial or adjusted programme, approve such programme or rejecting same with reasons and instruct the Contractor to amend such programme. Reasons for rejecting a programme are *inter alia* that it is not in accordance with the Contract or is not reflecting the actual progress. The Employer's Agents failure to approve or reject with reasons the submitted programme,

5.6.3.1 in the event of the submitted programme being an adjusted programme, shall be considered to be the approved programme; and
5.6.3.2 in the event of the submitted programme being an initial programme, shall not be considered to be the approved programme. However, the Contractor shall have the right to suspend the Works in terms of Clause 5.11.1.3 and if the Contractor suffers delay to Practical Completion and/or incurs proven additional cost from such suspension, the Contractor shall be entitled to make a claim in accordance with Clause 10.1.

5.6.4 The programme, method statement and the cash flow forecast shall be subject to updates and review on a monthly basis. The Contractor shall deliver to the Employer's Agent an adjusted programme reflecting actual progress and updated dates in accordance with Clause 5.6.2, even though it may reflects that the planned date(s) of Practical Completion will be later than the corresponding Due Completion Date(s), every month, and in addition;

5.6.4.1 when instructed by the Employer's Agent,
5.6.4.2 when it no longer reflects the actual progress,
5.6.4.3 when a specific event, circumstance, act or omission may delay the execution of the Works, or
5.6.4.4 with each extension of time claim

5.6.5 The submission to and approval by the Employer's Agent of any programme, method statement and/or cash flow forecast or its adjustments, or the delivery of any other relevant particulars, shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

5.7 Progress of the Works

5.7.3 The Employer's Agent may request the Contractor to submit, or the Contractor may submit to the Employer's Agent, a revised programme and cost determined in accordance with Clause 6.4 for accelerating the rate of progress to achieve Practical Completion before the Due Completion Date. If accepted by the Employer, the adjusted Due Completion Date and the conditions for payment of cost shall be agreed in writing and signed by the parties.

5.9 Instructions

5.9.3 The Contractor shall give adequate written notice to the Employer's Agent of any instructions or drawings, which the Contractor may require for the execution of the Works and the Employer's Agent shall deliver such instructions and/or drawings to the Contractor. The notice shall include details of the necessary drawing or instruction, details of by when it should be issued, and details of the nature and amount of the delay likely to be suffered if it is late.

5.11 Suspension of the Works

5.11.1 The Contractor may, after giving fourteen (14) days written notice to the Employer, with a copy to the Employer's Agent, (with specific reference to this Clause) suspend the progress of the Works where the Employer has failed in terms of Clause 6.10.4 to:

5.11.1.1 Deliver a payment certificate, or
5.11.1.2 Make full payment of the amount certified in the payment certificate without prejudice to the Contractor's other rights under this Contract or by law, or
5.11.1.3 Failed to approve an initial programme in terms of Clause 5.6.3.2

5.12 Extension of the time for Practical Completion

5.12.1 If circumstances of any kind whatsoever which occurred be such as fairly entitle the Contractor to an extension of time and will actually delay Practical Completion of the Works beyond the Due Completion Date, the Contractor shall claim in accordance with Clause 10.1 such extension of time as is appropriate. Such extension of time shall take into account any special non-working days and all relevant circumstances, including concurrent delays or savings of time which might apply in respect of such claim and the Due Completion Date will be revised accordingly.

5.12.2.2 No extension of time will be granted in respect of any delays attributed to normal climatic conditions. Normal climatic conditions shall be deemed to include normal rainfall and associated wet conditions and materials, strong winds and extremes of temperature. However, in the event that delays to critical activities exceed the number of working days listed below cumulatively for the construction period, then abnormal climatic conditions shall be deemed to exist, and an extension of time may be claimed in accordance with the provisions of Clause 5.12.

The cumulative days for normal climatic conditions must be indicated on the initial programme as a single bar item/activity and as the immediate predecessor to Practical Completion and on the critical path of the programme. The normal climatic conditions will be recorded on the specific days, as and when they occur. Should the days listed below for normal climatic conditions not be used, the days, will become float in terms of Clause 5.6.2 of the GCC 2015 (3rd Edition). The float shall belong to the project and shall only be taken up on prior approval by the Employers Agent.

The number of days quoted below shall be regarded as a fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts critical work.

January	2 days
February	3days
March	4 days
April	4 days
May	4 days
June	5 days
July	5 days
August	4 days
September	4 days
October	3 days
November	2 days
December	2 days

Claims for delays for abnormal climatic conditions shall be accompanied by substantiating facts and evidence, which shall be submitted timeously as each day or half-day delay is experienced.

It shall be further noted that where the critical path is not affected, no extension of time for abnormal climatic conditions or for any other reason will be entertained.

5.12.2.5 Any delay, impediment, or prevention caused by or attributable to the Employer, Employer's Agent, the Employer's personnel or the Employer's other contractor's on the Site.

5.12.4 Instead of granting extension of time, if feasible, the Employer's Agent may request the Contractor to accelerate the rate of progress to achieve Practical Completion without extension of time and agree the cost for payment of such acceleration in accordance with Clause 5.7.3.

5.13 Penalties for delay

5.13.2.1 Refer to 1.2.2 Contract specific data.

5.14 Completion

5.14.1 Save as otherwise provided in the Contract, the Contractor shall be entitled to receive a Certificate of Practical Completion when the Works have reached Practical Completion.

When the Works are about to reach the said stage, the Contractor shall, in writing, request a Certificate of Practical Completion and the Employer's Agent shall, within 14 days after receiving such request, either where the Works;

5.14.1.1 has reached Practical Completion issue a Certificate of Practical Completion to the Contractor and to the Employer or

5.14.1.2 has not reached Practical Completion, issue a written list to the Contractor defining the incomplete work and defects to be rectified to achieve Practical Completion.

Should the Employer's Agent not issue a Certificate of Practical Completion or such a list within the 14 days, Practical Completion shall be considered to have been achieved on the expiry of the 14 days of the written request in terms of Clause 5.14.1.

5.14.2 As soon as the work referred to in the list issued in terms of Clause 5.14.1 has been duly completed and defects that manifested after the list was issued rectified, the Employer's Agent shall deliver to the Contractor and to the Employer a Certificate of Practical Completion together with a further written list setting out the work to be completed to justify the issuing of a Certificate of Completion.

5.14.6 The Employer need not occupy the Works before the Due Completion Date

5.14.7 If, in terms of the Contract Data stated for Clause 1.1.1.14, different times for achieving Practical Completion are specified in respect of different portions of the Works, the provisions for the Works as a whole shall apply with necessary adjustment in respect of such portions.

6.2 Security

6.2.1 The Contractor shall deliver to the Employer, as part of the documentation required before commencement with Works execution in accordance with Clause 5.3.1, at his cost, the type of security for the due performance of the Contract, as selected in the Contract Data.

6.2.2 If the Contractor fails to provide or maintain the security as selected in the Contract Data within the time period stated in Clause 5.3.2 or if the performance guarantee is not in accordance with the relevant pro forma performance guarantee, the Employer, in his sole discretion, may either

6.2.2.1 Hand over the Site to the Contractor and withhold payment from the Contractor until the amount withheld is equal to ten per cent (10%) of the Contract Price. Such amount shall be reduced to five per cent (5%) of the Contract Price when the Employer's Agent has issued a Certificate of Completion [5.14.4] and to zero per cent (0%) in the Final Payment Certificate [6.10.9] or

6.2.2.2 Terminate this Contract in terms of Clause 5.3.2 as read with Clause 9.2.1.3.2.

6.2.3 If the Contractor is to provide a performance guarantee as security, he shall ensure that it remains valid and enforceable until the Final Approval Certificate is issued. The performance guarantee shall specify an expiry date, and if the Contractor has not become entitled to receive the Final Approval Certificate of the Works by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the performance guarantee until such time that work have been completed and any defects have been remedied.

6.7 Measurement of the Works

6..7.3.1 The Construction Manager identified in terms of Clause 4.12.2 will attend to assist the Employer's Agent in making such measurement, or to make such measurement in the presence of the Employer's Agent. Should the Construction Manager fail to attend, Clause 6.7.4.2 will apply.

6.8 Adjustment in rates and/or prices

6.8.2 The Contract Price shall **not** be subject to any contract price adjustment and the rates and prices tendered in the bill of quantities shall be final and binding throughout the period of the Contract.

Notwithstanding the above, if special materials are specified in the Contract Data then the provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials.

Furthermore if, as a result of any extension of time granted, the duration of the contract period exceeds one year, the contract will automatically be subject to contract price adjustment for that period by which the extended contract period exceeds such one year.

Where applicable, in terms of the foregoing, the value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

The value of "x" is 0,15.

The values of the coefficients are:
a = 0,20 b = 0,25 c = 0,50 d = 0,05

The base month is the eleventh month after the Commencement Date of the Contract.

In addition, the Contract Price Adjustment Schedule shall be amended as follows:

"L" is the "Labour Index" and shall be the Consumer Price Index (CPI per Province) for the National Province wherein the larger part of the Site is located, as published in the Statistical News Release, P0141 Table A of Statistics South Africa.

"P" is the "Plant Index" and shall be the Producer Price Index for Civil engineering plant as published in the Statistical News Release P0142.1, Table 12 of Statistics South Africa.

"M" is the "Materials Index" and shall be the Producer Price Index for materials for Building and construction – Civil engineering as published in the Statistical News Release P0142.1, Table 11 of Statistics South Africa.

"F" is the "Fuel Index" and shall be the Producer Price Index for Diesel at wholesale level – Coast as published in the Statistical News Release P0142.1, Table 12 of Statistics South Africa.

6.10 Payment

6.10.1 With regard to all amounts that become due to the Contractor in respect of the matters set out in Clauses 6.10.1.1,6.10.1.2,6.10.1.3,6.10.1.4, and 6.10.1.5 below, the Contractor shall deliver to the Employer's Agent a monthly statement for payment of all amounts he considers to be due to him (in such form and on such date as may be agreed between the Contractor and the Employer's Agent, or failing agreement, as the Employer's Agent may require) and the Employer's Agent shall, by signed payment certificates issued to the Employer and the Contractor, certify the amount he considers to be due to the Contractor or the Employer, taking into account the following:

6.10.1.5 The value up to the percentage limit stated in the Contract Data of Plant and materials referred to in Clause 6.9.1 not yet built into the Permanent Works. No payment will be made for any Plant and/or materials off site, except if expressly agreed otherwise;

Provided that the Contractor has produced documentary evidence of ownership of such Plant and/or materials and has delivered to the Employer an indemnity, approved in writing by the Employer, against any claim to or in respect of such Plant and/or materials by reason of the Contractor's sequestration or liquidation, or of any defect in the Contractor's title to the Plant and/or materials.

6.10.4 The Employer's Agent shall deliver to the Employer and the Contractor the payment certificate referred to in Clause 6.10.1 within 7 days of the receipt by the Employer's Agent of the Contractor's said statement. The Employer's Agent shall not be relieved from its responsibility to issue a payment certificate whether or not the Contractor submits the said statement. Any dissatisfaction in respect of such payment certificate shall be dealt with in terms of Clause 10.2. The Employer or the Contractor, as the case may be, shall pay the amount due to the other within 28 days of receipt by the Employer and the Contractor of the payment certificate signed by the Employer's Agent. Payment shall be subject to the Contractor or the Employer, as the case may be, submitting a tax invoice, if required by law, to the other party for the amount due.

6.10.8 Within 14 days of the date of the Certificate of Completion, the Contractor shall deliver to the Employer's Agent a completion statement showing the value of work done in respect of which a Certificate of Completion has been

issued and shall supply such further information as the Employer's Agent may reasonably require. The Contractor shall not be entitled to any payment in respect of any matter which has not been included in such completion statement save as provided for in Clauses 5.14, 7.7 and 7.8 in respect of work executed during the Defects Liability Period and/or Clauses 10.3 to 10.11 in respect of any dispute. The Employer's Agent shall deliver to the Employer and the Contractor the payment certificate in respect of the completion referred to above within 14 days of the receipt by the Employer's Agent of the Contractor's said statement, and the Employer or the Contractor, as the case may be, shall pay the amount due to the other party within 28 days after receipt by the Employer and the Contractor of the payment certificate signed by the Employer's Agent.

6.10.9 Within 14 days of the date of final approval as stated in the Final Approval Certificate, the Contractor shall deliver to the Employer's Agent a final statement claiming final settlement of all moneys due to him (save in respect of matters in dispute, in terms of Clauses 10.3 to 10.11, and not yet resolved). The Employer's Agent shall within 14 days issue to the Employer and the Contractor a Final Payment Certificate, the amount of which shall be paid to the Contractor or the Employer, as the case may be, within 28 days of the date of such certificate, after which no further payments shall be due to the Contractor (save in respect of matters in dispute, in terms of Clauses 10.3 to 10.11 and not yet resolved).

8.6 Insurances

8.6.1.5 In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required:

(a) Insurance of Construction Equipment (including tools, offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the site for a sum sufficient to provide for their replacement.

(b) Insurance in terms of the provisions of the Compensation for Occupational injuries and Diseases Act No. 130 of 1993.

(c) Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability Indemnity.

(d) Where the contract involves manufacturing and/or fabrication of the works or part thereof at premises other than the Site, the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the works are adequately insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such works during manufacture or fabrication then such interest shall be noted by endorsement to the Contractor's Policies of Insurance.

9.2 Termination by Employer

9.2.1.3.2 Has failed, in terms of Clause 5.3.2, to submit documentation in time, or to submit acceptable documentation, or to maintain and extend the validity of the performance guarantee until the Certificate of Completion; or

9.2.1.3.6 Is not executing the Works in accordance with the Contract, or is neglecting or failing to carry out his obligations under the Contract, *inter alia* to comply with any instruction under Clause 4.2; or

10.1 Contractor's Claim

10.1.1 The following provisions shall apply to any claim by the Contractor for an extension of time for Practical Completion of the Works in terms of Clause 5.12, or in terms of any Clause that refers to Clause 10.1 for additional payment or compensation:

10.1.1.1 The Contractor shall within 28 days after the commencement of each circumstance, event, act or omission giving rise to such a claim, deliver to the Employer's Agent a written claim, referring to this Clause and setting out:

10.1.1.1.1 The particulars of the circumstance, event, act or omission giving rise to the claim concerned,
10.1.1.1.2 The provisions of the Contract on which he bases the claim
10.1.1.1.3 The length of the extension of time, if any, claimed and the basis of the calculation by incorporating the effects of each circumstance, event, act or omission on the critical path of an Approved Programme, indicating the delay on Practical Completion, and
10.1.1.1.4 The amount of money claimed and the basis of calculation thereof.

10.1.1.2 If, by reason of the nature and circumstances of the claim, the Contractor cannot reasonably comply with all or any of the provisions of Clause 10.1.1.1.1 to 10.1.1.1.4 to deliver a claim within the said period of 28 days, he shall:

10.1.1.2.1 within the said period of 28 days issue a further notice referring to the relevant notice in terms of Clause 10.1.2 and confirming his intention to make the claim and comply with such of the requirements of Clause 10.1.1.1.1 to 10.1.1.1.4 as he reasonably can, and

10.1.1.2.2 As soon as practicable, comply with such of the requirements of Clause 10.1.1.1.1 to 10.1.1.1.4 as have not yet been complied with.

10.1.1.3 If the circumstance, event, act or omission relating to the claim are of an ongoing nature:

10.1.1.3.1 the Contractor shall, within 14 days after the commencement of each circumstance, event, act or omission giving rise to such a claim, deliver to the Employer's Agent a written notice of his intention to submit a claim, referring to this Clause and setting out the particulars of the circumstance, event, act or omission. Provided that the additional payment or compensation or delay that occurred before 14 days prior the date on which the notice in terms of this clause was delivered, shall be deemed to be covered by the rates and/or prices set out in the Pricing Data and the time stated in the Contract Data relating to Clause 5.5.1

10.1.1.3.2 The Contractor shall, in addition to delivering the said further notice within 28 days in terms of Clause 10.1.1.2.1, each month deliver to the Employer's Agent, in writing, updated particulars required in terms of Clause 10.1.1.1.1 to 10.1.1.1.4 and, within 28 days after the end of the circumstance, event, act or omission deliver his final claim.

10.1.2 The Contractor shall issue an early warning notifying to the Employer's Agent as soon as he becomes aware of any circumstance, event, act or omission which could:

10.1.2.1 Increase the Contract Prices,
10.1.2.2 Delay Practical Completion, or
10.1.2.3 Impact on the quality or
10.1.2.4 Impair the performance of the Works in use

10.1.3.6 The Employer, the Employer's Agent and the Contractor shall not in any proceedings in accordance with Clauses 10.3 to 10.11 be entitled to give or lead evidence of or rely on any fact or circumstance not recorded in terms of this Clause.

10.1.4 If, in respect of any claim to which this Clause refers, the Contractor fails to deliver his claim within the 28 day claim period in terms of Clause 10.1.1.1 or does not deliver a further notice within the period of 28 days in terms of Clause 10.1.1.2.1 or does not deliver his final claim within 28 days after the circumstance, event, act or omission ceased in terms of Clause 10.1.1.3.2, the Due Completion Date shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged all liability in connection with the claim.

Provided that failure by the Contractor to give an early warning notice in terms of Clause 10.1.2 which an experienced Contractor could have given, the claim shall be assessed by the Employer's Agent and the ruling in terms of Clause 10.1.5 shall be taken into account the lack of mitigation measures employed due the lack of such early warning notice.

10.1.5 Unless otherwise provided in the Contract, the Employer's Agent shall within 28 days after the Contractor has delivered his claim in terms of Clause 10.1.1, give effect to Clause 3.1.2 and deliver to the Contractor and the Employer his written and adequately reasoned ruling on the claim referring specifically to this Clause. The amount thereof, if any, allowed by the Employer's Agent shall be included to the credit of the Contractor the next payment certificate. Where the Employer's Agent fails to make a ruling within such 28 days the claim shall be deemed to be refused;

Provided that:

10.1.5.1 The said period of 28 days may be extended if so agreed between the Contractor and the Employer's Agent prior to the expiry of such 28 days, and

10.1.5.2 Any amount that has been established to the satisfaction of the Employer's Agent, before his ruling on the whole claim, shall be included to the credit of the Contractor in the next payment certificate.

10.3.1 Any dispute of whatsoever nature arising out of this Contract concerning any of the rights and/or obligations of any party thereto, either during the currency of the Contract or after the completion thereof, including any dispute as to the validity of the Contract, shall be referred to adjudication in terms of Clause 10.5. The Contractor or the Employer, hereinafter referred to as "the parties", may deliver to the other a written notice, hereinafter referred to as a "Dispute Notice", of any dispute arising out of or in connection with the Contract;

10.10.1 Nothing herein contained shall deprive the Contractor or the Employer of either party's right to institute immediate court proceedings in respect of failure by the Employer or the Contractor, as the case may be, to pay the amount of a payment certificate on its due date, or to pay any amount of retention money on its due date for payment.

10.10.3 The Adjudication Board, arbitrator and the court shall have full power to open up, review and revise any ruling, decision, order, instruction, certificate or valuation of the Employer's Agent. The Arbitrator and the court shall

have full power to and to reconsider any decision by the Adjudication Board relevant to the matter in dispute, and neither party shall be limited in such proceedings before such arbitrator or court to the evidence or arguments put before the Employer's Agent for the purpose of obtaining his ruling, or the Adjudication Board for the purpose of obtaining a decision.

1.2.2 CONTRACT SPECIFIC DATA

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:

	CL No	
Defects liability period	1.1.1.13	12 calendar months
Time for achieving practical completion	1.1.1.14	4 months – inclusive of the 14 day period referred to in Clause 5.3.2 and inclusive of non-working days referred to in Clause 5.8.1, but exclusive of special non-working days.
Name of Employer	1.1.1.15	Langeberg Municipality
Name of Employers Agent	1.1.1.16	UDS Africa
Address, telephone and fax number of Employers Agent	1.2.1.2	Unit 8, Time Square Building, 9 Elektron Street, Techno Park, 7600 Tel. (021) 880 0443 Fax. 086 563 0003
Address, telephone and fax number of Employer	1.2.1.2	28 Main Road, Ashton, (tel) 023 615 8000, (fax) 023 615 1563
The Pricing Strategy	1.1.1.26	Re-measurement Contract
Health and Safety Plan	5.3.1	Within 14 days after Commencement Date
Initial programme	5.3.1	Within 14 days after Commencement Date
The agreement in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (no. 85 of 1993) and the Construction Regulations Promulgated there under must be signed	5.3.1	Within 14 days after Commencement Date
Time within which Performance Guarantee (Security) must be provided	5.3.1	Within 14 days after Commencement Date
Time within which Insurance must be provided	5.3.1	Within 14 days after Commencement Date
Letter of Good Standing from the Compensation Commissioner	5.3.1	Within 14 days after Commencement Date
Time to submit documentation before commencement of the Works is	5.3.2	14 days
Non-working days	5.8.1	The special non-working days are: (1) All gazetted public holidays falling outside the year end break. (2) The year end break commencing as published by SAFCEC The following conditions apply: a) No work allowed after 18:00 on weekdays. b) Working times for Saturdays are 08:00 - 14:00.

		c) No work allowed on Sundays, Public Holidays and year end break as published by SAFCEC. d) Approval for work outside of normal working hours to be obtained from Employer. Penalty for the transgression of above conditions is R 5 000/transgression.
Special non-working hours/days	5.8.1	The SAFCEC published industry shutdown period in December and January. All statutory holidays.
Amount of penalty for delay	5.13.1	R 4 000 per day
The requirements for achieving Practical Completions are	5.14.1	All payment items in the bill of quantities must be incorporated into the Works or as determined by the Employer's Agent.
Latent defect period beyond the date of final Approval Certificate	5.16.3	10 Years
The Security provided by the Contractor	6.2.1	Performance guarantee of 10% of the Contract Sum plus Retention of 10% of the value of the Works
The percentage allowance on the net cost of materials actually used in the completed works is	6.5.1.2.3	5%
Percentage advance on materials not yet built into the Permanent Works is	6.10.1.5	80% of value of materials on site or value of the MOS Guarantee submitted and approved, whichever is the lesser amount. Proof of payment for material must be submitted (before the MOS will be certified) of alternative a MOS guarantee may be provided (at the Contractors cost).
Limit of retention money	6.10.3	Ten percent (10%) of the contract sum
The value of Plant and materials supplied by the Employer to be included in the insurance sum is	8.6.1.1.2	Not Required
The amount to cover professional fees for the repairing damage and loss to be included in the Insurance sum	8.6.1.1.3	15% of the Contract Sum
Limit of indemnity or liability insurance required	8.6.1.3	R 10 000 000-00 for any single claim and the number of claims to be unlimited during the construction defects liability period
Dispute resolution	10.5.1	Ad Hoc Adjudication
The number of Adjudication Board Members to be appointed is	10.5.3	One

C1.2 Contract Data (Part 2)

Data provided by the Contractor

The name of the Contractor is ……

The address of the Contractor is

Physical Address : ……
……
……
……
……

Postal Address : ……
……
……
……
……

Telephone : …… Fax: ……

email : ……

CONTRACTOR'S ANNUAL HOLIDAY PERIODS DURING CONSTRUCTION PERIOD

Year 1 contractor's annual holiday period	Start date		End date

C1.3 Form of Performance Guarantee

PERFORMANCE GUARANTEE

For use with the Conditions of Contract as described in C1.2: Contract Data Part 1: Contract Data provided by the Employer

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

"Physical address: .....

"Employer" means: The Langeberg Municipality, DIRECTORATE.

"Contractor" means: .....

"Employer's Agent" means: UDS Africa .....

"Works" means: "T22/2022": CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU.....

"Site" means: The site as defined in the Contract Data.

"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 R.....

Amount in words: .....

"Guaranteed Sum" means: The maximum aggregate amount of R.....

Amount in words: .....

"Expiry Date" means: The date of issue by the Employer's Agent of the Certificate of Completion of the Works.

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificate and the Certificate of 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 payment in full of the Guaranteed Sum, whichever occurs first. The Employer's Agent 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 this 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 Employer's Agent 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 payment 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 Performance 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 within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. 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.

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

11. 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.

12. 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.

13. 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 Courts Act No 32 of 1944, as amended, to the 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) .....

ANNEXURE

LIST OF APPROVED FINANCIAL INSTITUTIONS

The following financial institutions are currently (as at 18 October 2016) approved for issue of contract guarantees to the LANGEBERG Municipality:

National Banks:
ABSA Bank Ltd.
FirstRand Bank Ltd.
Investec Bank Ltd.
Nedbank Ltd.
Standard Bank of SA Ltd.

International Banks (with branches in SA):
Barclays Bank plc.
Citibank n.a.
Credit Agricole Corporate and Investment Bank
HSBC Bank plc.
JP Morgan Chase Bank
Societe Generale
Standard Chartered Bank

Insurance companies:
ABSA Insurance
Coface s.a.
Compass Insurance Co.
Constantia Insurance Co.
Credit Guarantee Insurance Co.
Guardrisk Insurance Co.
Hollard Insurance Company Ltd.
Infiniti Insurance Limited
Lombard Insurance
New National Assurance Co.
Regent Insurance Co.
Renasa Insurance Company Ltd.
Santam Limited
Zurich Insurance Co.

C1.4 Form of Advance Payment Guarantee

ADVANCE PAYMENT GUARANTEE

For use with the Conditions of Contract as described in C1.2: Contract Data Part 1: Contract Data provided by the Employer

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

"Physical address: .....

"Employer" means: The Langeberg Municipality, DIRECTORATE.

"Contractor" means: .....

"Employer's Agent" means: UDS Africa .....

"Works" means: TENDER NO. T22/2022- CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

"Site" means: The site as defined in the Contract Data.

"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.

"Plant and materials" means: The Plant and materials stored at places other than the Site, or in respect of which an advance payment prior to manufacture is required, which the Employer has agreed may be subject to advance payment, such Plant and materials being listed in the Schedule of Plant and materials.

"Schedule of Plant and materials" means: A list of Plant and materials which shows the value thereof to be included in the Guaranteed Advance Payment Sum.

"Guaranteed Advance Payment Sum" means: The maximum aggregate amount of R.....

Amount in words: .....

"Expiry Date" means: The date of the payment certificate wherein the Plant and materials have been certified by the Employer's Agent as having been built into the Permanent Works.

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates and Final Payment Certificate.

ADVANCE PAYMENT GUARANTEE

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

2. The Guarantor's period of liability shall be from and including the date of issue of this Advance Payment Guarantee and up to and including the Expiry Date or the date of payment in full of the Guaranteed Advanced Payment Sum, whichever occurs first.

3. The Guarantor hereby acknowledges that:

3.1 any reference in this Advance Payment 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 this Advance Payment 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 Employer's Agent 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) calendar 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 Advance Payment 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 Advance Payment Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Advance Payment 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 Advance Payment 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. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. 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 Advance Payment Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

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

11. This Advance Payment 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.

12. This Advance Payment 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.

13. 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 Courts Act No 32 of 1944, as amended, to the 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) .....

.

Schedule of Plant and materials

For use with Advance Payment Guarantees on contracts using the General Conditions of Contract for Construction Works, Third Edition, 2015.

Employer The Langeberg Municipality, DIRECTORATE

Contractor ……..

Works Contract No. and Title……

Payment Certificate No. …….

Advance payment is requested in respect of the following items of Plant and materials, which have been manufactured and are stored at places other than the Site, or in respect of which a deposit with order is required from the Contractor by a manufacturer/supplier:

Bill of Quantities item no.	Description of Plant and materials	Deposit with order required (Y/N)	Place of storage (or manufacture, if deposit with order is required)	Unit	Quantity	Unit price R c	Total Price R c
Total Value of Plant and materials to be included in Guaranteed Advance Payment Sum R							

Signed at …….. on the ……..day of……..20……..

…….. ……

for the Contractor As witness

……

Approved by Employer's Agent

C1.5 Occupational Health and Safety Agreement

AGREEMENT MADE AND ENTERED INTO BETWEEN THE LANGEBERG MUNICIPALITY (HEREINAFTER CALLED THE "EMPLOYER") AND

……..,
(Contractor/Mandatary/Company/CC Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993 AS AMENDED.

I, ……., representing

……., as an employer in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all construction equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated thereunder.

I furthermore confirm that I am/we are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that I/We are insured with an approved licensed compensation insurer.

COID ACT Registration Number: …….

OR Compensation Insurer: ..... Policy No.: .....

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an occupational health and safety agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the Occupational Health and Safety Specifications contained in this tender and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan submitted and approved in terms thereof.

Signed at .....on the.....day of.....20…….

_____ _____
Witness **Mandatary**

Signed at .....on the.....day of.....20…….

_____ _____
Witness for and on behalf of LANGEBERG Municipality

C1.6 Insurance Broker's Warranty

Pro Forma

Logo

Letterhead of Contractor's Insurance Broker

Date _____

LANGEBERG MUNICIPALITY
Municipal Manager
PRIVATE BAG X2
ASHTON
6715
TEL: 023 626 8200

Dear Sir

CONTRACT NO.: T22/2022

CONTRACT TITLE: CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

NAME OF CONTRACTOR: _____

I, the undersigned, do hereby confirm and warrant that all the insurances required in terms of the abovementioned contract have been issued and/or in the case of blanket/umbrella policies, have been endorsed to reflect the interests of the LANGEBERG MUNICIPALITY with regard to the abovementioned contract, and that all the insurances and endorsements, etc., are all in accordance with the requirements of the contract.

I furthermore confirm that all premiums in the above regard have been paid.

Yours faithfully

Signed: _____

For: _____

Part C2: Pricing Data

PART C2: PRICING DATA 105

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C2.1 Pricing Assumptions

Pricing Assumptions mean the criteria as set out below, read together with all Parts of this contract document, which it will be assumed in the contract, that the tenderer has taken into account when developing his prices.

1. The method of measurement published by the South African Bureau of Standards in clause 8 of the Standardised Specifications for Civil Engineering Construction is applicable, subject to the variations and amendments contained in the section “Applicable SANS 1200 standardised specifications”.

2. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the Standardised Specifications. Clause 8 of each Standardised Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standardised Specification, or the Scope of Work, conflict with the terms of the Schedule, the requirements of the Standardised Specification or Scope of Work, as applicable, shall prevail.

3. The measurement and payment clauses in a specification in which further information regarding the scheduled items is given, are referenced under “Item” (pay items) in the Bills of Quantities. The referenced clauses are not necessarily the only sources of information in respect of scheduled items. Further information and specifications may be found elsewhere in the contract documents. Standardised Specifications are identified by the digits which follow SANS in the SANS 1200 series of specifications, e.g. G for SANS 1200 G.

4. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

5. The quantities set out in the Bills of Quantities are the estimated quantities of the Contract Works, but the Contractor will be required to undertake whatever quantities may be directed by the Employer’s Agent from time to time. The Contract Price for the completed contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.

6. The prices and rates to be inserted in the Bills of Quantities are to be the full inclusive prices for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.

7. A price or rate should be entered against each item in the Bills of Quantities, whether the quantities are stated or not. **An item against which no rate is/are entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or the word “included” or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been entered against that item, i.e. that there is no charge for that item.** The Tenderer may be requested to clarify nil rates, or items regarded as having nil rates; and the Employer may also perform a risk analysis with regard to the reasonableness of such rates.

8. Except where rates only are required, insert all amounts to be included in the total tendered price in the "Amount" column and show the corresponding total tendered price.

9. The Tenderer shall fill in rates for all items where the words “rate only” appear in the “Total” column. “Rate Only” items have been included where:

(a) an alternative item or material is contemplated:
(b) variations of specified components in the make-up of a pay item may be expected; and
(c) no work under the item is foreseen at the tender stage but the possibility that such work may be required is not excluded.

For “Rate Only” items no quantities are given in the “Quantity” column but the quoted rate shall apply in the event of work under this item being required. The Tenderer shall however note that in terms of the Tender Data the Tenderer may be asked to reconsider any such rates which the Purchaser may regard as unbalanced.

10. Where Provisional sums or Prime Cost sums are provided for items in the Bill of Quantities, payment for the work done under such items will be made in accordance with the Contract Specifications. The Purchaser reserves the right, during the execution of the works, to adjust the stated amounts upwards or downwards according to the work actually done under the item, or the item may be omitted altogether, without affecting the validity of the Contract.

    The Tenderer shall not under any circumstance whatsoever delete or amend any of the sums inserted in the “Amount” column of the Bill of Quantities and in the Summary of the Bill of Quantities unless ordered or authorized in writing by the Purchaser before closure of tenders. Unauthorized changes made by the Tenderer to provisional items in the Bill of Quantities, or to the stated provisional percentages and sums in the Summary of the Bill of Quantities, will not be tolerated.

11. Arithmetical errors found in the Bill of Quantities as a result of faulty multiplication of addition, will be corrected by the Purchaser’s Agent at the tender evaluation stage, as set out in the Condition of Tender and the Tender Data

12. Incorrect entries shall not be erased or obliterated with correction fluid but must be crossed out neatly. The correct figures must be entered above or adjacent to the deleted entry, and the alteration must be initialed by the Tenderer.

13. The units of measurement described in the Bills of Quantities are metric units. Abbreviations which may be used in these Bills of Quantities are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1000 kg)
m2	=	square metre	No.	=	number
m2.pass	=		square metre-pass	sum =	lump sum
ha	=	hectare	MN	=	meganewton
m3	=	cubic metre	MN.m	=	meganewton-metre
m3.km	=	cubic metre-kilometre	P C sum	=	Prime Cost sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	%	=	per cent
MPa	=	megapascal	kW	=	kilowatt

14. Where fractions of a cent occur in calculations of prices and amounts, they shall be rounded up/down to the nearest whole cent.

15. The Tenderer is referred to C.2.24 in Part T1.2 Tender Data regarding the pricing of Deviations and/or Qualifications.

16. All descriptions or clauses where trade names or proprietary products are specified, are deemed to include the phrase “or equal approved”

17. Tenderers are referred to Clause 6.8.2 in Part C1.2 Contract Data regarding contract price adjustment.

The following bills in Part C2.2 Bills of Quantities are deemed applicable to the following categories for the purposes of Contract Price Adjustment:

NO.	BILL	CPA CATEGORY
1.	NONE	

C2.2 Bills of Quantities

Bid specifications may not make any reference to any particular trade mark, name, patent, design, type, specific origin or producer, unless there is no other sufficiently precise or intelligible way of describing the characteristics of the work, in which case such reference must be accompanied by the words “or equivalent”.

TENDERERS MUST NOTE THAT WHEREVER THIS DOCUMENT REFERS TO ANY PARTICULAR TRADE MARK, NAME, PATENT, DESIGN, TYPE, SPECIFIC ORIGIN OR PRODUCER, SUCH REFERENCE SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS ‘OR EQUIVALENT”

SECTION A: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
A		PRELIMINARY AND GENERAL					
	PS A 8.3	**Scheduled Fixed-charge and Value-related Items**					
A.1..1	PS A 8.3.1	Fixed preliminary and general charges	Sum				
A.1.2	PS A 8.3.2	Value related preliminary and general charges	Sum				
	PS A 8.4	**Scheduled Time-related Items**					
A.1.3	PS A 8.4.1	Time related preliminary and general charges	Sum				
	PS A 8.5	**Sums Stated Provisionally by Engineer**					
A1.4	PS A 8.5.2	b) For work to be done by a nominated sub-contractor (or the Employer)					
A.1.4.1		i) Scanning for existing services	Prov Sum	1		30,000	00
A.1.4.2		ii) Overheads, charges and profit on item i) above	%	30,000			
	PS A 8.6	**Prime Cost Sums**					
A1.5		Communication allowance					
A1.5.1		a) The cost of calls in connection with contract administration and telephone and cellular telephone rental	Prov Sum	1		10,000	00
A1.5.2		b) Charge required by Contractor on item a) above	%	10,000			
A1.6		Additional testing of materials required by Engineer					
A1.6.1		a) Cost of testing	Prov Sum	1		40,000	00
A1.6.2		b) Charged required by Contractor on item a) above	%	40,000			
A1.7		As built surveys					
A1.7.1		a) Cost of as built surveys	Prov Sum	1		20,000	00
A1.7.2		b) Charged required by Contractor on item a) above	%	20,000			
TOTAL CARRIED FORWARD							

SECTION A: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
A1.8	PS A 8.7	**Daywork**					
		Labour					
A1.8.1		a) Unskilled	h	48			
A1.8.2		b) Semi-skilled	h	24			
A1.8.3		c) Skilled	h	24			
A1.8.4		d) Artisan	h	24		Rate Only	
A1.8.5		e) Foreman	h	24		Rate Only	
A1.8.6		f) Surveyor	h	24		Rate Only	
		Equipment (including overheads, fuel, operator's costs, charges and profit)					
A1.8.7		g) Compressor up to 10m³/min	h	8			
A1.8.8		h) Concrete mixer over 400l capacity	h	8			
A1.8.9		i) Water pump up to 180 l/min capacity	h	8			
	8.8	**Temporary Works**					
A1.9	PS A 8.8.2	Dealing with Traffic (or accommodation of traffic)	Sum				
	PS A 8.8.4	Existing Services					
A1.10	PS A 8.8.4.1	Provision of and using of specialist detection equipment for:					
A1.10.1		a) Water, sewer and stormwater pipes	Sum				
A1.10.2		b) Eskom and other electrical cables	Sum				
A1.10.3		c) Telkom and other data cables	Sum				
A1.11	PS A 8.8.4.2	Excavation by hand in all material to expose existing services	m³	15			
A1.12	PS A 8.8.5	Cost of Survey in Terms of the Land Survey Act	Sum				
A1.13	PS A 8.8.7	Dealing with water for duration of contract					
A1.13.1		a) Dealing with subsurface water	Sum				
A1.13.2		b) Dealing with surface water	Sum				
TOTAL CARRIED FORWARD							

SECTION A: PRELIMINARY AND GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
A1.14	PS A 8.9	Application and obtaining wayleaves (time required to be included in contractual programme)	Sum				
A1.15	PS A 8.10	Complying with the Health and Safety Requirements	Sum				
A1.16	PS A 8.11	Contract nameboards	No.	2			
TOTAL CARRIED FORWARD TO SUMMARY							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
		BONNIEVALE TRADING STALLS					
		BILL NO 1					
B1		EARTHWORKS					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Nature of the ground					
		The Tenderer shall acquaint himself by personal examination of the nature of the ground. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" and where conditions of a more difficult character are indicated these are separately measured					
		Carting away of excavated material					
		Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or alternatively, from stock piles situated on the building site					
B1.1		SITE CLEARANCE ETC					
		Site clearance					
B1.1.1		Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m^2	52			
B1.1.2		Stripping average 150mm thick layer of top soil and stockpile on site	m^3	8			
B1.1.3		Remove and spoil existing concrete bench and seating	Sum	1			
B1.2		EXCAVATION, FILLING, ETC					
		Excavation in earth not exceeding 2m deep					
B1.2.1		To reduce levels to final levels under floors, etc	m^3	6			
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B1.2.2		Trenches	m^3	10			
B1.2.3		Holes	m^3	23			
B1.3		Back excavation of vertical sides of excavation in earth for working space including backfilling compacted to 98% Mod AASHTO density					
B1.3.1		Not exceeding 500mm deep for placing and removing formwork to walls etc against excavated face	m^2	10			
B1.3.2		Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to bases, foundation beams, etc against excavated face	m^2	30			
		Extra over excavations for excavations in					
B1.3.3		Soft Rock	m^3	5			
B1.3.4		Hard Rock	m^3	2			
		Extra over back excavation in earth for working space for excavation in soft rock					
B1.3.5		Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to strip footings, foundations beams, bases, etc against excavated face	m^2	5			
		Extra over back excavation in earth for working space for excavation in hard rock					
B1.3.6		Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to strip footings, foundations beams, bases, etc against excavated face	m^2	18			
		Extra over all excavations for carting away					
B1.3.7		Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	40			
		Risk of collapse of excavations					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B1.4.1		Sides of trench and hole excavations not exceeding 1.5m deep	m^2	20			
		G7 Base material supplied by the contractor compacted to 98% Mod AASHTO density					
B1.5.1		Backfilling to trenches, holes, etc	m^3	10			
		Clean sand material supplied by the contractor compacted to 100% MOD AASHTO density					
B1.6.1		Under floors, steps, paving, etc	m^3	2			
		Compaction of surfaces					
B1.7.1		Compaction of ground surface under floors, etc by wetting and compacting with five passes of a ten ton vibratory roller	m^2	12			
		Prescribed density tests on filling					
B1.8.1		Allow the Budgetary Allowance of R5,000.00 (Five Thousand) for prescribed density tests on filling to be used as directed by the Engineer and deducted in whole or in part if not required	Sum	1			
B2		BILL NO 2					
		CONCRETE, FORMWORK AND REINFORCEMENT					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Engineering specifications					
		The contractor is referred to the engineers general notes and specifications for plain and reinforced concrete and must allow for all cost deemed to be incurred in complying with the aforementioned specifications as set-out on the Engineers drawings					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		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 Architect. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Architect (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					
		Formwork to soffits of solid slabs, etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described					
		Temporary working platforms, if so required, are deemed to be included within the rates of these bills of quantities and will not be measured separately. No claim for such working platforms will be considered or entertained.					
		Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Formwork has been measured to the sides of all reinforced concrete in foundations and will be remeasured according to actual usage. However, 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"					
B2.1		UNREINFORCED CONCRETE					
B2.1.1		15MPa/13mm concrete	m^3	1.5			
		Filling to cavity of reinforced masonry walls					
B2.2		UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES					
		15MPa/19mm concrete					
B2.2.1		Surface blinding under footings and bases	m^3	4			
		REINFORCED CONCRETE CAST ON/IN FORMWORK					
B2.3		25MPa/19mm concrete					
B2.3.1		Strip footings	m^3	2.0			
B2.3.2		Bases	m^3	6.1			
B2.3.3		Surface beds cast in panels on waterproofing (including thickenings)	m^3	1.9			
		TEST BLOCKS					
B2.4		Test blocks					
B2.4.1		Making and testing set of three 150 x 150 x 150mm concrete strength test cubes	No	9			
		CONCRETE SUNDRIES					
B2.5		Finishing top surfaces of concrete smooth with a power float					
B2.5.1		Surface beds, slabs, etc	m^2	12			
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		FORMWORK					
B2.6		ROUGH FORMWORK (DEGREE OF ACCURACY III)					
		Rough formwork to sides					
B2.6.1		Strip footings	m²	10			
B2.6.2		Bases	m²	68			
B2.7		MOVEMENT JOINTS, ETC					
		Saw cut joints					
B2.7.1		5 x 40mm Saw cut joints in top of concrete	m	1			
		REINFORCEMENT					
B2.8		High tensile steel reinforcement to structural concrete work					
B2.8.1		10mm Diameter bars	t	0.05			
B2.8.2		12mm Diameter bars	t	0.15			
B2.9		Fabric reinforcement					
B2.9.1		Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m²	12			
B3		BILL NO 3					
		MASONRY					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		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					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		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 waterproof coating					
		Pointing					
		Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc					
		Samples					
		Samples of all masonry building units, except those for walls described as "load bearing", shall consist of a minimum of six units. Samples of building units to be used in walls described as "load bearing" shall consist of thirty units from every thirty thousand units delivered to site					
		FOUNDATION BRICKWORK					
B3.1		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc					
B3.1.1		280mm Hollow walls of two half brick skins including wire ties in Foundations	m²	11			
		SUPERSTRUCTURE BRICKWORK					
B3.2		Brickwork of NFP bricks (14 MPa nominal compressive strength) in class II mortar in non load bearing walls etc					
B3.2.1		Half brick walls	m²	51			
B3.2.2		Half brick walls in beamfilling	m²	41			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B3.3		Brickwork of NFP bricks (14 MPa nominal compressive strength) in 1:4 class I mortar in load bearing walls, etc,					
B3.3.1		One brick walls	m²	8			
B3.3.2		230mm Hollow walls of two half brick skins including wire ties	m²	45			
B3.4		BRICKWORK SUNDRIES					
B3.4.1		Closing 50mm cavity of hollow walls vertically with brickwork half brick wide	m	16			
B3.4.2		Closing 50mm cavity of hollow walls horizontally with two courses of brickwork	m	16			
B3.4.3		Closing 50mm cavity at raking top of hollow walls with two courses of brickwork	m	16			
B3.6		Brickwork reinforcement					
B3.6.1		75mm Wide reinforcement built in horizontally	m	305			
B3.7		Pre-stressed concrete lintels					
B3.7.1		110 x 75mm Lintels in lengths not exceeding 3m	m	12			
B3.8		Galvanised hoop iron cramps, ties, etc					
B3.8.1		30 x 1.6mm Cramp 550mm long with one end fixed to concrete column and other end built into brickwork	m	20			
B4		BILL NO 4					
		WATERPROOFING					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Waterproofing					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs					
		DAMPPROOFING OF WALLS AND FLOORS					
B4.1		One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course					
B4.1.1		In walls	m²	7			
B4.2		One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"					
B4.2.1		Under surface beds	m²	14			
		SEALING STRIPS, JOINT SEALANTS, ETC					
B4.3		Sikaflex pro 2HP two-part polyurethane joint sealing compound including backing cord, bond breaker, "Sika primer-3", etc					
B4.3.1		10 x 10mm polyurethane sealant in isolation joints between surface bed and brick walls	m	18			
B4.4		Approved silicone pointing					
B4.4.1		Between aluminium frames and walls	m	30			
B5		BILL NO 5					
		ROOF COVERINGS, ETC					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Guarantees					
		The contractor will be required to provide a written guarantee for the roof covering as follows: - Galvanised roof covering material - five years - Chromadek roof covering material - ten years - Workmanship - ten years					
B5.1		PROFILED METAL SHEETING AND ACCESSORIES					
		Klip-Lok 700 profile roll-formed in continuous lengths from 0,5mm light industrial Z275 spelter galvanised corrugated sheet steel and accessories, fixed to steel purlins by an approved contractor in strict accordance with manufacturer's specifications by a GRS Approved Contractor					
B5.1.1		Roof covering circular along the fall exceeding 35m and not exceeding 40m radius	m²	18			
B5.1.2		Gable trims 500mm girth	m	8			
		ROOF AND WALL INSULATION					
B5.2		Sisalation FR 430 fire retardant industrial grade aluminium foil insulation single sided, durable, reflective foil laminate incorporating a fire retardant between the various substrates, bonded together with low density polyethylene complete as per "Architect's Specification" or similar approved					
B5.2.1		Insulation laid taut over purlins (at approximately 1 200mm centres) and fixed concurrent with roof coverings complete	m²	18			
B6		BILL NO 6					
		CARPENTRY AND JOINERY					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		SUPPLEMENTARY PREAMBLES					
		SUPPLEMENTARY PREAMBLES					
		Particle board					
		Particle board shall comply with the following specifications: a) SABS 1300 Particle board: exterior and flooring type b) SABS 1301 Particle board: interior type					
		Joinery					
		Descriptions of frames shall be deemed to include frames, transoms, mullions, rails, etc					
		Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes					
		Fixing					
		Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete					
		Decorative laminate finish					
		Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish					
		Weatherboards, glazing beads, putty, fixing beads, edge strips, etc. to glass panes shall be deemed to be included when pricing for timber doors and windows					
B6.1		Everite high density plain nutec-cement					
B6.1.1		15 x 225mm fascia boards fastened to ends of steel trusses complete with H-section cover strips at joints	m	20			
		DOORS ETC					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B6.2		Hollowcore solid flush doors with Sapele veneer on both sides, hung to timber frames (timber frames and ironmongery elsewhere measured) as per architect's schedule					
B6.2.1		44mm Door 813 x 2 035mm high (Type D2)	No	1			
		FRAMED FRAMES ETC					
B6.3		90 x 70mm "Swartland Cape Culture" rebated, moulded, grooved and weather grooved hardwood door frame and 90 x 44mm splay rebated, grooved and weather grooved in accordance with manufacturers recommendations					
B6.3.1		Frame with cill for door size 813 x 2 035mm high	No	1			
B7		BILL NO 7					
		CEILINGS, PARTITIONS AND ACCESS FLOORING					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Descriptions					
		Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete					
		Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere					
B7.1		NAILED UP CEILINGS					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		IsoBoard - Extruded polystyrene insulation board 600mm wide and fixed at right angles to 38 x 38 timber brandering at 400mm centres, using 25mm drywall screws at 150mm centres fixed to timber beams including 600 x 600mm access pane to suit, all in accordance with the manufacturer's instructions and architect drawings.					
B7.1.1		30mm Isoboard ceilings suspended exceeding 1m and not exceeding 2m below steel trusses at 1.2m centres	m^2	12			
		Ceiling cornices					
B7.1.2		75mm Rhino coved cornice to walls	m	20			
B8		BILL NO 8					
		IRONMONGERY					
		SUPPLEMENTARY PREAMBLES					
		Signs are to comply with SANS 1186-1 to 5 and to be to the approval of the local authority. Signs are to have anodised aluminium frames Prices are to include for fixing by approved methods. The use of double sided tape will not be permitted. Surface mounted signs are to be concealed fixed and ceiling mounted signs are to be hung with 2mm diameter stainless steel cables Single sided ceiling mounted signs are to have 2mm satin chrome anodised aluminium back panels Samples, specifications, literature, etc of materials and fabricated articles the tenderer proposes to use shall be submitted with the tender A ten year guarantee on materials and workmanship shall be submitted by the successful tenderer References at the end of the item descriptions are to the relative items on drawings issued separately with these bills of quantities					
B8.1		HINGES, BOLTS, LCOKS,HANDLES, DOOR STOPS, SCREWS, ETC					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Geze					
B8.1.1		Allow the Budgetary Amount of R8,000.00 (eight thousand) NET for ironmongery, to be executed by the main-contractor	PC Sum	1			
B8.1.2		Add for profit	%	10			
B8.1.3		Add for general attendance on sub-contractor	Sum	1			
		PHOTOLUMINESCENT SIGNS					
B8.2		Wall mounted photoluminescent statutory signs in 190 x 190mm modules					
B8.2.1		190 x 190mm Sign with one pictogram (Type Arrow)	No	1			
B8.2.2		190 x 190mm Sign with one pictogram (Type Escape Route)	No	1			
B8.2.3		190 x 190mm Sign with one pictogram (Type Fire Extinguisher)	No	1			
B8.2.4		380 x 190mm Sign with one pictogram (Type EXIT)	No	1			
		BATHROOM FITTINGS					
B8.3		Franke					
B8.3.1		BS618 soap dispenser s/s liquid soap, wall mounted (Code 359800).	No	1			
B8.3.2		BS677 toilet s/s with cover wall mounted (Code 359816).	No	1			
B9		BILL NO 9					
		STRUCTURAL STEELWORK					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
		SUPPLEMENTARY PREAMBLES					
		Descriptions					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Descriptions of bolts shall be deemed to include nuts and washersDescriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concreteWhere anchor bolts are described as embedded in sides or soffits of concrete it shall be deemed to include holes through formwork					
		Structural Steelwork					
		All structural steelwork shall be fabricated and erected in accordance with the latest edition of SABS 1200H All dimensions shall be checked on site before shop drawings commence. Any discrepancies shall be brought to the attention of the engineer A complete set of shop drawings shall be submitted to the engineer for approval before fabrication commences. The contractor shall allow one week for checking and approval by the engineer, and shall also allow for any possible chances to shop drawings The contractor shall design all welds and, where necessary, gussets of sufficient strength, shall be approved to obtain the required weld strength Setting out points (S.O.Pâ??s) at member centroids shall conform to those shown on general arrangement drawings. No eccentricities, except those shown on the engineerâ??s drawings, shall be allowed					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		All structural steelwork shall be minimum grade 350WA A certificate from the steel manufacturer in which the grade of the structural steel is verified shall be handed to the engineer for approval All structural bolts and lugs shall be grade 4.6 galvanised unless otherwise noted and shall be deemed to be included All welds to be minimum 6mm continuous fillet welds The proposed method and sequence of erection of the structure shall be submitted to the engineer for written approval. Such submission is to take place at time of shop drawing submittal. The contractor shall indicate the proposed method of propping to ensure stability of the structure during erection. Such stability during erection remains the contractor's responsibility. Where temporary bracing and propping is necessary, the contractor shall be responsible for the design, erection, maintenance and removal (where necessary) of such supports. Proposal of such bracing or propping shall be submitted to the engineer at an early stage for written approval Structural steel to be engineered to be smooth i.e. no welding spatter, sharp edges, slag etc. should be present prior to the application of the final painting coat					
		Where applicable, non shrink grout (Sika grout 212) is to be provided under base plates before any primary loads are applied to the structure					
		Galvanizing Specification					
		All structural steel to be hot dipped galvanised, in strict accordance with the S.A. Galvanising Association Specification					
		HOT DIPPED GALVANIZED STEEL TRUSSES					
B1.9.1.1		Allow the Budgetary Amount of R180,000.00 (one Hundred and eighty thousand) NET for Builder's Work , to be executed by the main-contractor	PC Sum	1			
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B1.9.1.2		Add for profit	%				
B1.9.1.3		Add for general attendance on sub-contractor	Sum	1			
B10		BILL NO 10					
		METALWORK					
		SUPPLEMENTARY PREAMBLES					
		Warranties and Guarantees					
		A Warranty is to be provided for the laminated safety glass which warrants the product against delaminating and colour degradation for a period of not less than 5 years					
		A Guarantee is to be provided for the powder coating which guarantees the product against peeling and discolouration of all powder coating for a period of not less than 15 years					
		A Certificate of compliance is to be provided that all anodizing supplied meet with SANS 999 in all aspects					
		Structural support					
		No structural support steelwork has been provided for, however should steelwork be necessary it must be sized and included in the cost of the relevant shopfront. No exposed structural support steelwork will be permitted and all sections must be accommodated within the aluminium profile if necessary					
		Top hung windows					
		Subcontractor are to allow for heavy duty friction hinges to all top hung windows in their pricing. Friction hinges must be able to be tightened/adjusted					
		Protection					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Contractor is to ensure that allowances are made for sufficient protection against damage, etc as required and in which case tenders are to allow for protective tape on frames and glazing according the relevant item in this document					
		Finishes					
		Final product shall be free from all sharp edges					
		Ironmongery					
		All ironmongery to be supplied by the Contractor unless otherwise specified. Contractors are to provide samples for approval by the Architect of these ironmongery on submission of their tenders. All ironmongery shall be approved by the Architect prior to installation Sub Contractor to supply all relevant shopfronts with catches, handles, hinges etc. to match shop fronts and doors, all to the Architects approval					
		All sliding gear to sliding doors to be supplied by the contractor unless otherwise specified. Contractors are to provide samples for approval by the Architect of these sliding gear on submission of their tenders. All sliding gear shall be approved by the Architect prior to installation					
		Joints and Sealants					
		All joints in frames shall be made by mechanical means An approved silicone sealant is to be provided for both sides of all internal and external shop fronts between the aluminium frames and brick wall or concrete column and between the aluminium frame and plaster finish					
		Powdercoating					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Aluminium surfaces to receive Bronze powder coating to be applied by a certified markholder of SANS 1578 and SANS 1796					
		Wind Loading					
		The unfactored SABS Wind Loading for : Terrain Category 2 Class A element at Sea Level 10m above ground level Is 1.5 kPa/m2					
		ALUMINIUM WINDOWS					
B10.1		Purpose made external powder coated anodized aluminium window units, colour: "Bronze", complete with frames and subframes as indicated and 6.35mm laminated safety glass, etc. in accordance with AAAMSA standards and glazing strictly according to NBR to comply with SANS 10400 part 'N', including sealing, etc and fixing to brickwork or concrete all in accordance with specifications and architect's drawings					
B10.1.1		Window Type W001 overall size 600 x 900 - Drawing 003/22/BON	No	3			
		ALUMINIUM DOORS					
B10.2		Purpose made internal powder coated anodized aluminium door unit, colour: "Bronze", complete with frames and subframes as indicated, and 6.35mm laminated safety glass, etc. in accordance with AAAMSA standards and glazing strictly according to NBR to comply with SANS 10400 part 'N', including sealing, etc. and fixing to brickwork or concrete all in accordance with specifications and architect's drawing					
B10.2.1		Double door Type D001/ D002 overall size 900x 2 100mm - Drawing 003/22/BON	No	2			
B11		BILL NO 11					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		PLASTERING					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SCREEDS					
B11.1		Screeds on concrete					
B11.1.1		30mm Thick on floors and landings	m²	12			
		INTERNAL PLASTER					
B11.2		Cement plaster on brickwork					
B11.2.1		On walls	m²	45			
B11.2.2		On narrow widths	m²	5			
		EXTERNAL PLASTER					
B11.3		Cement plaster on brickwork					
B11.3.1		On walls	m²	50			
B11.3.2		On narrow widths	m²	5			
B12		BILL NO 12					
		TILING					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill."					
		SUPPLEMENTARY PREAMBLES					
		Descriptions					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Unless described as "fixed with adhesive to plaster (plaster elsewhere measured)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors, etc shall be deemed to include 1:3 plaster bedding. All floor tiles are to be completely covered/backed with adhesive in order to ensure no hollow areas behind tiles.					
		Repairs					
		Repairs to damaged areas in the existing concrete surface bed or slab is to be done using "TAL Superscreed"					
		Sealants, etc					
		Tenders should include in their price for silicone sealant between all skirting tiles and floor tiles.					
		Movement joints					
		Tenders are to include in their price for soft joint and sealants in panels of 3 000 x 3 000mm maximum to floor tiling or in accordance with the manufacturer's requirements. Joints to be sealed with "Sikaflex Pro 2HP" after priming the joint with "Sika Primer". Where practical the bulk of the depth of the joint can be filled with 6mm diameter closed cell polyethylene chord.					
		Grouting joints					
		Joints to be 3 to 5mm maximum width					
		Prime Cost (PC) Sums					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Prime Cost (PC) Sums means an amount of money provided in the bills of quantities for material and goods to be obtained from a supplier nominated by the architect and to be fixed by the contractor (Clause 1.1 of Principal Building Agreement) The prime cost amount shall be omitted from the contract sum and the amounts actually paid by the contractor in respect of the purchase of the nett quantity of such items including delivery to site shall be added to the contract sum The contractor has to allow for labour, profit and waste in his rate over and above the PC amount					
		FLOOR TILING					
B12.1		350 x 350mm Non-slip ceramic tiles (PC Sum R 250/mÂ² excluding VAT supply and delivered to site) fixed with "Gold Star 6" or similar approved adhesive to screeded floors and pointed with "TAL Wall & Floor" or similar approved grouting (Specifications to follow)					
B12.1.1		On floors and landings	m²	12			
B12.1.2		100mm high skirting	m	18			
		CORNER PROTECTORS, DIVIDING STRIPS, ETC					
B12.2		Kirk Marketing or similar approved stainless steel trims					
B12.2.1		Stainless steel square edge trim to thresholds (SQE100)	m	1			
B13		BILL NO 13					
		PLUMBING AND DRAINAGE					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
		SUPPLEMENTARY PREAMBLES					
		uPVC pipes and fittings					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings. Soil, waste and vent pipes and fittings shall be solvent weld jointed					
		uPVC pressure pipes and fittings					
		Pipes for water supply shall be of the class stated. Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints					
		Fixing of pipes					
		Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level					
		Reducing fittings					
		Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained					
		Wire gratings					
		Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings					
		Excavations					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling "Soft rock" and "hard rock" shall be as defined in "Earthworks"					
		Laying, backfilling, bedding, etc of pipes					
		Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructionsWhere no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding					
		Flush pans					
		Flush pans shall have straight or side outlets and "P" or "S" traps as necessary					
		Stainless steel basins, sinks, wash troughs, urinals, etc					
		Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable					
		Waste unions					
		Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings					
		Sealing					
		Prices for sanitary fittings shall include for sealing against walls with silicone sealing compound. This shall apply to all sanitary fittings.					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Valves, etc					
		Descriptions of valves etc shall be deemed to include flanged or screwed connections to piping, reducers, supports etc					
		Painting					
		The Principal Building Contractor will be responsible for painting all pipe work and painting of the pipe work must be included in the tendered rates for the hot, cold and fire water supply as required by law					
		Pricing					
		The tenderer must price each item in this section individually and no changes made by the tenderer shall be recognised Where inclusive items are measured and priced, the contractor must on request, supply full details of the components and prices making up the inclusive items. If the contractor does not supply such details and prices within fourteen days after having been requested to do so, the Quantity Surveyor will determine such at his own discretion					
		PREAMBLES					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		"For Preambles see 'Standard Preambles to Trades'In addition to the 'Standard Preambles to Trades' the following SABS codes are applicable:PIPE THREADS SABS 21GALVANISING SABS 763WROUGHT STEEL SCREWEDFLANGES BS 10/ SABS 1123ERW PIPING SABS 719DENSOWRAP SABS 1117NON-RISING SPINDLE VALVES SABS 665WATER TANKS SABS/CKS 114NOTE:Unless otherwise stated all excavation depths are related to finished levelsNote that all geysers are to be either hung from the roof structure or located on bearing walls, etc and that all hangers, etc must be included to the approval of the engineer. All such bearers, bolts, etc must be allowed for in this tender under the respective item by the tenderer and no claims in this regard will be entertained. Unless stated otherwise, descriptions of pipes in ground are deemed to include for excavation, bedding and backfilling as per the Engineer's details. The stated depths refer to the measurement from finished ground level to invert level of the pipes. No distinction has been made between pipes chased in, built in, or to be suspended from roof trusses, etc. The tenders must study the drawings and familiarise themselves with the extent of the works and do the necessary allowances in the tender as no claims in this regards will be entertained."					
		RAINWATER DISPOSAL					
B13.1		uPVC Downpipes					
B13.1.1		110 x 76mm Diameter rainwater downpipes	m	12			
B13.1.2		Gutter	m	10			
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B13.1.3		Extra over for outlets on eaves gutters	No	4			
B13.1.4		Extra over for shoe	No	4			
B13.2		SANITARY PLUMBING					
B13.2.1		Close Couple Mila front flus white Betta. Product code SAN-BET-LOMB-WH-005	No	1			
B13.2.2		Deluxe Courier Basin. Product code WBDC0208A - 500 x 425mm. Code: SAN-BET-BASN-WH-002	No	1			
B13.2.3		Bathroom Bizzare bay basin mixer standard 90mm - Chrome (BA00010). Product doe TAP-BLU-BAY-CH002	No	1			
B13.3		SANITARY PLUMBING					
B13.3.1		Allow the budgetary Amount of R15,000.00 (Fifteen Thousand) NET for sanitary plumbing, to be executed by the main-contractor	PC Sum	1			
B13.3.2		Add for profit	%				
B13.3.3		Add for general attendance on sub-contractor	Sum	1			
B14		BILL NO 14					
		PAINTWORK					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		ON NEW WORK					
		ON FLOATED PLASTER SURFACES					
B14.1		Prepare and apply one coat "Akroprime AR" masonry primer, one coat "Supercover Dense" acrylic and two coats "Akrosheen Satin Sheen Pure" acrylic paint (paint colour to Architect's specification)					
B14.1.1		On internal walls	m²	45			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B14.2		Prepare and apply one coat "Akroplast" primer and two coats "Akroplast" plaster coating (paint colour to Architect's specification)					
B14.2.2		On external walls	m²	50			
		ON FIBRE-CEMENT BOARD SURFACES					
B14.3		Prepare and apply three coats "Roofbrite Pure Acrylic Coating (colour to Architect's specification)					
B14.3.1		Fascias and barge boards, including priming metal jointing strips	m²	7			
B14.4		ON WOOD SURFACES					
B14.4.1		On doors	m²	7.5			
B14.4.2		On door frames, etc	m²	1			
B15		BILL NO 15					
		GLAZING					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
		MIRRORS, ETC					
B15.1		4mm Silvered float glass copper backed mirrors with 12mm bevelled and polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete					
B15.1.1		Mirrors 600 x 900mm high	No	1			
B16		BILL NO 16					
		BUDGETARY ALLOWANCE					
B16.1		BUILDER'S WORK					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B16.1.1		Allow the Budgetary Amount of R15,000.00 (Fifteen Thousand) NET for Builder's Work , to be executed by the main-contractor	PC Sum	1			
B16.1.2		Add for profit	%	0.00			
B16.1.3		Add for general attendance on sub-contractor	Sum	1			
B16.2		SIGNAGE					
B16.2.1		Allow the Budgetary Amount of R5,000.00 (five thousand) NET for Signage , to be executed by the main-contractor	PC Sum	1			
B16.2.2		Add for profit	%	0.00			
B16.2.3		Add for general attendance on sub-contractor	Sum	1			
B17		BILL NO 17					
B17.1		Distribution Boards & LV Kiosk					
		Supply and installation of LV Kiosks in accordance to SANS regulations.					
		LV Kiosk - 20A Single Phase 231V; Front Access; Bottom Entry; Surface Mounted; Weatherproof (IP65 or higher); Entry with lockable doors. Containing 1x split prepaid metering pad, 1x RSA 3 pin and Euro combined SSO, 1x single lever switch for stall light fitting. Complete.					
B17.1.1		Supply	ea	7			
B17.1.2		Install	ea	7			
B17.2		Modification of existing LV Kiosks to supply new kiosks in accordance to SANS regulations.					
B17.2.1		Installation of split prepaid metering meters, circuit breakers and wiring.	ea	1			
B17.3		Cables/Wiring					
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		PVC Cables					
		Supply, installation, testing and commissioning of Multicore PVC insulated PVC SWA PVC sheathed 600/1000 V cable with copper/aluminium conductors manufactured to SANS 1507-3 regulations. To be installed in direct in trenched sections.					
		16mm² x 3C Cu PVC SWA Cable					
B17.3.1		Supply	m			Rate Only	
B17.3.2		Install	m			Rate Only	
B17.4		Airdac Cables					
		Supply, installation, testing and commissioning of Airdac circular stranded hard drawn copper conductor, XLPE insulated, Polyethylene sheathed cable manufactured to SANS 1507 regulations. Cables to be fitted in P9000 channeling or suspended.					
		10mm² x Airdac Cable; Phase conductor with concentric neutral, earth and data conductors.					
B17.4.1		Supply	m	200			
B17.4.2		Install	m	200			
B17.5		Flat Twin and Earth Wiring					
		Supply, installation, testing and commissioning of Flat twin & Earth Innovative Copper Wiring Cable. Cables to be installed in conduit for lighting and small power					
		1.5mm² x 2C+E Flat Twin					
B17.5.1		Supply	m	50			
B17.5.2		Install	m	50			
		2.5mm² x 2C+E Flat Twin					
B17.5.3		Supply	m	15			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B17.5.4		Install	m	15			
B17.6		Earth Continuity Conductors					
		Bare stranded copper earth wire strapped to cables (terminations elsewhere measured).					
		10mm² BCEW					
B17.6.1		Supply	m	10			
B17.6.2		Install	m	10			
B17.7		Cable/Wire Terminations					
		Cable/Wire terminations complete including glands, shrouds, lugs, connections and commissioning.					
		16mm² x 3C Cu PVC SWA Cable					
B17.7.1		Supply	ea	0			
B17.7.2		Install	ea	0			
		10mm² x Airdac Cable Phase, Earth, Neutral and Data					
B17.7.3		Supply	ea	14			
B17.7.4		Install	ea	14			
B17.8		Flat Twin and Earth Wiring					
		Cable terminations complete including glands, shrouds, lugs, connections and commissioning.					
		1.5mm² x 2C+E Flat Twin					
B17.8.1		Supply	ea	30			
B17.8.2		Install	ea	30			
		2.5mm² x 2C+E Flat Twin					
B17.8.3		Supply	ea	14			
B17.8.4		Install	ea	14			
		Bare Copper Earth Wire Terminations					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		10mm² BCEW					
B17.8.5		Supply	ea	16			
B17.8.6		Install	ea	16			
B17.9		Appliances					
		SANS regulations approved equipment to be used for switched socket outlets and isolators					
		16 Ampere 250V grade RSA switched socket outlet complete in surface mounted box with weatherproof cover plate.					
B17.9.1		Supply	ea	0			
B17.9.2		Install	ea	0			
		16 Ampere 250V grade, single lever one way light switch complete with normal white cover plate, fixed in surface mounted box. (IP 66)					
B17.9.3		Supply	ea	0			
B17.9.4		Install	ea	0			
		16 Ampere 250V grade, single lever one way light switch complete with normal white cover plate, fixed in surface mounted box.					
B17.9.5		Supply	ea	0			
B17.9.6		Install	ea	0			
		Photo-voltic Cell					
B17.9.7		Supply	ea	1			
B17.9.8		Install	ea	1			
B17.10		Sleeves/Cable Trays / Power Skirting					
		Cable Ducting, with all standard accessories (elbows, tee off's, 4way, etc.); support every 1.5m with accessories, clips, rods, etc. Refer to Manufacturers installation. O LINE or Cabstrut.					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		PVC sleeves laid in trenches or placed in position for casting into concrete brickwork and sealed off, inclusive of all accessories.					
		75mm dia Sleeve, KabelFlex					
B17.10.1		Supply	m	70			
B17.10.2		Install	m	70			
B17.11		Conduit & Accessories					
		Galvanised Bosal Conduit installed inside or to surface of ceiling/wall including bending, threading, jointing, short lengths, draw boxes, couplings, bends, tees and saddles. Support every 1.5m with accessories, clips, rods, etc.					
		20mm dia Bosal Conduit					
B17.11.1		Supply	m	45			
B17.11.2		Install	m	45			
		50mm dia 2-way galvanised round boxes, surface mounted incuding locknuts & bushes, with covers. For light fittings in accordance with quality specification.					
B17.11.3		Supply	ea	11			
B17.11.4		Install	ea	11			
		Earthing					
B17.11.5		Earthing of the complete electrical installation according to the SANS 10142 regulations.	Sum	1			
B17.12		Testing and Commissioning					
B17.12.1		Test and commissioning of the complete low voltage installation.	ea	8			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B17.13		Lighting					
		TYPE A - BEKARAY 70W HPS; 4000k; STANDARD GREY; INSTALLED ON EXISTING POST					
B17.13.1		Supply	ea	2			
B17.13.2		Install	ea	2			
		TYPE B - SERIES 30 13W; 4000k; BLACK; HELICOIL					
B17.13.3		Supply	ea	9			
B17.13.4		Install	ea	9			
		TYPE D - 14W LED BULB IN BALL CEILING FITTING					
B17.13.5		Supply	ea	2			
B17.13.6		Install	ea	2			
		BILL NO 18					
B18		CIVIL WORKS					
	SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)					
		Excavation					
B18.1	PS DB 8.3.2	a) Excavate in all materials for trenches backfill, compact, and dispose of surplus material					
		For pipes with nominal diam up to 110mm					
		Over and Up to					
B18.1.1		0,0m 1,5m	m	12.00			
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
	PS DB 8.3.2	b) Extra-over item (8.3.2) above for::					
B18.1.2		3) Hard rock excavation	m^3	2.00			
B18.1.3		c) Excavate and dispose of unsuitable material from trench bottom	m^3	2.00			
	DB 8.3.3	**Excavation Anchillaries**					
B18.2		Make up deficiency in backfill material					
B18.2.1	PS DB 8.3.3.1	c) by importation from commercial sources (clean sand compact ed to 100% MAASHTO density)	m^3	2.00			
B18.2.2	PS DB 8.3.3.3	Compaction under surfaces exposed to traffic	m^3	2.00			
		Existing Services					
B18.3	PS DB 8.3.5	a) Services that intersect a trench					
B18.3.1		Stormwater pipes up to 450mm diam	No.	1.00			
B18.3.2		Sewer pipes up to 200mm diam	No.	1.00			
B18.3.3		Water mains up to 200mm diam	No.	1.00			
B18.3.4		Electrical cables	No.	1.00			
B18.3.5		Telkom and other data sleeves	No.	1.00			
B18.4	PS DB 8.3.5	b) Services adjoining a trench excavation					
B18.4.1		Electrical cables	m	11.00			
B18.4.2		Telkom and other data cables	m	11.00			
		Finishing					
B18.5	PS DB 8.3.6.1	Reinstate road surfaces complete with all courses					
B18.5.1		Reinstate existing paved roads complete with all courses	m^2	75.00			
	PS DB 8.3.6.2	Extra over item PS DB 8.3.6.1 for importing materials from commercial sources					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
B18.5.2		Subbase G5 material	m³	12.00			
B18.5.3		Base course G4 material	m³	12.00			
B18.6	SABS 1200 L	MEDIUM-PRESSURE PIPELINES					
		HDPE-pipes					
	PS L 8.2.1	Supply, lay, and bed pipes complete with couplings					
B18.6.1		20mm diam PE 100 PN 12.5	m	26.00			
	PS L 8.2.16	Connect to existing pipeline					
B18.6.2		Onto 110mm complete with super saddle with brass insert, star screw	No	1.00			
		Ancillaries					
B18.7	PS L 8.2.13	Tap					
B18.7.1		Install new tap as per detail	No.	2.00			
	SANS 1200 LB	BEDDING (PIPES)					
	8.2.2	Supply only of bedding by importation					
B18.8	8.2.2.3	From commercial sources (provisional)					
B18.8.1		a) Selected granular material	m³	2.00			
B18.8.2		b) Selected fill material	m³	5.00			
	SABS 1200 DB	EARTHWORKS (PIPE TRENCHES)					
		Excavation					
B18.9	8.3.2	a) Excavate in all materials for trenches backfill, compact, and dispose of surplus material					
		For pipes with nominal diam up to 160mm					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Over and Up to					
B18.9.1		1,5m 2,5m	m	5.00			
B18.9.2		2,5m 3,5m	m	5.00			
B18.9.3		3,5m 4,5m	m	2			
B18.9.4	PS DB 8.3.2	d) Excavate by hand to expose existing services	m^3	2			
	8.3.5	Existing services that intersect of adjoin a trench					
		Existing Services					
	PS DB 8.3.5	a) Services that intersect a trench					
B18.9.5		Electrical Cables	No.	1.00			
B18.9.6		Data or telecommunication cables	No.	1.00			
	SABS 1200 LB	BEDDING (PIPES)					
B18.10	8.2.2	Supply only of bedding by importation					
	PS L 8.2.2.3	From commercial sources					
B18.10.1		a) Selected granular material	m^3	1			
B18.10.2		b) Selected fill material	m^3	3			
	SABS 1200 LD	SEWERS					
		uPVC-pipes					
B18.11	8.2.1	Supply, lay, joint, bed Class B and test sewer pipes with seal ring joints					
B18.11.1		a) 110mm diam Class 34	m	12			
TOTAL CARRIED FORWARD							

BONNIEVALE TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
	8.2.3	Manholes					
B18.12		Precast concrete manholes 1,0m diam complete with Type 2A SABS 558 heavy duty cast iron cover and frame for pipe diameters up to 110mm for depths:					
		Over and Up to					
B18.12.1		3,5m 4,5m	No.	1			
B18.13		Connect into new manhole					
B18.13.1	PS LD 8.2.11	Connection to existing sewers	No	1			
TOTAL CARRIED FORWARD TO SUMMARY							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
		MONTAGU TRADING STALLS					
		BILL NO 1					
C1		EARTHWORKS					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Nature of the ground					
		The Tenderer shall acquaint himself by personal examination of the nature of the ground. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" and where conditions of a more difficult character are indicated these are separately measured					
		Carting away of excavated material					
		Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or alternatively, from stock piles situated on the building site					
C1.1		SITE CLEARANCE ETC					
		Site clearance					
C1.1.1		Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m²	8			
C1.1.2		Stripping average 150mm thick layer of top soil and stockpile on site	m³	2			
C1.1.3		Remove and spoil existing sanitary fixtures (6 toilets, 3 urinals, 2 basins)	Sum	1			
C1.1.4		Remove and spoil existing floor and wall tiles	m²	62			
C1.1.5		Remove and spoil existing premix	m²	270			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C1.2		EXCAVATION, FILLING, ETC					
		Excavation in earth not exceeding 2m deep					
C1.2.1		To reduce levels to final levels under floors, etc	m^3	6			
C1.2.2		Trenches	m^3	10			
C1.2.3		Holes	m^3	23			
C1.3		Back excavation of vertical sides of excavation in earth for working space including backfilling compacted to 98% Mod AASHTO density					
C1.3.1		Not exceeding 500mm deep for placing and removing formwork to walls etc against excavated face	m^2	10			
C1.3.2		Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to bases, foundation beams, etc against excavated face	m^2	30			
		Extra over excavations for excavations in					
C1.3.3		Soft Rock	m^3	5			
C1.3.4		Hard Rock	m^3	2			
		Extra over back excavation in earth for working space for excavation in soft rock					
C1.3.5		Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to strip footings, foundations beams, bases, etc against excavated face	m^2	5			
		Extra over back excavation in earth for working space for excavation in hard rock					
C1.3.6		Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to strip footings, foundations beams, bases, etc against excavated face	m^2	15			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Extra over all excavations for carting away					
C1.3.7		Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	40			
		Risk of collapse of excavations					
C1.4.1		Sides of trench and hole excavations not exceeding 1.5m deep	m^2	30			
		G7 Base material supplied by the contractor compacted to 98% Mod AASHTO density					
C1.5.1		Backfilling to trenches, holes, etc	m^3	10			
		Clean sand material supplied by the contractor compacted to 100% MOD AASHTO density					
C1.6.1		Under floors, steps, paving, etc	m^3	2			
		Compaction of surfaces					
C1.7.1		Compaction of ground surface under floors, etc by wetting and compacting with five passes of a ten ton vibratory roller	m^2	12			
		Prescribed density tests on filling					
C1.8.1		Allow the Budgetary Allowance of R5,000.00 (Five Thousand) for prescribed density tests on filling to be used as directed by the Engineer and deducted in whole or in part if not required	Sum	1			
C2		BILL NO 2					
		CONCRETE, FORMWORK AND REINFORCEMENT					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Engineering specifications					
		The contractor is referred to the engineers general notes and specifications for plain and reinforced concrete and must allow for all cost deemed to be incurred in complying with the aforementioned specifications as set-out on the Engineers drawings					
		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 Architect. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Architect (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					
		Formwork to soffits of solid slabs, etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Temporary working platforms, if so required, are deemed to be included within the rates of these bills of quantities and will not be measured separately. No claim for such working platforms will be considered or entertained.					
		Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described					
		Formwork has been measured to the sides of all reinforced concrete in foundations and will be remeasured according to actual usage. However, 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"					
C2.1		UNREINFORCED CONCRETE					
C2.1.1		15MPa/13mm concrete	m^3	2.0			
		Filling to cavity of reinforced masonry walls					
C2.2		UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES					
		15MPa/19mm concrete					
C2.2.1		Surface blinding under footings and bases	m^3	5.0			
		REINFORCED CONCRETE CAST ON/IN FORMWORK					
C2.3		25MPa/19mm concrete					
C2.3.1		Strip footings	m^3	20.0			
C2.3.2		Surface beds cast in panels on waterproofing (including thickenings)	m^3	25.0			
C2.3.3		Underpinning of existing wall as indicated by the Engineer on site	m^3	1.0			
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		TEST BLOCKS					
		30MPa/19mm concrete					
C2.3.4		Beams	m³	2.00			
C2.3.5		Suspended slabs	m³	0.50			
C2.4		Test blocks					
C2.4.1		Making and testing set of three 150 x 150 x 150mm concrete strength test cubes	No	24			
		CONCRETE SUNDRIES					
C2.5		Finishing top surfaces of concrete smooth with a power float					
C2.5.1		Surface beds, slabs, etc	m²	250			
		FORMWORK					
C2.6		ROUGH FORMWORK (DEGREE OF ACCURACY III)					
		Rough formwork to sides					
C2.6.1		Strip footings	m²	10			
C2.6.2		Bases	m²	68			
C2.7		MOVEMENT JOINTS, ETC					
		Saw cut joints					
C2.7.1		5 x 40mm Saw cut joints in top of concrete	m	79			
		REINFORCEMENT					
C2.8		High tensile steel reinforcement to structural concrete work					
C2.8.1		10mm Diameter bars	t	0.05			
C2.8.2		12mm Diameter bars	t	0.15			
C2.9		Fabric reinforcement					
C2.9.1		Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m²	245			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C3		BILL NO 3					
		MASONRY					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		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 waterproof coating					
		Pointing					
		Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc					
		Samples					
		Samples of all masonry building units, except those for walls described as "load bearing", shall consist of a minimum of six units. Samples of building units to be used in walls described as "load bearing" shall consist of thirty units from every thirty thousand units delivered to site					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		FOUNDATION BRICKWORK					
C3.1		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc					
C3.1.1		280mm Hollow walls of two half brick skins including wire ties in Foundations	m²	6			
		SUPERSTRUCTURE BRICKWORK					
C3.2		Brickwork of NFP bricks (14 MPa nominal compressive strength) in 1:4 class I mortar in load bearing walls, etc,					
C3.2.1		One brick walls	m²	10			
C3.2.2		230mm Hollow walls of two half brick skins including wire ties	m²	35			
C3.3		BRICKWORK SUNDRIES					
C3.3.1		Closing 50mm cavity of hollow walls vertically with brickwork half brick wide	m	16			
C3.3.2		Closing 50mm cavity of hollow walls horizontally with two courses of brickwork	m	16			
C3.3.3		Closing 50mm cavity at raking top of hollow walls with two courses of brickwork	m	16			
C3.4		Brickwork reinforcement					
C3.4.1		75mm Wide reinforcement built in horizontally	m	305			
C3.5		Pre-stressed concrete lintels					
C3.5.1		110 x 75mm Lintels in lengths not exceeding 3m	m	4			
C3.6		Galvanised hoop iron cramps, ties, etc					
C3.6.1		30 x 1.6mm Cramp 550mm long with one end fixed to existing wall and other end built into new brickwork	m	40			
C4		BILL NO 4					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		WATERPROOFING					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Waterproofing					
		Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs					
		DAMPPROOFING OF WALLS AND FLOORS					
C4.1		One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course					
C4.1.1		In walls	m²	5			
C4.2		One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"					
C4.2.1		Under surface beds	m²	12			
		SEALING STRIPS, JOINT SEALANTS, ETC					
C4.3		Sikaflex pro 2HP two-part polyurethane joint sealing compound including backing cord, bond breaker, "Sika primer-3", etc					
C4.3.1		10 x 10mm polyurethane sealant in isolation joints between surface bed and brick walls	m	8			
C4.4		Approved silicone pointing					
C4.4.1		Between aluminium frames and walls	m	90			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C5		BILL NO 5					
		ROOF COVERINGS, ETC					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Guarantees					
		The contractor will be required to provide a written guarantee for the roof covering as follows: - Galvanised roof covering material - five years - Chromadek roof covering material - ten years - Workmanship - ten years					
C5.1		PROFILED METAL SHEETING AND ACCESSORIES					
		Klip-Lok 700 profile roll-formed in continuous lengths from 0,5mm light industrial Z275 spelter galvanised corrugated sheet steel and accessories, fixed to steel purlins by an approved contractor in strict accordance with manufacturer's specifications by a GRS Approved Contractor					
C5.1.1		Roof covering circular along the fall exceeding 35m and not exceeding 40m radius	m²	115			
C5.1.2		Gable trims 500mm girth	m	25			
C6		BILL NO 6					
		CARPENTRY AND JOINERY					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
		SUPPLEMENTARY PREAMBLES					
		SUPPLEMENTARY PREAMBLES					
		Particle board					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Particle board shall comply with the following specifications: a) SABS 1300 Particle board: exterior and flooring type b) SABS 1301 Particle board: interior type					
		Joinery					
		Descriptions of frames shall be deemed to include frames, transoms, mullions, rails, etc					
		Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes					
		Fixing					
		Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete					
		Decorative laminate finish					
		Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish					
		Weatherboards, glazing beads, putty, fixing beads, edge strips, etc. to glass panes shall be deemed to be included when pricing for timber doors and windows					
C6.1		Everite high density plain nutec-cement					
C6.1.1		15 x 225mm fascia boards fastened to ends of steel trusses complete with H-section cover strips at joints	m	60			
		DOORS ETC					
C6.2		Hollowcore solid flush doors with Sapele veneer on both sides, hung to timber frames (timber frames and ironmongery elsewhere measured) as per architect's schedule					
C6.2.1		44mm Door 813 x 2 035mm high (Type D2) as per Architect's schedule DOHS/BOTRIVIER/06	No	7			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		FRAMED FRAMES ETC					
C6.3		90 x 70mm "Swartland Cape Culture" rebated, moulded, grooved and weather grooved hardwood door frame and 90 x 44mm splay rebated, grooved and weather grooved in accordance with manufacturers recommendations					
C6.3.1		Frame with cill for door size 813 x 2 035mm high	No	1			
C7		BILL NO 7					
		CEILINGS, PARTITIONS AND ACCESS FLOORING					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SUPPLEMENTARY PREAMBLES					
		Descriptions					
		Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete					
		Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere					
C7.1		NAILED UP CEILINGS					
		IsoBoard - Extruded polystyrene insulation board 600mm wide and fixed at right angles to 38 x 38 timber brandering at 400mm centres, using 25mm drywall screws at 150mm centres fixed to timber beams including 600 x 600mm access pane to suit, all in accordance with the manufacturer's instructions and architect drawings.					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C7.1.1		30mm Isoboard ceilings suspended exceeding 1m and not exceeding 2m below steel trusses at 1.2m centres	m²	39			
		Ceiling cornices					
C7.1.2		75mm Rhino coved cornice to walls	m	70			
C8		BILL NO 8					
		IRONMONGERY					
		SUPPLEMENTARY PREAMBLES					
		Signs are to comply with SANS 1186-1 to 5 and to be to the approval of the local authority. Signs are to have anodised aluminium frames Prices are to include for fixing by approved methods. The use of double sided tape will not be permitted. Surface mounted signs are to be concealed fixed and ceiling mounted signs are to be hung with 2mm diameter stainless steel cables Single sided ceiling mounted signs are to have 2mm satin chrome anodised aluminium back panels Samples, specifications, literature, etc of materials and fabricated articles the tenderer proposes to use shall be submitted with the tender A ten year guarantee on materials and workmanship shall be submitted by the successful tenderer References at the end of the item descriptions are to the relative items on drawings issued separately with these bills of quantities					
C8.1		HINGES, BOLTS, ETC					
		Geze					
C8.1.1		Allow the Budgetary Amount of R20,000.00 (twenty thousand) NET for ironmongery, to be executed by the main-contractor	PC Sum	1			
C8.1.2		Add for profit	%	10			
C8.1.3		Add for general attendance on sub-contractor	Sum	1			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		PHOTOLUMINESCENT SIGNS					
C8.2		Wall mounted photoluminescent statutory signs in 190 x 190mm modules					
C8.2.1		190 x 190mm Sign with one pictogram (Type Arrow)	No	2			
C8.2.2		190 x 190mm Sign with one pictogram (Type Escape Route)	No	2			
C8.2.3		190 x 190mm Sign with one pictogram (Type Fire Extinguisher)	No	2			
C8.2.4		380 x 190mm Sign with one pictogram (Type EXIT)	No	2			
		BATHROOM FITTINGS					
C8.3		Franke					
C8.3.1		BS618 soap dispenser s/s liquid soap, wall mounted (Code 359800).	No	3			
C8.3.2		BS677 toilet s/s with cover wall mounted (Code 359816).	No	7			
C8.3.3		750 x 95 Grab Rail	No	1			
C8.3.4		450 x 95 Grab Rail	No	1			
C8.3.5		Toilet Rool Holder - 150 x 130 x 100mm. Product code CHRX675	No	1			
C8.3.6		Fold down grab rail 850 x 100 x 249mm	No	1			
C9		BILL NO 9					
		STRUCTURAL STEELWORK					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
		SUPPLEMENTARY PREAMBLES					
		Descriptions					
		Descriptions of bolts shall be deemed to include nuts and washersDescriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concreteWhere anchor bolts are described as embedded in sides or soffits of concrete it shall be deemed to include holes through formwork					
		Structural Steelwork					
		All structural steelwork shall be fabricated and erected in accordance with the latest edition of SABS 1200H All dimensions shall be checked on site before shop drawings commence. Any discrepancies shall be brought to the attention of the engineer A complete set of shop drawings shall be submitted to the engineer for approval before fabrication commences. The contractor shall allow one week for checking and approval by the engineer, and shall also allow for any possible chances to shop drawings The contractor shall design all welds and, where necessary, gussets of sufficient strength, shall be approved to obtain the required weld strength Setting out points (S.O.Pâ??s) at member centroids shall conform to those shown on general arrangement drawings. No eccentricities, except those shown on the engineerâ??s drawings, shall be allowed					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		All structural steelwork shall be minimum grade 350WA A certificate from the steel manufacturer in which the grade of the structural steel is verified shall be handed to the engineer for approval All structural bolts and lugs shall be grade 4.6 galvanised unless otherwise noted and shall be deemed to be included All welds to be minimum 6mm continuous fillet welds The proposed method and sequence of erection of the structure shall be submitted to the engineer for written approval. Such submission is to take place at time of shop drawing submittal. The contractor shall indicate the proposed method of propping to ensure stability of the structure during erection. Such stability during erection remains the contractor's responsibility. Where temporary bracing and propping is necessary, the contractor shall be responsible for the design, erection, maintenance and removal (where necessary) of such supports. Proposal of such bracing or propping shall be submitted to the engineer at an early stage for written approval Structural steel to be engineered to be smooth i.e. no welding spatter, sharp edges, slag etc. should be present prior to the application of the final painting coat					
		Where applicable, non shrink grout (Sika grout 212) is to be provided under base plates before any primary loads are applied to the structure					
		Galvanizing Specification					
		All structural steel to be hot dipped galvanised, in strict accordance with the S.A. Galvanising Association Specification					
		HOT DIPPED GALVANIZED STEEL TRUSSES					
C1.9.2.1		Allow the Budgetary Amount of R25,000.00 (twenty five thousand) NET for manufacturing of gates, to be executed by the main-contractor	Prov Sum	1			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C1.9.2.2		Add for profit	%				
C1.9.2.3		Add for general attendance on sub-contractor	Sum	1			
C10		BILL NO 10					
		METALWORK					
		SUPPLEMENTARY PREAMBLES					
		Warranties and Guarantees					
		A Warranty is to be provided for the laminated safety glass which warrants the product against delaminating and colour degradation for a period of not less than 5 years					
		A Guarantee is to be provided for the powder coating which guarantees the product against peeling and discolouration of all powder coating for a period of not less than 15 years					
		A Certificate of compliance is to be provided that all anodizing supplied meet with SANS 999 in all aspects					
		Structural support					
		No structural support steelwork has been provided for, however should steelwork be necessary it must be sized and included in the cost of the relevant shopfront. No exposed structural support steelwork will be permitted and all sections must be accommodated within the aluminium profile if necessary					
		Top hung windows					
		Subcontractor are to allow for heavy duty friction hinges to all top hung windows in their pricing. Friction hinges must be able to be tightened/adjusted					
		Protection					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Contractor is to ensure that allowances are made for sufficient protection against damage, etc as required and in which case tenders are to allow for protective tape on frames and glazing according the relevant item in this document					
		Finishes					
		Final product shall be free from all sharp edges					
		Ironmongery					
		All ironmongery to be supplied by the Contractor unless otherwise specified. Contractors are to provide samples for approval by the Architect of these ironmongery on submission of their tenders. All ironmongery shall be approved by the Architect prior to installation Sub Contractor to supply all relevant shopfronts with catches, handles, hinges etc. to match shop fronts and doors, all to the Architects approval					
		All sliding gear to sliding doors to be supplied by the contractor unless otherwise specified. Contractors are to provide samples for approval by the Architect of these sliding gear on submission of their tenders. All sliding gear shall be approved by the Architect prior to installation					
		Joints and Sealants					
		All joints in frames shall be made by mechanical means An approved silicone sealant is to be provided for both sides of all internal and external shop fronts between the aluminium frames and brick wall or concrete column and between the aluminium frame and plaster finish					
		Powdercoating					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Aluminium surfaces to receive Bronze powder coating to be applied by a certified markholder of SANS 1578 and SANS 1796					
		Wind Loading					
		The unfactored SABS Wind Loading for : Terrain Category 2 Class A element at Sea Level 10m above ground level Is 1.5 kPa/m2					
		ALUMINIUM WINDOWS					
C10.1		Purpose made external powder coated anodized aluminium window units, colour: "Bronze", complete with frames and subframes as indicated and 6.35mm laminated safety glass, etc. in accordance with AAAMSA standards and glazing strictly according to NBR to comply with SANS 10400 part 'N', including sealing, etc and fixing to brickwork or concrete all in accordance with specifications and architect's drawings					
C10.1.1		Window Type W1 overall size 900 x 600mm, including all ironmongery, Refer to drawing W0.01_A	No	2			
		ALUMINIUM DOORS					
C10.2		Purpose made internal powder coated anodized aluminium door unit, colour: "Bronze", complete with frames and subframes as indicated, and 6.35mm laminated safety glass, etc. in accordance with AAAMSA standards and glazing strictly according to NBR to comply with SANS 10400 part 'N', including sealing, etc. and fixing to brickwork or concrete all in accordance with specifications and architect's drawing					
C10.2.1		Single door Type D1 overall size 900 x 2 100mm high including all ironmongery - Refer to drawing D0.02_B	No	1			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C10.2.2		New garage overall door size 2248m x 2000mm including all ironmongery - Refer to drawing D0.02_B	No	16			
C11		BILL NO 11					
		PLASTERING					
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		SCREEDS					
C11.1		Screeds on concrete					
C11.1.1		30mm Thick on floors and landings	m²	7			
		INTERNAL PLASTER					
C11.2		Cement plaster on brickwork					
C11.2.1		On walls	m²	130			
C11.2.2		On narrow widths	m²	20			
		EXTERNAL PLASTER					
C11.3		Cement plaster on brickwork					
C11.3.1		On walls	m²	110			
C11.3.2		On narrow widths	m²	10			
C12		BILL NO 12					
		TILING					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill."					
		SUPPLEMENTARY PREAMBLES					
		Descriptions					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Unless described as "fixed with adhesive to plaster (plaster elsewhere measured)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors, etc shall be deemed to include 1:3 plaster bedding. All floor tiles are to be completely covered/backed with adhesive in order to ensure no hollow areas behind tiles.					
		Repairs					
		Repairs to damaged areas in the existing concrete surface bed or slab is to be done using "TAL Superscreed"					
		Sealants, etc					
		Tenders should include in their price for silicone sealant between all skirting tiles and floor tiles.					
		Movement joints					
		Tenders are to include in their price for soft joint and sealants in panels of 3 000 x 3 000mm maximum to floor tiling or in accordance with the manufacturer's requirements. Joints to be sealed with "Sikaflex Pro 2HP" after priming the joint with "Sika Primer". Where practical the bulk of the depth of the joint can be filled with 6mm diameter closed cell polyethylene chord.					
		Grouting joints					
		Joints to be 3 to 5mm maximum width					
		Prime Cost (PC) Sums					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Prime Cost (PC) Sums means an amount of money provided in the bills of quantities for material and goods to be obtained from a supplier nominated by the architect and to be fixed by the contractor (Clause 1.1 of Principal Building Agreement) The prime cost amount shall be omitted from the contract sum and the amounts actually paid by the contractor in respect of the purchase of the nett quantity of such items including delivery to site shall be added to the contract sum The contractor has to allow for labour, profit and waste in his rate over and above the PC amount					
		FLOOR TILING					
C12.1		600 x 600 Zarina White Eco TecShiny Glazed Porcelain Floor tile					
C12.1.1		On floors and landings	m²	70			
C12.1.2		100mm high skirting	m	78			
		WALL TILING					
C12.2		600 x 600 Zarina White Eco Tech Shiny glazed porcelain floor tile					
C12.2.1		On walls	m²	10			
		CORNER PROTECTORS, DIVIDING STRIPS, ETC					
C12.3		Kirk Marketing or similar approved stainless steel trims					
C12.3.1		Stainless steel square edge trim to thresholds (SQE100)	m	5			
C13		BILL NO 13					
		PLUMBING AND DRAINAGE					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		SUPPLEMENTARY PREAMBLES					
		uPVC pipes and fittings					
		Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings. Soil, waste and vent pipes and fittings shall be solvent weld jointed					
		uPVC pressure pipes and fittings					
		Pipes for water supply shall be of the class stated. Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints					
		Fixing of pipes					
		Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level					
		Reducing fittings					
		Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained					
		Wire gratings					
		Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings					
		Excavations					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling "Soft rock" and "hard rock" shall be as defined in "Earthworks"					
		Laying, backfilling, bedding, etc of pipes					
		Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructionsWhere no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding					
		Flush pans					
		Flush pans shall have straight or side outlets and "P" or "S" traps as necessary					
		Stainless steel basins, sinks, wash troughs, urinals, etc					
		Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable					
		Waste unions					
		Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings					
		Sealing					
		Prices for sanitary fittings shall include for sealing against walls with silicone sealing compound. This shall apply to all sanitary fittings.					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Valves, etc					
		Descriptions of valves etc shall be deemed to include flanged or screwed connections to piping, reducers, supports etc					
		Painting					
		The Principal Building Contractor will be responsible for painting all pipe work and painting of the pipe work must be included in the tendered rates for the hot, cold and fire water supply as required by law					
		Pricing					
		The tenderer must price each item in this section individually and no changes made by the tenderer shall be recognised Where inclusive items are measured and priced, the contractor must on request, supply full details of the components and prices making up the inclusive items. If the contractor does not supply such details and prices within fourteen days after having been requested to do so, the Quantity Surveyor will determine such at his own discretion					
		PREAMBLES					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		"For Preambles see 'Standard Preambles to Trades'In addition to the 'Standard Preambles to Trades' the following SABS codes are applicable:PIPE THREADS SABS 21GALVANISING SABS 763WROUGHT STEEL SCREWEDFLANGES BS 10/ SABS 1123ERW PIPING SABS 719DENSOWRAP SABS 1117NON-RISING SPINDLE VALVES SABS 665WATER TANKS SABS/CKS 114NOTE:Unless otherwise stated all excavation depths are related to finished levelsNote that all geysers are to be either hung from the roof structure or located on bearing walls, etc and that all hangers, etc must be included to the approval of the engineer. All such bearers, bolts, etc must be allowed for in this tender under the respective item by the tenderer and no claims in this regard will be entertained. Unless stated otherwise, descriptions of pipes in ground are deemed to include for excavation, bedding and backfilling as per the Engineer's details. The stated depths refer to the measurement from finished ground level to invert level of the pipes. No distinction has been made between pipes chased in, built in, or to be suspended from roof trusses, etc. The tenders must study the drawings and familiarise themselves with the extent of the works and do the necessary allowances in the tender as no claims in this regards will be entertained."					
		RAINWATER DISPOSAL					
C13.1		uPVC Downpipes					
C13.1.1		110 x 76mm Diameter rainwater downpipes	m	15			
C13.1.2		Gutter	m	54			
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C13.1.3		Extra over for outlets on eaves gutters	No	5			
C13.1.4		Extra over for shoe	No	5			
		Toilets, urinals, basins and taps					
C13.2		Bathroom Bizzare					
C13.2.1		Bambino Low level suite. Procut code 01Bambino	No	1			
C13.2.2		Close Couple Mila front flus white Betta. Product code SAN-BET-LOMB-WH-005	No	12			
C13.2.3		Deluxe Courier Basin. Product code (WBDC0208A) 500 x 425mm	No	1			
C13.2.4		Deluxe Courier Basin. Product code WBDC0208A - 500 x 425mm. Code: SAN-BET-BASN-WH-002	No	3			
C13.2.5		Bettta Ben white wall mounted unrinal including installation kit	No	3			
C13.2.6		Elbow Action bsin mixed medium - Chrome (MD0010). Product code: TAP-BLU-ELBOW-CH-002	No	1			
C13.2.7		Bathroom Bizzare bay basin mixer standard 90mm - Chrome (BA00010). Product doe TAP-BLU-BAY-CH002	No	3			
C13.3		SANITARY PLUMBING					
C13.3.1		Allow the budgetary Amount of R40,000.00 (forty Thousand) NET for sanitary plumbing, to be executed by the main-contractor	Prov Sum	1			
C13.3.2		Add for profit	%				
C13.3.3		Add for general attendance on sub-contractor	Sum	1			
C14		BILL NO 14					
		PAINTWORK					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill					
		ON NEW WORK					
		ON FLOATED PLASTER SURFACES					
C14.1		Prepare and apply one coat "Akroprime AR" masonry primer, one coat "Supercover Dense" acrylic and two coats "Akrosheen Satin Sheen Pure" acrylic paint (paint colour to Architect's specification)					
C14.1.1		On internal walls	m²	150.00			
C14.2		Prepare and apply one coat "Akroplast" primer and two coats "Akroplast" plaster coating (paint colour to Architect's specification)					
C14.2.2		On external walls	m²	120.00			
		ON FIBRE-CEMENT BOARD SURFACES					
C14.3		Prepare and apply three coats "Roofbrite Pure Acrylic Coating (colour to Architect's specification)					
C14.3.1		Fascias and barge boards, including priming metal jointing strips	m²	5.00			
C14.4		ON WOOD SURFACES					
C14.4.1		On doors	m²	19.00			
C14.4.2		On door frames, etc	m²	3.00			
C15		BILL NO 15					
		GLAZING					
		"NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill"					
		MIRRORS, ETC					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C15.1		4mm Silvered float glass copper backed mirrors with 12mm bevelled and polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete					
C15.1.1		Mirrors 600 x 900mm high	No	4			
C16		BILL NO 16					
		BUDGETARY ALLOWANCE					
C16.1		BUILDER'S WORK					
C16.1.1		Allow the Budgetary Amount of R15,000.00 (Fifteen Thousand) NET for Builder's Work , to be executed by the main-contractor	Prov Sum	1			
C16.1.2		Add for profit	%	0.00			
C16.1.3		Add for general attendance on sub-contractor	Sum	1			
C16.2		SIGNAGE					
C16.2.1		Allow the Budgetary Amount of R5,000.00 (five thousand) NET for Signage , to be executed by the main-contractor	Prov Sum	1			
C16.2.2		Add for profit	%	0.00			
C16.2.3		Add for general attendance on sub-contractor	Sum	1			
C17		BILL NO 17					
		Distribution Boards & LV Kiosk					
		Supply and installation of LV Kiosks in accordance to SANS regulations.					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C17.1		LV Kiosk - 20A Single Phase 231V; Front Access; Bottom Entry; Surface Mounted; Entry with lockable doors. Containing 1x split prepaid metering pad, 2x RSA 3 pin and Euro combined SSO, 1x single lever switch for stall light fitting. Complete. Refer to drawing no. 22C069-E20 'TYPICAL ELECTRICAL KIOSK'.					
C17.1.1		Supply	ea	1			
C17.1.2		Install	ea	1			
		Supply and installation of Main / Sub Distribution Power Switchboards in accordance to SANS regulations, Recommended Manufacturer: EBM, Profection, Switch Board Manufacturers.					
		Distribution Board - 60A Three Phase 400/231V; Front Access; Bottom Entry; Weatherproof (IP65 or higher); Floor Mounted; Entry with lockable doors. Containing 4x prepaid split metering meters and 1x lighting meter; Supplying 4x electrical kiosks and 2x Light Circuits. Complete. Refer to drawing no. 22C069-E20 'STALLS DISTRIBUTION BOARD'.					
C17.1.3		Supply	ea	1			
C17.1.4		Install	ea	1			
		Cables/Wiring					
		PVC Cables					
		Supply, installation, testing and commissioning of Multicore PVC insulated PVC SWA PVC sheathed 600/1000 V cable with copper/Aluminium conductors manufactured to SANS 1507-3 regulations. To be installed in direct in trenched sections.					
		16mm² x 4C Cu PVC SWA Cable					
C17.1.5		Supply	m	25			
C17.1.6		Install	m	25			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		Airdac Cables					
		Supply, installation, testing and commissioning of Airdac circular stranded hard drawn copper conductor, XLPE insulated, Polyethylene sheathed cable manufactured to SANS 1507 regulations. Cables to be fitted in P9000 channeling or suspended.					
		10mm² x Airdac Cable; Phase conductor with concentric neutral, earth and data conductors.					
C17.1.7		Supply	m	90			
C17.1.8		Install	m	90			
		Flat Twin and Earth Wiring					
		Supply, installation, testing and commissioning of Flat twin & Earth Innovative Copper Wiring Cable. Cables to be installed in conduit for lighting and small power					
		1.5mm² x 2C+E Flat Twin					
C17.1.9		Supply	m	156			
C17.1.10		Install	m	156			
		2.5mm² x 2C+E Flat Twin					
C17.1.11		Supply	m	16			
C17.1.12		Install	m	16			
		Earth Continuity Conductors					
		10mm² BCEW					
C17.1.13		Supply	m	25			
C17.1.14		Install	m	25			
		Cable/Wire Terminations					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		16mm² x 4C Cu PVC SWA Cable					
C17.1.15		Supply	ea	2			
C17.1.16		Install	ea	2			
		10mm² x Airdac Cable Phase, Earth, Neutral and Data					
C17.1.17		Supply	ea	10			
C17.1.18		Install	ea	10			
		Flat Twin and Earth Wiring					
		Cable terminations complete including glands, shrouds, lugs, connections and commissioning.					
		1.5mm² x 2C+E Flat Twin					
C17.1.19		Supply	ea	95			
C17.1.20		Install	ea	95			
		2.5mm² x 2C+E Flat Twin					
C17.1.21		Supply	ea	20			
C17.1.22		Install	ea	20			
		Bare Copper Earth Wire Terminations					
		10mm² BCEW					
C17.1.23		Supply	ea	2			
C17.1.24		Install	ea	2			
C17.2.1		Appliances					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		SANS regulations approved equipment to be used for switched socket outlets and isolators					
		16 Ampere 250V grade RSA 3 Pin and Euro combined switched socket outlet complete in surface mounted box.					
C17.2.1		Supply	ea	0			
C17.2.2		Install	ea	0			
		16 Ampere 250V grade, single lever one way light switch complete with normal white cover plate, fixed in surface mounted box.					
C17.2.3		Supply	ea	8			
C17.2.4		Install	ea	8			
		Photo-voltic Cell					
C17.2.5		Supply	ea	1			
C17.2.6		Install	ea	1			
		Sleeves/Cable Trays / Power Skirting					
		Cable Ducting, with all standard accessories (elbows, tee off's, 4way, etc.); support every 1.5m with accessories, clips, rods, etc. Refer to Manufacturers installation. O LINE or Cabstrut.					
C17.2.7		Supply	m	28			
C17.2.8		Install	m	28			
C17.3		PVC sleeves laid in trenches or placed in position for casting into concrete brickwork and sealed off, inclusive of all accessories.					
		75mm dia Sleeve, KabelFlex					
C17.3.1		Supply	m	14			
C17.3.2		Install	m	14			
		Conduit & Accessories					
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		20mm dia Bosal Conduit					
C17.3.3		Supply	m	50			
C17.3.4		Install	m	50			
		50mm dia 2-way galvanised round boxes, surface mounted incuding locknuts & bushes, with covers. For light fittings in accordance with quality specification.					
C17.3.5		Supply	ea	22			
C17.3.6		Install	ea	22			
		Earthing					
C17.3.7		Earthing of the complete electrical installation according to the SANS 10142 regulations.	Sum	1			
C17.4		Testing and Commissioning					
C17.4.1		Test and commissioning of the complete low voltage installation.	ea	5			
C17.5		Lighting					
		TYPE B - SERIES 30 13W; 4000k; BLACK; HELICOIL					
C17.5.1		Supply	ea	10			
C17.5.2		Install	ea	10			
		TYPE D - 14W LED BULB IN BALL CEILING FITTING					
C17.5.3		Supply	ea	6			
C17.5.4		Install	ea	6			
		TYPE E - SQUARE BULKHEAD					
C17.5.5		Supply	ea	8			
C17.5.5		Install	ea	8			
C17.6		PC Sum					
C17.6.1		Pole top mounted circuit breaker (60A 3ph) and enclosure	PC Sum	1			
TOTAL CARRIED FORWARD							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
		BILL NO 18					
C18		CIVIL WORKS					
	SANS 1200 DB	EARTHWORKS (PIPE TRENCHES)					
		Excavation					
C18.1	PS DB 8.3.2	a) Excavate in all materials for trenches backfill, compact, and dispose of surplus material					
		For pipes with nominal diam up to 110mm					
		Over and Up to					
D18.1.1		0,0m 1,5m	m	45.00			
	PS DB 8.3.2	b) Extra-over item (8.3.2) above for::					
D18.1.2		3) Hard rock excavation	m^3	3.00			
D18.1.3		c) Excavate and dispose of unsuitable material from trench bottom	m^3	3.00			
	DB 8.3.3	**Excavation Anchillaries**					
C18.2		Make up deficiency in backfill material					
C18.2.1	PS DB 8.3.3.1	c) by importation from commercial sources (clean sand compact ed to 100% MAASHTO density)	m^3	2.00			
C18.2.2	PS DB 8.3.3.3	Compaction under surfaces exposed to traffic	m^3	2.00			
		Existing Services					
C18.3	PS DB 8.3.5	a) Services that intersect a trench					
C18.3.1		Stormwater pipes up to 375mm diam	No.	1.00			
C18.3.2		Sewer pipes up to 110mm diam	No.	1.00			
D18.3.3		Water mains up to 110mm diam	No.	1.00			
C18.3.4		Electrical cables	No.	1.00			
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C18.3.5		Telkom and other data sleeves	No.	1.00			
C18.4	PS DB 8.3.5	b) Services adjoining a trench excavation					
C18.4.1		Electrical cables	m	10.00			
C18.4.2		Telkom and other data cables	m	10.00			
		Finishing					
C18.5	PS DB 8.3.6.1	Reinstate road surfaces complete with all courses					
C18.5.1		Reinstate existing asphalt roads with 30mm thick premix complete with all courses	m^2	38.00			
	PS DB 8.3.6.2	Extra over item PS DB 8.3.6.1 for importing materials from commercial sources					
C18.5.2		Subbase G5 material	m^3	3.00			
C18.5.3		Base course G4 material	m^3	6.00			
C18.6	SABS 1200 L	MEDIUM-PRESSURE PIPELINES					
		HDPE-pipes					
	PS L 8.2.1	Supply, lay, and bed pipes complete with couplings					
C18.6.1		20mm diam PE 100 PN 12.5	m	45.00			
	PS L 8.2.16	Connect to existing pipeline					
C18.6.2		Onto 110mm complete with super saddle with brass insert, star screw	No	1.00			
		Ancillaries					
C18.7	PS L 8.2.13	Tap					
C18.7.1		Install new tap as per detail	No.	3.00			
	SANS 1200 LB	BEDDING (PIPES)					
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
	8.2.2	Supply only of bedding by importation					
C18.8	8.2.2.3	From commercial sources (provisional)					
C18.8.1		a) Selected granular material	m^3	4.00			
C18.8.2		b) Selected fill material	m^3	9.00			
	SABS 1200 DB	EARTHWORKS (PIPE TRENCHES)					
C18.9		**Excavation**					
C18.9.1	PS DB 8.3.2	d) Excavate by hand to expose existing services	m^3	2.00			
C19	SABS 1200 C	SITE CLEARANCE					
C19.1	8.2.8	Demolish and remove structures					
C19.1.1		a) Existing walls	m^2	10.00			
C19.1.2		b) Existing foundations	m^3	1.00			
C19.1.3		c) Existing lintels	m	24.00			
C20	SABS 1200ME	SUBBASE					
C20.1		Construct 125mm subbase, G5 natural gravel compacted to 95% of MOD AASHTO imported from commercial sources	m^3	8			
C21		SEGMENTED PAVING					
C21.1		Construction of paving complete including cutting units to fit edge restraints:					
C21.1.1		60mm interlocking concrete paving (35MPa, grey)	m^2	48.00			
TOTAL CARRIED FORWARD							

MONTAGU TRADING STALLS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
BROUGHT FORWARD							
C22	SABS 1200MH	ASPHALT BASE AND SURFACING					
	8.5.1	Prime Coat					
C22.1.1		Prime coat using type MC-30 medium curing applier at a rate of 0,7l/m2 of net bitumen	m²	680.00			
C23	SABS 1200 MG	BITUMINOUS SURFACE TREATMENT					
C23.1	8.4.4	Bituminous surface treatment with aggregate and slurry seal:					
C23.1.1		13,2mm agggregate	m²	680.00			
TOTAL CARRIED FORWARD TO SUMMARY							

LANGEBERG MUNICIPALITY

TENDER NO. T22/2022

CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU

SUMMARY OF SCHEDULE(S) OF QUANTITIES

SECTION A: PRELIMINARY AND GENERAL **R** …….

SECTION B: CONSTRUCTION AND UPGRADING OF BONNIEVALE INFORMAL STALLS **R** …….

SECTION C: CONSTRUCTION AND UPGRADING OF MONTAGU INFORMAL STALLS **R** …….

D: TOTAL OF SCHEDULE(S) (SUM OF SECTION A to SECTION C) **R** …….

E: CONTINGENCIES
(The sum provided is under the direct control of the Engineer
And may be partially or totally excluded) (10**%** of TOTAL D above) **R** …….

F: CONTRACT PRICE ADJUSTMENT
(The sum provided is in terms of Subclause 6.8.2 of the General Conditions of Contract) **R** ……NIL…….

G: TOTAL (D+E+F) **R** …….

H: TOTAL VALUE ADDED TAX (15%) ON (G) ABOVE **R** …….

I: CONTRACT PRICE CARRIED FORWARD TO C1.1 FORM OF OFFER (G+H) **R** …….

I/We, the undersigned, do hereby declare that these are the properly priced Bill / Schedules of Quantities forming part of this Contract Document containing Pages in consecutive order upon which my/our Tender for
Contract No.: T22/2022- CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU has been based.

My/our total Contract Price for these work and above items (Total **I**) is (in words):

……
……
……
……

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

DECLARATION (In respect of completeness of Tender)

Langeberg Municipality
28 Main Street,
Ashton

I/we, the undersigned, do hereby declare that these are the properly priced Bills of Quantities forming Part C2.2 of this Contract Document containing 192 pages plus 8 BOQ pages in consecutive order upon which my/our tender for **TENDER NO. T22/2022- CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU** has been based. If I/we have submitted a printed version of the Bills of Quantities, I/we warrant that no amendments have been made to it from the original, other than amendments issued in any Addenda in terms of Clause C.3.2 in Part T1.2 Tender Data.

SIGNED ON BEHALF OF TENDERER:	
NAME, SURNAME & POSITION	
DATE	

Part C3: Scope of Work

PART C3: SCOPE OF WORK 111

C3.1 DESCRIPTION OF THE WORKS 112
C3.2 ENGINEERING / DESIGN 116
C3.3 PROCUREMENT 117
C3.4 CONSTRUCTION 119
C3.5 MANAGEMENT 199
C3.6 ANNEXES ..... **ERROR! BOOKMARK NOT DEFINED.**

Status

Should any requirement or provision in the parts of the Scope of Work conflict with any requirement of any Standardised Specification, particular specification or any drawings, the order of precedence, unless otherwise specified, is:

- Scope of Work (Parts C3.1, C3.4, C3.5 and C3.6)
- Particular Specifications
- SANS Standardised Specifications
- Drawings

C3.1 Description of the Works

CONTENTS

3.1.1 EMPLOYER'S OBJECTIVES
3.1.2 OVERVIEW OF THE WORKS
3.1.3 EXTENT OF THE WORKS
3.1.4 LOCATION OF THE WORKS
3.1.5 TEMPORARY WORKS
3.1.6 CONSTRUCTION TIME PERIOD
3.1.7 CONTRACTOR'S CAMP SITE, POWER SUPPLY AND SERVICES
3.1.8 CONSTRUCTION IN CONFINED AREAS
3.1.9 WATER FOR CONSTRUCTION PURPOSES
3.1.10 FEATURES REQUIRING SPECIAL ATTENTION
3.1.11 ENVIRONMENTAL REQUIREMENTS
3.1.12 MONTHLY STATEMENT AND PAYMENT CERTIFICATE
3.1.13 LIMITED FUNDS

3.1.1 EMPLOYER'S OBJECTIVES

The Employers objective is to upgrade the existing informal trading stalls located in Bonnievale and Montagu.

The trading stalls sites are located at the following locations:

Bonnievale – 33°56'22.30"S, 20° 6'5.94"E
Montagu – 33°47'6.36"S, 20° 7'31.59"E

The scope of the work to be undertaken at the Bonnievale site includes the construction of a new storeroom with a toilet, as well as enclosing existing stall structures (inclusive of related civil and electrical work). At the Mongatu site new stalls will be constructed, with upgrades to existing stalls and a disabled toilet will be added to the existing ablution facility (inclusive of related civil and electrical work).

The description of the project contained in the Scope of Work is merely an outline of the Contract Works and shall not limit the work to be carried out by the Contractor under this Contract. Details of some of the major items are given in this section and approximate detailed quantities for each type of work to be carried out in accordance with the Contract Documents are included in the Bill of Quantities.

3.1.2 OVERVIEW OF THE WORKS

3.1.2.1 General Description

Work items under this tender shall include any one or more of the following:

i) Establishment on site

ii) Structural Steel

iii) Brick and mortar structures

iv) Civil & Electrical services

v) Refurbishment of existing buildings

3.1.2.2 Work Areas

The location of the works envisaged for the Project will be shown on the drawings bound into C5 of the Project document.

3.1.2.3 Boundaries of the site

The site will be confined to the areas of construction, including the site camp of the contractor.

3.1.2.3 Occupation of the site

Access to the site of the works will be given to the Contractor on the Commencement Date.

3.1.3 EXTENT OF THE WORKS

The work that is to be carried out under the contract is as provided for in the schedule of quantities. However, if during the course of construction conditions are found to differ from those anticipated, the Engineer reserves the right to modify the scope of the work to suit the prevailing conditions and circumstances. Variations introduced in this manner will be measured and paid for at the rates tendered for appropriate items listed elsewhere in the schedule of quantities or in the absence of such rates, as extra work.

3.1.5 TEMPORARY WORKS

The provision of temporary access to the different sites & temporary support of existing roof structures.

3.1.6 CONSTRUCTION TIME PERIOD

The time period specified for completion by the Engineer, as stated in the Contract Data in terms of Clause 1.1.1.14 of the Conditions of Contract, is determined by the contractor and should be inclusive of all special non-working days and year end break (builder's holidays). The Contractor shall plan and programme his construction sequence for completion within the time period specified.

3.1.6.1 Construction work programme

The Contractor shall take note of various factors contained in the specifications, which will have a significant influence on the compilation of the construction work programme. Prominent items are those which might require a lead time for ordering the equipment or which might entail a special manufacturing period.

The Contractor shall take the above into consideration when drawing up his programme and no claims will be entertained in this regard.

3.1.7 CONTRACTOR'S CAMP SITE, POWER SUPPLY AND OTHER SERVICES

The Contractor will be permitted to use the area on or near the site for the establishment of a camp site and office accommodation for his construction personnel. The choice of all sites for the establishment of camps is subject to the approval of the Engineer.

The Contractor shall, however, make his own arrangements concerning the provision of water, electricity and other services for the campsite and office facilities. All Municipal rates shall apply.

No direct payment will be made for the provision of electrical and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

3.1.8 CONSTRUCTION IN CONFINED AREAS

It will be necessary for the Contractor to work within confined and restricted areas. The method of construction in these confined areas largely depends on the contractor's constructional plant.

Regardless, measurement and payment will be in accordance with the specified cross-sections and dimensions only, irrespective of the method used for achieving these cross-sections and dimensions. It is deemed that the rates tendered in the Pricing Schedule / Priced Bill / Schedule of Quantities include full compensation for all special equipment and construction methods and for all difficulties encountered when working in confined areas and narrow widths, and at or around obstructions. **No additional payment will be made nor will any claim for payment be considered for work done in such confined areas, despite indications to the contrary in the Standard Specifications.**

The environment needs to be respected during the construction stage. The footprint must be discussed before the start of construction and no construction or movement of vehicles should take place outside these allocated areas.

3.1.9 WATER FOR CONSTRUCTION PURPOSES

The Contractor must make adequate provision in his tender for all negotiations and procurement of water for construction activities and all related costs will be deemed to be included in his tendered rates. The raw borehole water cannot be used for concrete mixing purposes, only treated borehole water will be accepted.

3.1.10 FEATURES REQUIRING SPECIAL ATTENTION

3.1.10.1 Existing Services

Any work requiring the excavation of existing road pavements, sidewalks and verges will require the necessary wayleaves be obtained from the relevant service authorities (including DFA, Neotel, Telkom, Electrical Department / Eskom, Roads & Stormwater Department, Waterworks Department and Drainage & Sewerage Department etc).

Prior to commencing work, the Contractor shall confer with all Authorities and Departments concerned and obtain the necessary wayleaves for both overhead and underground services affected by the Works and shall satisfy himself that he has obtained all the relevant information required to complete the Contract. The Contractor will be liable for obtaining all the necessary wayleaves and work permits from the relevant service authorities prior to the commencement of work within the road reserve.

The Contractor shall carry out the works with the minimum interference to existing services and it shall be clearly understood that obtaining the necessary wayleaves, will be at his own cost. The cost of repairing any damage to services, due to miscalculations or negligence on the part of the Contractor or his failure to carry out the duties set out in this Clause, shall be borne by the Contractor.

The Contractor shall comply with the requirements of the Project Specifications in Part B of C3.4.

The contractor needs to walk through the erf with the owner or authorised person, take photographs of the condition before work. Upon completion, the erven need to be handed back to the owner or authorised person in a similar or better state.

3.1.10.2 Health and Safety Plan

Prior to commencing work, the Contractor shall submit a Health and Safety Plan, compiled in accordance with the Health and Safety Specifications in Part C of the Works Specifications to the Engineer for approval. The Contractor may not commence construction without the Engineer's approval of the Health and Safety Plan.

3.1.10.3 Standard of Materials, Workmanship, Testing and Performance

The attention of Tenderers is particularly drawn to the high standard of materials, workmanship, testing and performance applicable to his Contract as a whole and he shall convey this requirement to his proposed Sub-Contractors.

The Contractor will carry out control testing of materials and workmanship as required in terms of the specifications. Where necessary, the Engineer may carry out acceptance control testing. The Employer will not pay claims or grant extension of time for delays to the works resulting from the awaiting of test results. Testing as required by the Engineer will be effected as promptly as possible but it is in the Contractors own interest to submit material samples and other components of workmanship for testing in good time to assist in avoiding or minimising delays.

3.1.10.4 Weatherproof Protection for Workers

All staff required to continue working during rain shall be provided with oilskins and rubber knee boots, or other approved protective clothing and footwear.

3.1.10.5 Night Work and Work on Public Holidays

Where the Contractor requires staff to work overtime, he shall make the necessary arrangements with the Engineer and obtain written approval from the Engineer. The Contractor shall bear the cost of his overtime work.

The following conditions apply:

a) No work allowed after 18:00 on weekdays.
b) Working times for Saturdays are 08:00 - 14:00.
c) No work allowed on Sundays, Public Holidays and year end break as published by SAFCEC.
d) Approval for work outside of normal working hours to be obtained from Employer.

Penalty for the transgression of above conditions is R5 000 per transgression.

3.1.11 ENVIRONMENTAL REQUIREMENTS

The Contractor shall take particular note of the environmental requirements contained in the Works Specifications.

The Contractor shall take every precaution to avoid damage to vegetation within that area which falls outside the designated work area is indicated on the drawings. Any damage caused is to be repaired at the Contractor's expense.

Storage and stockpiling of materials will not be permitted without the written consent of the Engineer. Excess material from excavations and waste material shall be spoiled off site at suitable locations.

3.1.12 MONTHLY STATEMENTS AND PAYMENT CERTIFICATES

The statement to be submitted by the Contractor in terms of Clause 6.10 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in digital electronic computer format.

For the purposes of the Engineer's payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Engineer for the purposes of accurately reflecting the actual quantities and amounts which the Engineer deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Engineer within three (3) normal workings days from the date on which the Engineer communicated to the Contractor the adjustments required.

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer's payment certificate will be added to the times allowed to the Engineer in terms of Subclause 6.10.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

3.1.13 LIMITED FUNDS

Limited funds are available for this project and certain portions of the works as detailed in the scope of works may be omitted depending on the tendered rates and tender amounts received. The Employer reserves the right to amend, limit or omit certain portions / parts of the works without thereby invalidating the contract.

The Contractor shall take cognisance of these additional requirements in the finalisation of his tendered rates and programme of work. No claims will be considered on account of these restrictions.

C3.2 Engineering / Design

CONTENTS

3.2.1 DRAWINGS
3.2.2 DESIGN PROCEDURES

3.2.1 DRAWINGS

The drawings listed below are attached in order to give an overview of the project. Additional construction drawings will, in terms of the General Conditions of Contract, be issued to the Contractor by the Engineer/Employer on the commencement date and from time to time as required.

The Works shall be carried out in accordance with the drawings listed in C5 of the tender documents and included in Volume 4 : Drawings and form part of the contract documents.

The reduced drawings that form part of the tender documents shall be used for tender purposes only.

The Contractor will be supplied with 3 unreduced paper prints of each of the drawings required for construction. These copies are issued free of charge and the Contractor shall make any additional copies he may require at his own cost.

Only figured dimensions shall be used and drawings shall not be scaled unless otherwise instructed.

The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates, or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be supplied to the Engineer's Representative on a regular basis.

All information in the possession of the Contractor, which the Engineer requires to complete his record drawings shall be supplied to the Engineer's Representative before a certificate of completion will be issued.

The drawings prepared by the Employer for the permanent Works are listed. The Employer reserves the right to issue amended and/or additional drawings during the contract.

3.2.2 DESIGN PROCEDURES

The only design responsibility assigned to the Contractor under this contract is for the design work related temporary works and support of excavations. There is no requirement to submit these designs to the Employer or the Employer's agent for approval. Temporary works will however be inspected by the appointed Occupation Health and Safety Client Agent to ensure compliance with recognized industry norms and standards.

It is assumed that all temporary works designed and constructed by the Contractor has been designed and supervised by a competent person with the necessary qualifications and experience. It is also assumed the Contractor has the necessary indemnity insurance in place to cover for any liability that may occur as a result of the failure of such temporary works.

C3.3 Procurement

CONTENTS

3.3.1 PREFERENTIAL PROCUREMENT
3.3.2 SUB-CONTRACTING PROCEDURES

3.3.1. PREFERENTIAL PROCUREMENT

The Works shall be executed in accordance with the conditions associated with the granting of preferences detailed in the **Preference Schedule** where preferences are granted in respect of B-BBEE contribution.

Financial penalties, as described in the **Preference Schedule**, shall be applied in the event that the Contractor is found to have breached and of the conditions contained in the **Preference Schedule** (unless proven to be beyond the control of the Contractor).

Notwithstanding the application of penalties, the Contractor's attention is drawn to other sanctions that may be applied by the Employer (listed in the **Preference Schedule**) with due consideration to the circumstances.

3.3.2. SUB-CONTRACTING PROCEDURES

3.3.2.1 Monitoring the use of sub-contractors

Notwithstanding the restriction on sub-contracting as described on the **Preference Schedule**, it is recognised that sub-contracting is an integral part of construction, which the conditions of contract make provision for.

In order, however, to comply with the requirements of the **Preference Schedule**, the Contractor shall submit to the Employer's Agent, on a monthly basis, a **B-BBEE Sub-contract Expenditure Report**. The format of this report is provided in Annex 2 attached.

The Contractor shall submit to the Employer's Agent documentary evidence in accordance with the applicable codes of good practise, of the B-BBEE status level of every sub-contractor employed by the Contractor. Until such time as documentary evidence as described above has been submitted to the Employer's Agent, a sub-contractor shall be deemed to be a non-compliant contributor.

The Contractor shall furthermore, on the written request of the Employer's Agent, provide documentary evidence showing the value of work sub-contracted to any or all of the sub-contractors employed by the Contractor.

3.3.2.2 Procedure for the selection of sub-contractors/suppliers

Where monetary allowances for provisional sums or prime costs items have been provided in the Bills of Quantities, and where the work or items to which the allowances relate are to be executed/supplied by sub-contractors/suppliers, then the following selection process shall be followed in respect of the required sub-contractors/suppliers:

Where the monetary allowance is less than or equal to R300 000, the Contractor shall invite three quotations from suitably qualified sub-contractors/suppliers for the required work or items. The selection of the three sub-contractors/suppliers shall be in consultation with, and to the approval of the Employer's Agent. The evaluation of the quotations received must include a preference points system as described in C.3.11 of the Tender Data.

Where the monetary allowance is in excess of R300 000, an open competitive tender process shall be followed in respect of the selection of a sub-contractor/supplier for the required work or items. In such circumstances, tender documentation will be prepared by the Employer's Agent in consultation with and to the approval of the Contractor, invitations to tender will be advertised in the media by the Employer's Agent on behalf of the Contractor, and a sub-contractor/supplier will be selected from the responses received, by the Contractor and Employer's Agent in consultation. The evaluation of the offers received must include a preference points system as described in C.3.11

of the Tender Data. The Contractor must satisfy itself that the selected sub-contractor/supplier can meet the requirements of the sub-contract /supply agreement and may, on reasonable grounds, elect not to employ a particular sub-contractor/supplier.

In both instances above (less than or equal to R300 000 or in excess of R300 000), the contractual relationship between the Contractor and sub-contractor/supplier shall be as described in the conditions of contract.

C3.4 Construction

CONTENTS

3.4.1 TRADE NAMES OR PROPRIETARY PRODUCTS
3.4.2 APPLICABLE STANDARDISED SPECIFICATIONS
3.4.3 PARTICULAR / PROJECT SPECIFIC SPECIFICATIONS
3.4.4 ELECTRICAL PROJECT PARTICULAR SPECIFICATION
3.4.5 MODEL PREAMBLES FOR TRADES 2008

3.4.1. TRADE NAMES OR PROPRIETARY PRODUCTS

Bid specifications may not make any reference to any particular trade mark, name, patent, design, type, specific origin or producer, unless there is no other sufficiently precise or intelligible way of describing the characteristics of the work, in which case such reference must be accompanied by the words “or equivalent”.

TENDERERS MUST NOTE THAT WHEREVER THIS DOCUMENT REFERS TO ANY PARTICULAR TRADE MARK, NAME, PATENT, DESIGN, TYPE, SPECIFIC ORIGIN OR PRODUCER, SUCH REFERENCE SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS ‘OR EQUIVALENT”

3.4.2 APPLICABLE STANDARDISED SPECIFICATIONS

SANS 1200A	1986	General
SANS 1200AB	1986	Engineer’s Office
SANS 1200AD	1986	General (Small dams)
SANS 1200C	1982	Site Clearance
SANS 1200D	1990	Earthworks
SANS 1200DA	1990	Earthworks (Small works)
SANS 1200DB	1989	Earthworks (Pipe Trenches)
SANS 1200DE	1984	Small earth dams
SANS 1200DM	1981	Earthworks (Road and Subgrade)
SANS 1200DK	1996	Gabions and Pitching
SANS 1200G	1982	Concrete (structural)
SANS 1200GA	1982	Concrete (Small works)
SANS 1200 GB	1984	Concrete (ordinary buildings)
SANS 1200 H	1990	Structural Steelwork
SANS 1200 HB	1985	Cladding and Sheeting
SANS 1200L	1983	Medium Pressure Pipelines
SANS 1200LB	1983	Bedding (Pipes)
SANS 1200LC	1981	Cable Ducts
SANS 1200LD	1982	Sewers
SANS 1200LE	1982	Stormwater Drainage
SANS 1200LF	1983	Erf Connections (Water)
SANS 1200M	1996	Roads (General)
SANS 1200ME	1981	Subbase

SANS 1200MF	1981	Base
SANS 1200MK	1983	Kerbing and Channelling

All work carried out, as well as equipment supplied, must fully meet and be in compliance with the requirements of the Occupational Health and Safety Act (Act 85 of 1993) and the Construction Regulations (2014) issued in terms of Section 43 of the Act.

In addition, the latest revisions of the following statutory regulations, laws and obligations as pertaining specifically to any and all electrical work applicable to this specific project are applicable:

- The regulations of the local Supply Authority
- The regulations of the Client, being either Governmental, Municipal, Parastatal or Private
- Local fire regulations
- SANS 10400-A: 2010 – The application of the national building regulations, Part A: General principles and requirements

All references to "SABS" specifications shall be read as "SANS" in light of the recent changes by the South African Bureau of Standards. Where a SANS Standard does not exist or if not applicable, the relevant IEC or BS Standard shall be applicable. All applicable electrical instrumentation must be IP68.

a) The term project specifications appearing in any of the SANS 1200 standardised specifications must be replaced with the terms scope of work.

b) Departures from and/or additions to specifications listed above are in shown in accordance with the numbering system of the standardised or particular specification. Each clause with the prefix PS shall refer to the congruent clause in the appropriate section of the standardised or particular specification. Such clause shall either substitute, or supplement, or amend the clause with the same number. Where there is no such congruent clause in the standardised or particular specification, the PS clause shall be a new clause in the project specification. Any clause that is referred to in the standardised specification will also include the appropriate project specification and shall adhere to the following:

   (i) In the event of any discrepancy between the project specifications and a part of the standard specifications, the schedule of quantities, or the drawings, the project specifications shall take precedence.

   (ii) The standard specifications, which form part of this contract, may cover items not applicable to this particular contract and should be clarified with the Engineer if discrepancies are obvious.

In certain clauses the standard specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains some additional specifications required for this particular contract.

3.4.3 PARTICULAR / PROJECT SPECIFIC SPECIFICATIONS

In certain instances, the Standard Specifications listed in 3.4.1 above allow a choice to be specified in the Scope of Work between alternative materials or methods of construction. Allowance is also made for additional requirements to be specified to suit each particular contract. Details of such alternatives of additions are contained in this part of the Scope of Works. In addition, it contains some supplementary specifications required for this particular contract. Subclauses referred to are those in the relevant Standardised Specification.

The number of each clause and each payment item in this part of the project specifications consists of the prefix PS followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new clause or a payment item which does not form part of a clause or a payment item in the standard specifications and which is included here, is also prefixed by PS followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the standard specifications.

SANS 1200 A : GENERAL

A 3 MATERIALS

PS A 3.1 QUALITY

Substitute the second sentence of the first paragraph of A 3.1 with the following:

All pipe and HDPE product suppliers must be SAPMA registered.

All materials shall bear the official mark of the appropriate standard and marking must be permanent. Markings must include the following information: batch, class and date of manufacture and may not be older than 1 year.

Substitute the second paragraph with the following:

Samples on which laboratory testing is required, shall be delivered free of charge to an approved laboratory, which is capable to carry out the necessary tests. The Contractor is responsible for the cost of all testing to ascertain that the materials do comply with the specified minimum requirements of the relative materials and no additional payment will be made for such testing.

The Contractor shall inform the Engineer of any control testing to be done at least 48 hours before such tests are required and must allow in his program for the time necessary for the tests and the processing of the results thereof.

PS A 3.3 STORAGE OF MATERIALS

Rubber articles, including pipe insertion or joint rings, shall be stored in a suitable shed and kept away from sunlight, oil or grease. Living accommodation shall not be used for the storage of materials.

Large items not normally stored in a building shall be neatly stacked or laid out on suitable cleared areas on the Site. Grass or vegetation shall not be allowed to grow long in the storage areas and the material shall be kept free of dust and mud, and be protected from stormwater. Pipes shall be handled and stacked in accordance with the manufacturer's recommendations, special care being taken to avoid stacking to excessive heights and placing over hard objects. PVC pipes shall be protected from direct sunlight by suitable covers.

Every precaution shall be taken to keep cement dry and prevent access of moisture to it from the time it leaves the place of manufacture until it is required for use on the Site. Bags of cement which show any degree of hydration and setting, shall be removed from the Site of the Works and replaced at the Contractor's own expense.

PS A 3.4 HANDLING OF MATERIALS

Materials should be handled with proper care at all times. Under no circumstances may materials be dropped from vehicles. Large pipes shall be lifted or lowered only by means of suitable hoisting equipment.

The Engineer shall have authority to forbid the transporting or handling of materials in a manner which, in his opinion, could cause damage.

PS A 4.1 SILENCING OF CONSTRUCTION EQUIPEMENT

Substitute A4.1 with the following:

The Contractors attention is drawn to the applicable regulations pertaining to noise and hearing conservation, framed under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended.

The Contractor shall at all times and at his own cost, be responsible for implementing all necessary steps to ensure full compliance with such regulations, including but not restricted to the provision and use of suitable and effective silencing devices for pneumatic tools and other plant which would otherwise cause a noise level in excess of that specified in the said regulations.

Where appropriate, the Contractor shall further, by means of temporary barriers, effectively isolate the source of such noise in order to comply with the said regulations.

PS A 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

Add the following paragraph before the existing first paragraph in A4.2:

The Contractors buildings, sheds and other facilities erected or utilised on the Site for purposes of the Contract shall be fenced off and shall contain all offices, stores, workshops, testing laboratories, toilet facilities, etc. as may be required by the Contractor. The facilities shall always be kept in a neat and orderly condition.

No personnel may reside on the Site. Only night-watchmen may be on the Site after hours."

Delete "and first-aid services" in the second paragraph of A4.2 and add the following:

The Contractor shall provide on the Site and in close proximity to the actual locations where the work is being executed, one toilet per 10 workmen, which toilets shall be effectively screened from public view and their use enforced. Such toilets shall be relocated from time to time as the location of the work being executed changes, so as to ensure that easy access to the toilets is maintained.

PS A 4.3 SITE SECURITY

The area to be used by the Contractor, for the execution of the works, may be subject to a security risk. The Contractor must assess the potential risks and make his own provision for additional protection.

No separate payment will be made for these additional security measures and the cost thereof will be deemed to be included in the rates tendered for items PS A 8.3 and PS A 8.4. These rates shall also include additional insurance if required.

A 5 CONSTRUCTION

A 5.1 SURVEY

PS A 5.1.1 Setting Out of the Works

Substitute the first sentence in A 5.1.1 with the following:

Setting out of the works is the sole responsibility of the Contractor and shall be done from bench marks as indicated on the drawings. The Contractor shall, within two (2) weeks after the site has been handed over to him, ascertain himself of the correctness of all pegs and benchmarks. Any discrepancy shall immediately be reported in writing to the Engineer. Any costs or subsequent costs arising from discrepancies that had not been reported to the Engineer within the aforementioned period, shall be the sole responsibility of the Contractor.

PS A 5.1.2 Preservation and Replacement of Survey Beacons and Pegs Subject to the Land Survey Act

Delete the words “in the vicinity of boundaries” in the second sentence of A 5.1.2 and replace the words “under the direction of” in the same sentence with “in consultation and liaison with”.

Add the following after the second sentence of A 5.1.2:

The Contractor and the Engineer shall record on the said list, their concurrence or disagreement (as the case may be) regarding the completeness and accuracy of the details recorded therein.

Substitute the third sentence of A 5.1.2 with the following:

“At the completion of the Contract, the Contractor shall expose all pegs that were listed at the commencement of the construction as being in order and the Contractor shall arrange with a registered Land Surveyor for the checking of the positions of all such pegs and the replacement of those that the Land Surveyors check reveals have become disturbed or damaged. The Contractor shall, as precedent to the issue of the Certificate of Completion, provide to the Engineer, a certificate from the registered land surveyor, certifying that all pegs listed at the commencement of construction in accordance with the provision of this clause, have been checked and that those found to have been disturbed, damaged or destroyed have been replaced in their correct positions, all in accordance with the provisions of the said Act.

The costs of all checking, replacement and certification as aforesaid shall be entirely for the Contractors account. This, with the provision always that the Contractor shall not be held liable for the cost of replacement of pegs which:

(a) cannot reasonably be re-established in their original positions by reason of the finished dimensions of the permanent works, and
(b) The Contractor can prove beyond reasonable doubt to the satisfaction of the Engineer, were disturbed, damaged or destroyed by others beyond his control.”

PS A 5.2 **WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS**

Add the following to A 5.2:

The area of construction work must, as far as possible, be confined to the shoulders of the road. The contractor shall at all times have in place, sufficient advanced warning signs and markings. All excavations must be marked with drums, reflective tape and warning signs to the satisfaction of the Engineer.

All Road Traffic Signs (permanent signs and temporary signs) shall comply with the requirements of the “South African Development Community Road Traffic Signs Manual” and shall be approved by the Engineer before construction commences.

PS A 5.3 PROTECTION OF EXISTING STRUCTURES

Substitute "Machinery and Occupational Safety Act, 1983 (Act No 6 of 1983)" with "Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as amended," and insert "as amended" after "(Act No. 27 of 1956)":

PS A 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Substitute A 5.4 with the following:

PS A 5.4.1 Location of existing services

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by a competent contractor to be present on, under, over or within the Site.

All services indicated on all wayleaves (obtained by Contractor, the RE to oversee the process and must be informed at all times of the progress by the Contractor), additional scanning as allowed for and pointed out on site by the local authority will be opened up and surveyed (level, invert, diameter and coordinates). These services include sewer, water, stormwater, electrical ducts, telecommunications ducts etc. These services will be reported to the Engineer 5 working days before these services will delay the Contractor.

The Contractor must therefore open all existing services and report them to the Engineer, 5 working days before the Practical Completion date and/or the Due Completion date, is affected. No claim will be considered for any delays if the Contractor did not follow protocol. This protocol must be clearly indicated on the initial and all adjusted construction programmes together with the time required by the Contractor to open all existing services. The Contractor must allow for at least 10 working days to open and expose the existing services. Any financial and time implications due to failure to timeously report to the Engineer will be for the Contractors account. Therefore, the protocol that must be indicated on the programme is as follows:

SEQUENCE OF PROTOCOL OF EXISTING SERVICES		
1	**2**	**3**
Open and Locating Existing Services	**Report All existing services to the Engineer**	**Time before Practical Completion date and/or Completion date is affected**
At Least 10 working days	1 working day	5 working days

The 5 working days, as per sequence number 3, is identified as float in terms of Clause 5.6.2.4 of the GCC 2015 (3rd Edition) and may only be used on prior approval by the Engineer. These 5 days must be programmed as a single bar item/activity, in the initial programme and subsequent adjusted programmes, as the immediate predecessor to normal climatic conditions and on the critical path of the programme.

Without in any way limiting his liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall obtain the most up-to-date plans as are available, showing the positions of services existing in the area where he intends to work. Neither the Employer nor the Engineer offers any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Engineer, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of subclauses 4.4 and 5.12.2 of SANS 1200 D (as amended) shall apply.

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as 'know services' and their positions shall be indicated by the Contractor on a separate set of drawings, a copy of which shall be furnished to the Engineer without delay and within the time period stated above.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the site, it shall henceforth be deemed to be a known service and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the site shall apply. The Contractor shall notify the Engineer immediately when any such service is encountered or discovered on the Site.

Whilst he is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to

(a) known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognizance being taken of such deviations in line and level which may reasonably be anticipated, and
(b) any other service which ought reasonably to have been a known service in accordance with the provisions of this clause,

The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractors operations or by the lack of proper protection.

No separate payment will be made to the Contractor in respect of this costs of providing, holding available on the Site and utilising the said detecting and testing equipment, nor for any costs incurred in preparing and submitting to the Engineer the

Drawings as aforesaid. These costs shall be deemed included in the Contractors other tendered rates and prices included in the Contract.

Payment to the Contractor in respect of exposing services at the positions agreed by the Engineer and as described above will be made under the payment items (if any) as may be provided for in the respective sections of the specifications pertaining to the type of work involved.

PS A 5.4.2 Protection during construction

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which the Contractor has occupation and/or possession of the Site.

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising therefrom to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

Unless otherwise instructed by the Engineer, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In roadways, the requirements of subclause 5.9 of SANS 1200 DB should be observed. In other areas compaction is to be to 90% modified AASHTO density.

PS A 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly in the Contract or ordered by the Engineer, the Contractor shall not carry out alterations to existing services. When any such alteration become necessary, the Contractor shall promptly inform the Engineer, who will either make arrangements for such work to be executed by the owner of the services, or instruct the Contractor to make such arrangements himself.

Should damage occur to any existing services, the Contractor shall immediately inform the Engineer and the relevant authorities should be repaired by the applicable authority and not by the Contractor. In urgent cases, the Contractor shall take appropriate steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor.

The contractor shall allow for the time and cost thereof to drain and refill existing water supply/reticulation pipelines for purpose of connecting onto the existing pipelines.

The contractor shall be billed for the time spent by the Client to make alterations and/or repairs on existing infrastructure and the Contractor shall make provision for this in his tender rates.

A list of important telephone numbers for use when services are damage will be provided at the commencement of the contract."

PS A 5.6 POLLUTION

The Contractor's attention is drawn specifically to dust disturbance (See PS D 5.1.4.1).

PS A 5.7 SAFETY

Substitute A 5.7 with the following:

Pursuant to be provisions of the Conditions of Contract, and without in any way limiting the Contractors obligations thereunder, the Contractor shall at his own expense (except only where specific provision (if any) is made in the Contract for the reimbursement to the Contractor in respect of particular items), provide the following:

a) Provide to its Employees on the site of works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended (hereinafter referred to as the Act) at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times;

b) Provide, install and maintain all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the site, as well as the general public;

c) Implement on the site of the works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the Act at all times;

d) Implement all necessary measures so as to ensure compliance with the Act by all subcontractors engaged by the Contractor and their employees engaged on the works;

e) Full compliance with all other requirements pertaining to safety as may be specified in the Contract.

The Employer and the Engineer shall be entitled, although not obliged, to make such inspections on the site as they shall deem appropriate, for the purpose of verifying the Contractors compliance with the requirements of the Act. For this purpose, the Contractor shall grant full access to the site of all parts of the site and shall co-operate fully in such inspections and shall

make available for inspection all such documents and records as the Employers and/or Engineers representative may reasonably require.

Where any such investigation reveal, or where it comes to the Engineers attention that the Contractor is in any way in breach of the requirements of the Act or is failing to comply with the provisions of this clause, the Engineer shall, in accordance with the provisions of Clause 5.11 (GCC 2015), be entitled to suspend progress on the works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Engineer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of Clause 5.13 (GCC 2015) should the Contractor fail to complete the Works on or before the specified due completion date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and/or this clause shall constitute grounds for the Engineer to act in terms of Clause 9.2.1.3.5 (GCC 2015) and for the Employer to cancel the Contract in accordance with the further provisions of the said Clause 9.2 (GCC 2015).

PS A 5.9 SITE MEETINGS

The Contractor or his authorised agent will be required to attend regular site meetings, which shall normally be held once a month on dates and at times determined by the Engineer, but in any case whenever reasonably required by the Engineer. Unless otherwise indicated in the Contract or instructed by the Engineer, such meetings shall be held at the Contractors offices on the site. At such monthly meetings, matters such as general progress on the works , quality of work, problems, claims, payments, and safety shall be discussed, but not matters concerning the day-to-day running of the Contract."

A 6 TOLERANCES

PS A 6.4 USE OF TOLERANCES

No guarantee is given that the full specified tolerances will be available independently of each other and the Contractor is cautioned that the liberal or full use of any one or more of the tolerances may deprive him of the full or any use of tolerances relating to other aspects of the work.

Except where the contrary is specified, or when clearly not applicable, all quantities for measurement and payment shall be determined from the 'authorised' dimensions. These are specified dimensions or those shown on the Drawings or, if changed, as finally prescribed by the Engineer, without any allowance for the payment will be based on the 'authorised' dimensions.

If the work is constructed in accordance with the 'authorised' dimensions plus or minus the tolerance allowed, the calculation of quantities will be based on the 'authorised' dimensions, regardless of the actual dimensions to which the work has been constructed.

When the work is not constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the Engineer may nevertheless, at his sole discretion, accept the work for payment. In such cases no payment shall be made for quantities of work or material in excess of those calculated for the 'authorised' dimensions, and where the actual dimensions are less than the 'authorised' dimensions minus the tolerance allowed, quantities for payment shall be calculated based on the actual dimensions as constructed."

A 7 TESTING

A 7.1 PRINCIPELS

PS A 7.1.1 Checking

Substitute the last sentence in A 7.1.1 with the following:

The Contractor shall obtain the services of an independent testing laboratory at his own expense to carry out such checks as are prescribed in the various standardised specifications.

PS A 7.1.2 Standard of Finished Work not to Specification

Insert the words "or checks by an approved laboratory" after the words "Where the Engineer's checks" in the first sentence of A 7.1.2.

PS A 7.2 APPROVED LABORATORIES

Substitute A 7.2 with the following:

"Unless otherwise specified in the relevant specifications or elsewhere in the Project Specification, the following shall be deemed to be approved laboratories in which design work, or testing required in terms of a specification for the purposes of acceptance by the Engineer of the quality of materials used and/or workmanship achieved, may be carried out:

a) Any testing laboratory certified by the South African National Accreditation System (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract;

b) Any testing laboratory owned, managed or operated by the Employer or the Engineer;

c) Any testing laboratory established and operated on the Site by or on behalf of the Employer or the Engineer.
d) Any other laboratory that the Engineer approves in his absolute discretion."

PS A 7.4 STATISTICAL ANALYSIS OF CONTROL TESTS

Substitute A 7.4 with the following:

Test results shall not be evaluated by statistical methods. All results shall comply with the specified minimum requirements of the materials concerned.

A 8 MEASUREMENT AND PAYMENT

A 8.1 MEASUREMENT

PS A 8.1.1 Method of Measurement, All Sections of the Schedule

Delete the words "and South West Africa".

A 8.1.2 Preliminary and General Items or Section

PS A 8.1.2.1 Contents

Substitute the last sentence of A 8.1.2.1 b) with the following:

Separate items will be scheduled to cover the fixed, value-related and time-related components of the Contractors preliminary and general costs.

PS A 8.1.2.2 Tendered Sums

Substitute the A 8.1.2.2 with the following:

Except only where specific provision is made in the Specifications and/or the Schedule of Quantities for separate compensation for any of these items, the Contractors tendered sums under item PS A 8.3 and PS A 8.4 shall collectively cover all charges for:

- risks, costs and obligations in terms of the Conditions of Contract, the General Conditions of Contract 2015 (GCC 2015), the Special Conditions of Contract (SCoC) and of this standardized specification;
- head-office and site overheads and supervision;
- profit and financing costs;
- expenses of a general nature not specifically related to any item or items of the permanent or temporary work;
- All Construction Equipment (as per Clause 1.1.1.6 of the GCC 2015, 3rd Edition), required for the execution of the Contract.
- providing such facilities on site as may be required by the Contractor for the proper performance of the Contract and for its personnel, including, but without limitation, providing offices, storage facilities, workshops, ablutions, services such as water, electricity, sewage and rubbish disposal, access roads and all other facilities required, as well as for the maintenance and removal on completion of works of these facilities and cleaning-up of the site of the Contractors establishment and reinstatement to not less than its original condition, and
- providing the facilities for the Engineer and his staff as specified in the Contract and their removal from the site on completion of the Contract.
- site security described in PS A 4.3

A 8.2 PAYMENT

PS A 8.2.1 Fixed-charge and Value-related Items

Substitute A 8.2.1 with the following:

Payment of fixed charges in respect of item 8.3.1 will be made as follows:

Eighty per cent (80%) of the sum tendered will be paid when the facilities have been provided and approved. The remaining twenty per cent (20%) will be paid when the works have been completed, the facilities have been removed and the site of the Contractors establishment has been cleared and cleaned to the satisfaction of the Engineer.

No adjustment will be made to the sums tendered in respect of item 8.3.1 should the value of the works finally executed or the time for completion vary in any way from that specified in the tender.

Payment for the sum tendered under item 8.3.2 will be made in three separate instalments as follow:

a) The first installment, which is 40% of the sum, will be paid when the Contractor has fulfilled all his obligations to date under this specification, the General Conditions of Contract and the Special Conditions of Contract (GCC 2015), and when the value of work certified for payment, excluding materials on site and payments for preliminary and general items, is equal to not less than 5% of the total value of works listed in the Schedule of Quantities.

b) The second instalment, which is 40% of the sum, will be made when the amount certified for payment, including retention moneys but excluding this second instalment, exceeds 50% of the tender sum.

c) The final payment, which is 20% of the sum, will be made when the works have been certified as complete and the Contractor has fulfilled all his obligations to date under this Specifications, the General Conditions of Contract and the Special Conditions of Contract (GCC 2015).

Should the value of the measured work finally complete be more or less than the tender sum, the sum tendered under items 8.3.2 will be adjusted up or down in accordance with the provisions of Clause 6.11 (GCC 2015) and this adjustment will be applied to the third instalment.

PS A 8.2.2 Time-related Items

Substitute A 8.2.2 with the following:

Subject to the provisions of PS A 8.2.3 and PS A 8.2.4, payment under item PS A 8.4.1 (time-related item) will be made monthly in equal amounts, calculated by dividing the sum tendered for the item by the tendered Contract period in months, provided always that the total of the monthly amounts so paid for the items is not out of proportion to the value of the progress of the Works as a whole.

PS A 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS

Substitute A 8.3 with following:

PS A 8.3.1 Fixed Preliminary and General Charges .....Unit : Sum

PS A 8.3.2 Value-related Preliminary and General Charges .....Unit : Sum

The sums tendered shall include full compensation for all fixed-charge preliminary and general charges as describe in PS A 8.1.2.2. Payment will be made as described in PS A 8.2.1.

PS A 8.4 SCHEDULED TIME-RELATED ITEMS

Substitute A 8.4 with following:

PS A 8.4.1 Time-related Preliminary and General Charges .....Unit : Sum

The sums tendered shall include full compensation for all time-related preliminary and general charges as describe in PS A 8.1.2.2. Payment will be made as described in PS A 8.2.2.

PS A 8.5 SUMS STATED PROVISIONALLY BY THE ENGINEER

Substitute A 8.5 with following:

PS A 8.5.1 Works Executed by the Contractor ..... Unit : Prov Sum

The Contractor will be reimbursed in substitution of the Provisional Sums (if any) allowed in the Schedule of Quantities for work to be executed by the Contractor, in the amounts determined in accordance with the provisions of Clause 6.6 (GCC 2015) of Conditions of Contract.

PS A 8.5.2 Works Executed by Nominated Subcontractors

a) Work to be Executed by a Nominated Subcontractor..... Unit : Prov Sum

b) Overheads, Charges and Profit on Item (a) above.....Unit : %

Subitems (a) and (b) will be provided in the Schedule of Quantities for each different Nominated Subcontractor included in the Contract.

The Contractor shall be reimbursed under subitem (a), in substitution of the respective Provisional Sums (if any) allowed in the Schedule of Quantities, the amounts actually paid or payable by the Contractor to the respective Nominated Subcontractors, in accordance with the provisions of Clause 6.6 (GCC 2015) of the Conditions of Contract.

The Contractor shall be paid under subitem (b), either

a) where the unit of measurement for subitem (b) was specified as being a percentage, the respective percentage, as stated by the Contractor in is tender, of the amount certified by the Engineer for payment under the related subitem (a), all in accordance with the provisions of Sub/Clause 6.6.1.2.1 (GCC 2015) of the Conditions of Contract, or

b) where the unit of measurement for subitem (b) was specified as being a lump sum, an amount which is in the same proportion to the amount certified for payment under subitem (a) and the tendered lump sum is to the amount of the Provisional Sum stated under subitem (a) in accordance with the provisions of Clause 6.61.2.2. (GCC 2015):

The percentage or sum (as applicable) paid under subitem (b) as aforesaid, shall be deemed to include for full and final compensation to the Contractor for all costs as may be incurred and all charges and profits associated with the engagement, supervision, administration and management of the Nominated Subcontractor required of him in fulfilling its obligations under the Contract as the Principal Contractor."

PS A 8.6 PRIME COST ITEMS

Substitute A 8.6 with following:

PS A 8.6 PRIME COST SUMS

a) Description of Items to which Prime Sums Applies ..... Unit : Prov Sum

b) Charges required by Contractor on Item (a) above .....Unit : %

Subitems (a) and (b) will be provided in the Schedule of Quantities for each different item to which a Prime Cost Sum applies.

The Contractor shall be reimbursed under subitem(s) (a) in substitution of the respective Prime Cost Sums included in the Contract, the actual price(s) paid or payable by him in respect of the goods, materials or services supplied, but excluding any charges for the Contractors labour, profit , carriage, establishment or other charges related to such goods, services or materials.

The Contractor shall be paid under subitem (b), the respective percentage, as stated by the Contractor in his tender, of the amount certified by the Engineer for payment under the related subitem (a). The percentages tendered by the Contractor for each respective subitem (b) included in the Schedule of Quantities shall be deemed to be in full and final compensation to the Contractor in respect of any charge by the Contractor for labour, carriage profit, establishment and for any other charges related to the goods, services or materials supplied under the related subitem (a).

If the Contractor shall have omitted within his tender to insert a tendered percentage under subitem (b), or tendered a zero percentage, the Contractors tendered rate for subitem (b) shall be deemed to be zero and the Contractor shall not be entitled to any payment under subitem (b).

Note in correction with additional tests required by the Engineer:
When a PC sum is included in the Schedule of Quantities for additional tests required by the Engineer, the Contractor shall be responsible for both the costs of normal testing as described in the Project Specifications and for the cost of any additional test that indicates that the specifications have not been complied with."

Where work is to be done by a sub-contractor, such as DFA and/or Telkom, the Contractor is to take cognisance of the works to be completed and must ensure that the Date of Practical Completion and/or Due Completion date is not delayed. Should the Contractor fail to programme of the said works, any delay will be for the Contractors account.

The Contractor must liaise with the relevant authority (DFA: Mr Paul Roos – 082 658 5695 & Telkom: Mr. Eben de Koker 081 406 1007) and Clause 2.1 of the GCC 2015 (3rd Edition) applies in this regard. This work must therefore be effectively programmed for each section of the works to be completed by the sub-contractor and Clause 4.4 of the GCC 2015 (3rd Edition) shall apply in this regard. All costs pertaining to this is deemed to be included in the overhead costs (of the rates tendered).

The amounts specified in the bill of quantities are provisional and preliminary amounts and may be reduced and/or removed completely at the discretion of the Employer.

PS A 8.7 DAYWORK

Substitute A 8.7 with following:

Measurement and payment shall be in accordance with the provisions of Clause 6.5 (GCC 2015) of the Conditions of Contract.

A 8.8 TEMPORARY WORKS

PS A 8.8.2.1 **Accommodation of Traffic ..... Unit: Sum**

Add the following to A 8.8.2:

The rate shall include all costs pertaining to:

- the planning, submitting and obtaining of approval for the traffic accommodation plans required,

- the maintenance, **replacement and storage** of all temporary barricades, road signs, lights, traffic signals etc. as required,
- for the guarding and protection of the works,
- for the construction, gravelling and maintenance of access roads and detours to the site of the works, borrow pits or spoil sites,
- as well as for the later removal or the cleaning and tidying up thereof.
- **All according to the latest South African Development Community Road Traffic Signs Manual, Chapter 13**.

PS A 8.8.2.2 Temporary Traffic Control Facilities **..... Unit: No. or Man-day**

Add the following to A 8.8.2:

The rate shall cover all costs pertaining to the provision (inclusive of the posts where required), erection and final removal from work at completion of all temporary barricades, road signs, lights, flagmen, etc. as required, **all according to the latest South African Development Community Road Traffic Signs Manual and SANS 1200 MM**. Notwithstanding the provisions of SANS 1200 MM sub clause 3.2 sign faces shall have a painted background and symbols/characters of Engineering Grade (Grade 1) and High Intensity Grade retro reflective material respectively with signboards constructed from 12.7mm weather resistant particle board. Upon removal from the works these items shall become the property of the contractor.

The unit of measurement for a flagmen shall be a day worked by a flagmen. The tendered rate shall cover fully all costs for a flagmen who is required to control traffic by way of flags or portable Stop/Go-Ry signs and shall include the provision of safety jackets.

No separate payment will be made for the provision of watchmen, flagmen, flags etc. required under this section; any additional costs will have been deemed to be covered under sub clause PS A 8.8.2.1 above.

PS A 8.8.2.3 **Relocate Temporary Traffic Control Facilities as per approved Traffic Accommodation Plans Unit: No**

Add the following to A 8.8.2:

The unit: No refers to the number of signs to be relocated. The rate shall cover all costs pertaining to the moving and re-erection of all temporary barricades, road signs, lights, etc. as required as per approved Traffic Accommodation Plans **all according to the latest South African Development Community Road Traffic Signs Manual – Chapter 13**.

PS A 8.8.2.4 **Removal of Road Markings ..... Unit: m^2**

Add the following to A 8.8.2:

The unit of measurement shall be square metres of broken or unbroken white of yellow lines, word markings or symbols removed. Spaces between markings in broken lines will not be included in the in overall area measured. The tendered rate shall include all costs associated with the removal of road markings by sandblasting. The repainting of road markings and the painting of temporary road markings will be provided for separately elsewhere in the schedule.

PS A 8.8.4 Existing Services

Substitute A 8.8.4 with the following:

PS A 8.8.4 Location and Protection of Existing Services

Rates to include PS A 5.4.1. Where particular items are provide in other sections of the schedule, the costs of detection, exposure, protection and alterations shall be covered by such particular items. Where no such particular items are provided and where there is reason to expect the presence of such a service or services, the following items will apply:

PS A 8.8.4.1 Provision of and using of specialist detection equipment for:

a) Water, sewer and stormwater pipes ..... Unit : h

b) Eskom and other electrical cables ..... Unit : h

c) Telkom and other data cables ..... Unit : h

PS A 8.8.4.2 Hand excavation to locate and expose existing services in all materials ..... Unit : m^3

The rate shall cover the cost of excavating by means of hand tools within authorised dimensions, for all precautionary measures necessary to protect the service from damage during excavation and backfilling and for subsequent backfilling and compaction. Compaction of material in all areas expect in roadways shall be to 93% of MAASHTO density (100% for sand).

The tendered rate shall also include for keeping the excavations safe, for dealing with surface and subsurface water and for the removal and spoil of surplus material.

Only quantities that can be reasonably verified by the Employers Agent will be certified for payment. The onus is on the Contractor to ensure that each excavated pit/existing service to verified by the Employers Agent before closing up and Clause 7.5.1 of the GCC 2015 applies in this regard.

PS A 8.8.5 Cost Of Survey In Terms Of The Land Survey Act.....Unit: Sum

Substitute A 8.8.5 with the following:

The sum shall cover all costs incurred to locate, record and protect pegs during the duration of the contract and the reinstatement of all disturbed pegs on completion of the contract in the manner prescribed by the Land Survey Act.

The sum shall cover the cost of all labour, plant and material required for the searching and compilation of a list, all in accordance with the requirements as set out in clause A 5.1.2

PS A 8.8.7 Dealing with Water

a) Dealing with subsurface water.....Unit : Sum

b) Dealing with surface water.....Unit : Sum

The sum shall cover the cost for the provision, operation, maintaining and removal of all plant and materials required to deal with any water anywhere on the Site as required in terms of Subclause 5.1.3 of SANS 1200 D and Subclause 5.1.2 of SANS DB. No additional payment will be made for “Special water hazards”.

The sum shall cover the cost of providing the necessary plant or materials, or both, fully erected and operative on the Site, the cost of operating and maintaining pumps, well points, sheeting, close timbering, and other equipment, as applicable, for 24 hours a day, 7 days a week, throughout the period during which the facilities are required, and cost of removing such goods and restoring the Site to its original condition on completion of that part of the project for which the temporary works were erected.

Equal monthly payments will be made calculated by dividing the sum tendered for the item by the tendered contract period in months. The sum of the equal monthly payments shall not exceed the sum tendered for this item, except where an extension of the contract period is approved by the Engineer in which case the monthly payments will be made pro-rata to the extension of time only if dealing with water is required.

PS A 8.9 WAYLEAVES

The tendered sum shall include full compensation to the Contractor for all the costs involved in obtaining the way leave as specified in the Scope of Works.

The time required for obtaining way leaves from all authorities and effected parties, including (but not limited to) DFA, Neotel, Telkom, Eskom etc shall be included in the programme of the works and no construction activities shall commence before the way leaves has been obtained by the Contractor and approved by the Engineer.

The location of all existing services indicated on the drawings are approximate and must be confirmed by the Contractor prior to construction and ordering of materials.

The Employers Agent must be informed timeously of all correspondence with all authorities and affected parties, with specific reference to the outcome and/or progress of said correspondence. Failure to timeously inform the Employers Agent will be for the Contractor account.

PS A 8.10 COMPLYING WITH THE HEALTH AND SAFETY REQUITEMENTS

The sum tendered shall include full compensation for all costs, of whatever nature, for complying with the Occupational Health and Safety Act 1993, Construction Regulations 2014, the Occupational Health and Safety Specification as described in C3.4 Part D.

This sum will be paid to the Contractor in equal monthly amounts over the construction period, subject to proper/substantial compliance.

Rate to include PS A 5.7.

PS A 8.12 CONTRACT NAMEBOARDS

The amount tendered for this item shall allow for full compensation for all costs incurred in procuring and erecting contract name boards as shown on the drawings and at the positions indicated by the Engineer on site and for removing the boards at the end of the contract.

SANS 1200 C: SITE CLEARANCE

C 3 MATERIAL

PS C 3.1 DISPOSAL OF MATERIAL

Add the following to C 3.1:

The Contractor shall obtain his own dumping site for the disposal of material and all transport costs shall be included in the rates tendered for site clearance. No overhaul is payable.

C 5 CONSTRUCTION

PS C 5.1 AREAS TO BE CLEARED AND GRUBBED

Substitute the first sentence of C 5.1 with the following:

Unless otherwise indicated by the Engineer, clearing and grubbing will be limited to street reserves or such wider area as is necessitated by the street prism, borrow pits, a 10 m wide strip for concrete and/or earth channels and a 3 m wide strip for pipelines not in street reserves, if requested by the Engineer, the spoil areas. The Contractor may proceed with clearing and grubbing after the handing over of the site. Measurement and payment for clearing and grubbing shall only occur for areas as required in writing by the Engineer.

Substitute the last paragraph with the following:

The Contractor shall program his work in such a manner that re-clearing will not be necessary. The cost of re-clearing shall be borne by the Contractor.

PS C 5.2 CUTTING OF TREES

PS C 5.2.3 Preservation of trees

PS C 5.2.3.2 Individual trees

Substitute the last sentence of C 5.2.3.2 with the following:

Trees must be left standing and undamaged, except where ordered in writing by the Engineer.

PS C 5.3 CLEANING

Add the following to C 5.3:

The removal of existing fences will only be allowed on written approval of the Engineer. The Contractor shall on his own cost immediately repair any damage done to existing fences due to construction work, if the fences are not to be removed.

C 8 MEASUREMENT AND PAYMENT

C 8.2 SCHEDULED ITEMS

PS C 8.2.12 Remove and reinstate existing:

Kerb / Edging.....Unit: m

The tendered rate shall include full compensation for the careful removal of kerbs or edging, the temporary stockpiling and cleaning thereof and the reinstatement once the work has been completed, including all necessary excavation, backfilling and concrete bedding and backfilling using 15 MPa concrete. In the event of the Contractor damaging any of the kerbs, he will replace it at his own cost.

PS C 8.2.13 Raise or Lower Existing Manholes / Valve Chambers .....Unit: No

The rate shall cover the cost to raise or lower the existing manhole valve chambers by a maximum of 300mm, including all excavations, finishings and spoiling of surplus material.

SANS 1200 D : EARTHWORKS

D 2 INTERPRETATIONS

PS D 2.3 DEFINITIONS

Add the following to D 2.3:

Sand (cohesionless and non-cohesive)

For the purposes of the compaction requirements, a non-plastic material of which not less than 95 % by mass passes a sieve of nominal aperture size 4,75 mm, and not more than 10 % passes a sieve of nominal aperture size 0,075 mm.

D 3 MATERIALS

D3.1 CLASSIFICATION FOR EXCAVATION PURPOSES

PS D3.1.1 Method of Classifying

Add the following to D3.1.1:

The classification of material other than “soft excavation” shall be agreed upon before excavation may commence.

The Contractor shall immediately inform the Engineer if and when the nature of the material being excavated changes to such an extent that a new classification is warranted for further excavation. Failure on the part of the Contractor to advise the Engineer in good time shall entitle the Engineer to reclassify, at his discretion, such excavated material.

PS D3.1.2 Classes of Excavation

Substitute paragraphs D3.1.2b), d) and e) with the following:

No intermediate excavation shall be measured and paid for. Excavation in intermediate materials shall be classified/measured as excavation in soft materials.

D 3.3 SELECTION

PS D 3.3.1 General

Substitute the second paragraph of D 3.3.1 with the following:

The Contractor shall deal selectively with material from general excavation. Any imported material in road reserves that do not comply with the minimum requirements for the respective layers, shall be removed and replaced with suitable material, all at the Contractor's expense.

The Contractor shall deal in such a way with materials from all excavations to ensure that usable material is not contaminated with unsuitable material. If usable material is contaminated, such contaminated material shall be removed and replaced with suitable material, all at the Contractor's expense. No additional payment shall be made in respect of this and all relevant costs shall be deemed to be included in the tendered rates.

All unsuitable material shall be removed prior to importing fill material to such areas.

D 5 CONSTRUCTION

D 5.1 PRECAUTIONS

PS D 5.1.1 Safety

PS D 5.1.1.1 Barricading and lighting

Substitute “Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)” with “Occupational Health and Safety Act, 1993 (Act 85 of 1993)”.

PS D 5.1.1.2 Safeguarding of excavations

Substitute “Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)” with “Occupational Health and Safety Act, 1993 (Act 85 of 1993)”.

PS D 5.1.2 Existing Services

PS D 5.1.2.2 Detection, location and exposure

Add the following to D 5.1.2.2:

If existing services are not shown on the drawings but the existence thereof can be reasonably expected, the Contractor shall, in conjunction with all relevant authorities, determine the exact depth and location of such services before the commencement of construction. After locating the exact position of services, whether indicated on the drawings or not, such services shall be deemed to be known services and the Contractor shall be liable for all costs and subsequent costs arising from the damage thereof as a result of the Contractor's activities. These services must also be indicated on the "As Built" drawings.

PS D 5.1.2.3 Protection Of Cables

Substitute "estimated position" in the second sentence of D 5.1.2.3 with "actual or exposed position".

PS D 5.1.2.4 Negligence

Substitute D 5.1.2.4 with the following:

Where a service is damaged because of the contractor's negligence, any costs arising from such damaged service will be payable by the contractor.

PS D 5.1.2.5 Works next to a major Telkom optic fibre route (Category: SAT2)

The tenderer must make themselves aware of any restrictions with regards to working next to this service, the use of plant, access and safety. Allowance must be made for this in the program and tendered tariffs. The approximate position of this service is indicated on the services drawing.

PS D 5.1.3 **Stormwater and groundwater**

Add the following to D 5.1.3

The contractor's responsibility is to allow drainage of flows that can be handled by a 200mm wide trench. Where trenches cannot be self-drained, they should lead to a sump equipped with a 75mm air-driven pump the output of which is over 12l/s.

PS D 5.1.4 Nuisance

PS D 5.1.4.1 Dust nuisance

Add the following to D 5.1.4.1:

The Contractor is responsible for dust control and is liable for all claims that may result from dust nuisance on all parts of the site and at all times from the date of handing over of the site to the completion date of the contract. No payment regarding the above-mentioned will be made and all costs shall be deemed to be covered by the tendered rates.

PS D 5.1.6 Road Traffic Control

Add the following to D 5.1.6:

a) Sufficient road signs must be erected in such a way that motorists will be warned in time of works, e.g. at the closing of a street sufficient signs to direct traffic must be erected at the preceding intersection.

b) Bypasses and/or road signs shall be provided and/or erected at all locations where the free flow of traffic is obstructed and shall be approved by the Engineer before the commencement of construction. Where main roads are crossed, detours and temporary road signs and –markings must be provided and maintained.

c) Where a trench crosses a street or any place where a trench crosses the direction of traffic flow, drums painted white must be placed with danger tape in between.

d) Danger tape must be put up between drums and tied around the drums.

e) Drums may not be filled with stones. The spacing of drums must be in such a way (maximum 5 m) that they are visible from all directions.

f) Sufficient safety measures must be utilised for pedestrians.

All these road signs and –markings must be according to the latest South African Road Traffic Signs Manual.

D 5.2 METHODS AND PROCEDURES

D 5.2.1 Site Preparation

PS D 5.2.1.1 Clearing or Clearing and Stripping of Site

Delete subclause D 5.2.1.1b)

PS D 5.2.1.2 Conservation of topsoil

Add the following to D 5.2.1.2:

Removal of topsoil shall only occur in areas as approved, in writing, by the Engineer. The topsoil shall be conserved for use elsewhere.

D 5.2.2 Excavation

PS D 5.2.2.1 Excavations for general earthworks and for structures

Add the following to D 5.2.2.1:

Strip foundations and encasement of pipes shall be cast directly against excavated surfaces.

Materials under foundations and floors of structures which are regarded by the Engineer as unsuitable for the bearing of such structures shall be removed to the depths and widths ordered. The excavated voids shall then be filled with sand compacted to 100 % of MAASHTO density, to the underside of such foundation or floors, unless a soil cement mixture in terms of PS D 5.2.3.2 or mass concrete is ordered by the engineer.

PS D 5.2.2.3 Disposal

Substitute the second sentence of D 5.2.2.3 with the following:

The Contractor shall provide all the necessary spoil sites for the spoiling of all surplus and unsuitable materials and shall make the necessary arrangements with the owner of the site where the material is disposed of, and pay all charges and levies as may be applicable for the use of such spoil sites.

Every spoil site provided by the Contractor shall be approved by the local authority in whose area it is located, and the spoiling shall comply with the applicable statutory and municipal regulations as well as the requirements of the owner of the spoil site.

No additional payment shall be made to the Contractor in respect of locating and making arrangements for suitable spoil sites and spoiling material at such sites and the costs thereof shall be deemed to be included in the tendered rates and prices for the applicable excavation items.

Suitable surplus material from excavations shall be utilised as fill material where filling is required of which the positions and levels are shown on the drawings, and should be placed, spread, shaped to the specified levels and compacted to 90% (100% for sand) of Mod AASHTO density, or other density as specified.

The Contractor will provide the Engineer with all details and approvals for the spoil site at time of Commencement of the Contract.

PS D 5.2.2.4 Excavation by hand around existing services

Where hand excavation is required around existing services it shall be done within 3,0 m above and on both sides of cables and within 500 mm above and on both sides of pipes, as well as underneath the services.

D 5.2.3 Placing and Compaction

PS D 5.2.3.2 Backfilling of trenches and backfilling against structures

Add the following to D 5.2.3.2:

Backfilling around structures shall be compacted to 95% (100% for sand) of MAASHTO density.

When specified or ordered by the Engineer the backfilling against structures shall be done using a mixture of soil cement. The mixture shall contain 5% cement and just sufficient water for the mixture to be placed and compacted like ordinary backfilling material.

PS D 5.2.3.3 Backfilling of over-excavations

Where the Engineer approved the backfilling of over-excavation with suitable material, the backfilling material must be compacted to the greater of 95% of the MAASHTO density or the density of the insitu material.

PS D 5.2.4.2 Top soiling
Add the following to D 5.2.4.2:
Topsoil shall be placed on the designated landscaping areas as per drawing where no paving is specified, or in areas where directed by the Engineer.

D 5.2.5 Transport for Earthworks

PS D 5.2.5.2 Overhaul

Replace D 5.2.5.2 with the following:

The transport of all excavated materials, irrespective of the distance and source, shall be deemed to be free-haul, the cost of which is included in the Contractor's tendered rates and prices for the excavation of the materials. No separate compensation shall be made for the transportation of excavated materials.

D 8.3 SCHEDULED ITEMS

PS D 8.3.2 Bulk Excavation **Unit: m³**

Add the following to DB 8.3.2 (a):

Excavation in intermediate material will not be measured separately and is deemed to be included in the rate tendered. On the areas where fill is to be placed, the area will first be prepared by ripping and scarifying the area to ensure sufficient mixing with the fill to be placed onto the area. Rate will be based on all relevant amendments in the project specifications.

Where the earthworks are measured for the storm water (SW) dam, the rate will further (to the above) include all requirements of SANS 1200 DM, and as amended in the project specifications, to ensure cut to final level and shaping of the side slopes to 1:2.

SANS 1200 DB : EARTHWORKS (PIPE TRENCHES)

DB 3 MATERIALS

PS DB 3.5 BACKFILL MATERIALS

Add the following to DB 3.5 b):

All pipe trenches underneath the roadway and which are subject to loads from road traffic shall be backfilling with clean sand up to the subbase. The clean and will be of at least G7 quality and the Contractor must provide tests results to the Engineer as prove thereof.

DB 3.6 MATERIALS FOR REINSTATEMENT OF ROADS AND PAVED AREAS

PS DB 3.6.1 Subbase and Base

Substitute DB 3.6.1 with the following:

Where trenches cross or run adjacent to surfaced roads and paved areas of which the surfaces are scheduled to be reinstated, the material excavated from the existing base and/or subbase pavement layer(s) shall be stockpiled and used (imported from stockpile) in the reconstruction of the subbase layer. As least 50% of the quantities required for the subbase will be stockpiled and imported from the stockpile. Where applicable new material complying with the requirements of SABS 1200 MF shall be used in the reconstruction of the base layer. Any shortfall in material for the reconstruction of the subbase layer shall be made up by the use of material complying with the requirements of SABS 1200 ME.

DB 4 PLANT

PS DB 4.1 EXCAVATION EQUIPMENT

Add the following to DB 4.1:

All excavations exceeding the specified widths shall be backfilled with approved selected material. No payment shall be made for this and all relevant costs shall be deemed to be included in the tendered rates.

DB 5 CONSTRUCTION

PS DB 5.4 EXCAVATION

Add the following to DB 5.4:

Excavation and backfilling of pipe trenches on sidewalks in the residential area shall be done in such a way as to ensure the least possible disruption to the public and entrances to properties. No additional payment shall be made for this and all relevant costs shall be deemed included in the tendered rates.

DB 5.6 BACKFILLING

PS DB 5.6.2 Material for Backfilling

Substitute the last paragraph of DB 5.6.2 with the following:

The provisions of PS DB 3.5 b) shall apply mutatis mutandis.

PS DB 5.6.3 Disposal of Soft Excavation Material

Replace:

"*of along the trench servitude within the freehaul distance from the source of such excavation material*"

with the following:

"*at a dump site of the Contractors choice*".

Further, the rate is to include for Clause PS D 5.2.5.2.

DB 5.7 COMPACTION

PS DB 5.7.1 Areas not Subject to Traffic Loads

Add the following to DB 5.7.1:

Compaction in areas not underneath roadways will be compacted sufficiently as to ensure that no differential settlement will occur. Sand will be compacted to 100% MOD AASTHO.

PS DB 5.7.2 Areas Subject to Traffic Loads

Add the following to DB 5.7.2:

Only trenches underneath roadways will be regarded as areas subject to traffic loads. Pipe trenches in a road reserve is not necessarily regarded as areas subject to traffic loads. If the Engineer specifically instructs the Contractor (in terms of the GCC 2015) to regard these areas as areas subject to traffic loads, only then will it be regarded as areas subject to traffic loads.

The onus is on the contractor to prove to the engineer that sufficient compaction was obtained on insitu soil preparation after excavation and material backfilled in the respective layers. The frequencies of control testing will not exceed 40m in the case of a continues pipe run or a minimum of two positions between manholes constructed for stormwater- and sewer services. At each position compaction readings must be taken on the insitu material prepared after excavation, the bedding (imported), the blanket (imported) and the main fill (backfilled). The costs of these tests shall be deemed included in the relevant rates for construction of such items.

Sand backfilling shall be compacted to 100 % of MAASHTO density.

DB 5.9 REINSTATEMENT OF SURFACE

PS DB 5.9.4 Bitumen Roads: Subbase and Base

Add the following to DB 5.9.4:

Any additional imported material required for the reinstatement of selected layers, subbase or base shall comply with the requirements of the relevant standardised and/or project specifications.

PS DB 5.9.5.1 **Bitumen Roads: Surfacing**

Add the following to DB 5.9.5.1:

The thickness of the asphalt shall be 40 mm except if specified otherwise. Compaction of the asphalt wearing course will be to a minimum of 93% RICE Density and to a maximum of 97% Rice Density.

DB 8 MEASUREMENT AND PAYMENT

PS DB 8.1 BASIC PRINCIPLES

Add the following to DB 8.1.2 c):

Ground levels within road reserves shall be regarded as the final road level and the finished levels of the sidewalks.

DB 8.2 COMPUTATION OF QUANTITIES

PS DB 8.2.4 Shoring

Add the following to DB 8.2.4:

Excavations must be shored in accordance with the applicable regulations and acts if the ground conditions require shoring. The Contractor must acquaint himself with the requirements of the applicable regulations and acts regarding shoring, as well as the ground conditions. No payment will be made in respect of this and all costs will be deemed as covered by the rate of the excavation, unless measured specifically.

DB 8.3 SCHEDULED ITEMS

PS DB 8.3.2 Excavation

In 8.3.2 replace "*within freehaul distance*" with "*at spoil site provided by the Contractor or municipal dump site*".

The rate will include PS DB 5.7.1, PS DB 3.6.1, PS DB 4.1, PS DB 8.2.4, PS DB 8.3.4 and all other relevant amendments in the project specifications. No excavations will be allowed to be left opened over non-working days/times.

No boulder excavation will be measured separately. Should boulders be present in trench excavations, the Contractor will break the boulders with pneumatic tools and measurement will be under "hard rock material". Therefore, for trench excavations, boulders will be classified/measured as "hard rock material".

Intermediate material will be classified/measured as "soft material" and this is deemed included in the rate tendered.

PS DB 8.3.2 b) Extra over item (a) above for:

2) Intermediate material ..... m^3

3) Hard rock material ..... m^3

The tendered rate shall include full compensation for the additional cost, effort and time resulting from excavating in the respective materials using hand methods only.

The unit of measurement shall be cubic metre of material, measured in place according to the authorised dimensions, which was excavated by hand on the specific prior written instructions of the Engineer, provided always that the Engineer's said instruction shall have stated that measurement and payment for such hand excavation shall be in accordance with this item.

For hard rock material, no blasting is allowed and material will removed by means including pneumatic tools/breakers.

PS DB 8.3.2 c) Excavate and dispose of unsuitable material from trench bottom ..... m^3

Replace "*ordered*" with "*instructed by the Engineer*" and "*within freehaul distance*" with "*to an approved dumping site*".

DB 8.3.3Excavation Ancillaries

PS DB 8.3.3.1 Make up deficiency in backfill material ..... Unit: m^3

Add the following to DB 8.3.3.1 (c):

The material from a commercial source will be at least the quality specified and will only be done upon receiving written instruction from the Engineer or in areas of traffic loads. Rate will include PS DB 4.1 and also all relevant amendments in the project specifications.

Quantities will be calculated and measured in terms of the minimum trench widths and in accordance with PS DB 4.1 and DB 5.2 and the Contractor is deemed to allow for any additional widths and side slopes in the rate tendered.

PS DB 8.3.3.3 Compaction in road reserve ..... Unit: m^3

Substitute the heading of DB 8.3.3.3 with the following:

PS DB 8.3.3.3 Compaction under road surfaces

Add the following to DB 8.3.3.3:

This item is only applicable to the backfill above the bedding and fill blanket and will only be measured for areas under road surfaces. Rate will include all relevant amendments in the project specifications. Rate to include PS DB 5.7.2.

PS DB 8.3.3.4 Overhaul

Replace DB 8.3.3.4 with the following:

The transport of all excavated materials, irrespective of the distance and source, shall be deemed to be free-haul, the cost of which is included in the Contractor's tendered rates and prices for the excavation of the materials. No separate compensation shall be made for the transportation of excavated materials.

PS DB 8.3.4 Particular Items

PS DB 8.3.4 (a) Shore trench opposite structure or service

Replace the heading of this sub-item with the following:

"PS DB 8.3.4 (a) Shore trench opposite structure or service or in unsuitable excavated materials for depths:"

Add the following after the last sentence:

"Separate items will be measure for depths of trenches in increment of 1.0m. Each rate for each stated category shall cover the cost of shoring from ground level up to the full depth of the stated category. Payment for this item will only be made if written instruction were issued by the Engineer. Shoring will be done as per approved methods which includes timber sheeting, struts etc. A method statement must be submitted to the Engineer for approval prior to execution of the works. Payment will only be done upon receiving prior written instruction from the Engineer".

PS DB 8.3.5 Existing Services that Intersect or Adjoin a Pipe Trench

Replace DB 8.3.5 (ii) with the following:

Protection and maintenance must be to the satisfaction of the Engineer and the Contractor may be instructed to remedy, at the discretion of the Engineer, should it be found that the works are at risk. Any remedial work will be for the Contractors account. All services must at all times, or reasonably as determined by the Engineer, operate/function as intended. Should a service fail, due to improper protection and maintenance of the existing services (whether the Engineer has approved the method and/or protection or not), a penalty will be imposed for the Contractors account, to the amount of R 10 000 per transgression/failure, in addition to all subsequent damage (if any) and any emergency remedial works required.

PS DB 8.3.5 a) Services that intersect a trench ..... Unit: No

Add the following to DB 8.3.5 a):

Existing services with a depth of cover exceeding 300 mm, measured from the bottom of excavation to the top of the existing service shall not be measured and paid for. There will be distinguished between existing trunk services and existing erf connection.

The rate shall also allow for the following costs:

i) Sufficient photo's have to be taken of existing services and handed over to the Engineer before they are being crossed, if there is a possibility of a difference in opinion over the condition of those services, especially on private property.

ii) If such a service is damaged, it has to be repaired to its original condition or if possible, to a standard agreed to in writing with the relevant owner. This agreement has to be approved by the Engineer.

iii) If such a service is removed, it has to be replaced as per original.

PS DB 8.3.5b) Services that adjoin a trench..... Unit: No or m

Add the following to DB 8.3.5b):

The unit "number" will only be used for services such as poles and trees.

No payment will be made for overhead services that do not rest directly on the ground except where allowance is made for this in the schedule of quantities.

Existing services that rest directly on the ground e.g. poles, trees, walls and structures are handled in the same way as underground services, but the axis of the service will be determined as follows:

The vertical axis is defined as the nearest side or corner of the existing structure to the excavation, measured at the point where the structure and natural ground level intersect.

The horizontal axis will be at the point where the structure and the natural ground level intersects. In this instance, where the excavation falls above the 45° line but within 1,0 meter horizontally from the structure, the service will also be measured as adjoining.

If the structure, according to the abovementioned, does not qualify as an adjoining service but the foundation of the structure is such that if a 45° line drawn from the nearest bottom corner thereof cuts through the excavation, the structure will be measured as an adjoining service **if approved by the Engineer**.

There will be distinguished between existing trunk services and existing erf connection.

The rate shall also allow for the following costs:

i) Sufficient photo's have to be taken of existing services and handed over to the Engineer before they are being crossed, if there is a possibility of a difference in opinion over the condition of those services, especially on private property.

ii) If such a service is damaged, it has to be repaired to its original condition or if possible, to a standard agreed to in writing with the relevant owner. This agreement has to be approved by the Engineer.

iii) If such a service is removed, it has to be replaced as per original.

Replace the last phrase “measured for shoring” with the words “protected by shoring”. The rate for this item shall cover the cost of any necessary shoring.

DB 8.3.6 Finishing

PS DB 8.3.6.1 Reinstate road surfaces complete with all courses .....Unit: m²

Add the following to DB 8.3.6.1:

Rate to include PS DB 3.6.1, PS DB 4.1, PS DB 5.9.1 and also prime and via seal. Prime and via seal to comply with the specification contained in SANS 1200 MH. The Asphalt will comply with MH 5.5.2. Testing of the asphalt to be done in accordance with SANS 1200 MH as amended in the project specifications and must comply with PS M 7.3.

Quantities will be calculated and measured in terms of the minimum trench widths and in accordance with PS DB 4.1 and DB 5.2 and the Contractor is deemed to allow for any additional widths and side slopes in the rate tendered.

Rate will include all relevant amendments in the project specifications.

Where existing paving is to be reinstated, in addition to the above, the rate will include transport from the stockpile, placing on sand bedding and laying of the pavers in accordance with SANS 1200 MJ and as amended in the project specifications.

PS DB 8.3.6.2 Extra-over DB 8.3.6.1 for imported material.....Unit: m³

Rate to include the following:

The rate is an "extra-over" Item DB 8.3.6.1 and include all costs of supplying and placing of imported material in the final position with material from commercial sources.

The material for subbase will comply with SANS 1200 ME and as amended in the project specifications. The material for base will comply with SANS 1200 MF and as amended in the project specifications.

Quantities will be calculated and measured in terms of the minimum trench widths and in accordance with PS DB 4.1 and DB 5.2 and the Contractor is deemed to allow for any additional widths and side slopes in the rate tendered.

PS DB 8.3.9 Saw-cutting of existing premix .....Unit: m

The rate shall include all equipment and labour necessary for the cutting of the premix to a neat edge and will include removal of the area of premix to be spoiled in terms of clause PS C 3.1. The rate will include the full width of the premix to be removed as indicated on the typical detail drawing and is deemed to include all over break.

SANS 1200 DM: EARTHWORKS (ROADS, SUBGRADE)

DM 3 **MATERIALS**

PS DM 3.1 **CLASSIFICATION FOR EXCAVATION PURPOSES**

Add the following to DM 3.1:

All in situ pavement material shall be classified as soft material for excavation purposes.

DM 3.2 **CLASSIFICATION FOR PLACING PURPOSES**

PS DM 3.2.3 **Selected Layers**

Substitute DM 3.2.3 with the following:

Materials used for selected layers shall comply with the following:

DESCRIPTION	**LOWER SELECTED LAYER (G9 – TRH14)**	**UPPER SELECTED LAYER (G7-TRH 14)**
Minimum CBR at 93 % MAASHTO density (100 % for sand)	7	15
Maximum CBR swell at 100 % MAASHTO density	1,5 %	1,5 %
Maximum size of aggregate after compaction	100 mm	100 mm
Minimum Grading Modulus (GM)	0,5	0,75
Maximum Plasticity Index (PI)	12	12
Maximum Group Index	-	1

All imported material underlying the subbase or base of the final road prism, whichever may be applicable, that does not comply with the requirements for lower selected layer or upper selected layer in the respective depth categories, shall be removed and replaced with material complying with the requirements of selected layers, all at the Contractor's expense.

DM 4 **PLANT**

PS DM 4.2 **PLANT FOR TREATMENT BELOW SELECTED LAYER**

PS DM 4.2.1 **Pneumatic-tyre Roller**

Pneumatic-tyre rollers shall be of the self-propelled type that is equipped with smooth pneumatic-tyre wheels of the same diameter. The mass of the roller shall be at least 10 tons. All wheels must bear the same mass.

The rollers must be equipped with devices that will be able to keep the wheels wet and clean during operation.

The wheels of the roller shall be arranged in such a way that one pass with the roller will cover the whole width of the machine. The roller must be able to take a tyre pressure of 600 kPa and the minimum allowed working tyre pressure shall be 450 kPa. The maximum difference in pressure between any two wheels shall not be greater than 35 kPa.

DM 5 **CONSTRUCTION**

DM 5.1 **PRECAUTIONS**

PS DM 5.1.2 **Accommodation Of Traffic**

Add the following to DM 5.1.2:

Bypasses shall be constructed and road signs erected where the free flow of public traffic is restricted. Such bypasses and road signs shall be in accordance with the "CSRA-CUTA: Road Traffic Signs Sub-committee; Road Signs Note no 13, the SA Road Traffic Signs Manual" and shall be approved by the Engineer before the commencement of construction.

DM 5.2 **METHODS AND PROCEDURES**

DM 5.2.2 **Cut And Borrow**

PS DM 5.2.2.2 **Dimensions of cuts**

Substitute “subbase” in the second paragraph of DM 5.2.2.2 with “subbase or selected layer, whichever may be applicable”, and

Substitute “CBR of at least 7” with “CBR as applicable according to the provisions of PS DM 3.2.3”.

PS DM 5.2.2.3 b) **Cut to spoil**

Substitute DM 5.2.2.3(b) with the following:

All surplus and/or unsuitable material shall be removed from the site and disposed of at the spoil site (as described in PS D 5.2.2.3) and shall be shaped to establish a free draining surface.

PS DM 5.2.2.4 **Temporary stockpiling of materials**

Add the following to DM 5.2.2.4:

The Contractor shall program the works in such a manner that suitable excavated material shall, if practically possible, be placed directly in the appropriate position to ensure that temporary stockpiling is limited to an absolute minimum. No payment shall be made for the temporary stockpiling of material where such material is to be used for backfilling of pipe trenches, except when so ordered in writing by the Engineer.

DM 5.2.3 **Treatment of Road bed**

PS DM 5.2.3.3 **Treatment of road bed**

a) Preparation and compaction of road bed.

Substitute the first paragraph of DM 5.2.3.3(a) with the following:

The road-bed shall be scarified to a depth of 150 mm, watered, shaped and compacted to 93 % of MAASHTO density (100 % for sand), except where otherwise ordered by the Engineer.

In clay areas excavation and shaping to the level as approved by the engineer will be necessary.

PS DM 5.2.5 **Selected Layer**

Add the following to DM 5.2.5:

The Engineer may, depending on the quality of the in situ material, order the omission one or both of the selected layers. To determine the amount of selected layers, if any, the Engineer may order the Contractor to dig test holes with maximum dimensions of 1,5 m x 1,5 m and 1,0 m deep at positions indicated by the Engineer, before construction commences.

The Contractor shall backfill all test holes with selected material and compact it to 95 % of MAASHTO density (100 % for sand), after the Engineer has taken samples and profiled the holes.

DM 6 **TOLERANCES**

PS DM 6.5 **DIMENSIONS AND LEVEL CONTROL**

The Contractor shall submit to the Engineer, in a form acceptable to the Engineer, records of dimension and level control, prior to requesting the Engineer to carry out any routine inspections.

DM 7 **TESTING**

PS DM 7.2 **PROCESS CONTROL**

Amend table 1 of DM 7.2 as follows:

Substitute “2 000 m^2” with “1 500 m^2”, “1 500 m^2” with “1 200 m^2 and “5 000 m^2” with “3 000 m^2”.

PS DM 7.3 **ROUTINE INSPECTION AND TESTING**

Substitute DM 7.3.2 with the following:

No density shall be less than the specified minimum density for the relevant layer.

It is the responsibility of the contractor to prove to the engineer that all the layer works prepared and constructed complies with the minimum specifications specified at the cost of the contractor. The costs of these tests shall be deemed included in the relevant rates for construction of such items.

If the Engineer dispute any test results submitted by the contractor the engineer shall request routine testing. The results which do not comply with the specified minimum requirement for the material or layer, shall be borne by the Contractor and will be subtracted from the monthly payment certificates.

DM 8 **MEASUREMENT AND PAYMENT**

PS 8.2.1 **Volume only measured once**

Substitute the first sentence in DM 8.2.1 with the following:

Earthworks will be measured by volume once only as compacted fill from cut shapes.

DM 8.3 **SCHEDULED ITEMS**

PS DM 8.3.4 Cut To Fill, Borrow to Fill ..... Unit: m^3

Add the following:

Substitute “90 %” in DB 8.3.4 with “93 % (100 % for sand)” and “road prism” with “road prism and borrow pits”.

Add the following:

Separate items will be scheduled for fill in the road prism, fill on spoil areas and fill on erven (where a minimum density for such spoil material is required by the Engineer) and fill from the road prism, fill from the site and fill from commercial sources.

Overhaul within the road reserve is included.

The rate for fill from commercial sources shall, in addition to the requirements of DM 8.3.4, cover the cost of the location of the source, complying with all the applicable precaution as set out in DM 5.1, obtaining the material, selection and transport from the source to the point on the road where it is to be used.

Excavation in intermediate material will not be measured separately and is deemed to be included in the rate tendered.

On the areas where fill is to be placed, the area will first be prepared by ripping and scarifying the area to ensure sufficient mixing with the fill to be placed onto the area. Rate will be based on all relevant amendments in the project specifications.

PS DM 8.3.17 Trim, Shape and Compact Sidewalks ..... Unit: m^2

The area to be trimmed is the unsurfaced area from the back of the kerbs or edging to the boundary of the road reserve, or such wider or narrower area as required by the Engineer. Always confirm with the engineer in writing the width thereof required before shaping the area behind the kerbs. Measurement and payment for the above shall be restricted to areas ordered in writing by the Engineer.

The rate shall cover the cost of trimming and shaping the sidewalks to the lines, levels and dimensions as shown on the drawings, of acquiring additional material to compensate for any material lost due to weather or other reasons, and of the compaction of any loose or disturbed material to 90% MAASHTO-density (100% for Sand)

PS DM 8.3.20 Existing Services Intersecting Excavation For The Box Cut ..... Unit: No
The provision of items DB 8.3.5(a) and DB 8.3.5(b) shall apply mutatis mutandis.
PS DM 8.3.21 Existing Services That Adjoin Excavation For The Box Cut ..... Unit: No or m
The provision of items DB 8.3.5(a) and DB 8.3.5(b) shall apply mutatis mutandis.

SANS 1200 LB : BEDDING (PIPES)

LB 3 MATERIALS

PS LB 3.1 SELECTED GRANULAR MATERIAL

Substitute LB 3.1 with the following:

Selected granular material shall be an aggregate, sand or granular material, all of a non-cohesive nature and free from any organic material, of which the grading analysis shows 100 % passing a 19 mm sieve and not more than 5 % passing a 0,075 mm sieve.

In waterlogged conditions a bedding cradle of the thickness as specified in writing by the Engineer, comprising 19 mm single stone complying with the grading requirements of SANS 1083 shall be used.

PS LB 3.2 SELECTED FILL MATERIAL

Substitute LB 3.2 with the following:

The requirements of PS LB 3.1 shall apply mutatis mutandis.

PS LB 3.3 BEDDING

Add the following to LB 3.3:

HDPE pipes shall be classified as flexible pipes.

PS LB 3.4 SELECTION

PS LB 3.4.1 Suitable Material Available from Trench Excavation

Substitute the first sentence of LB 3.4.1 with the following:

Irrespective the requirements of subclause 3.7 of SANS 1200 DB and subclause 3.4.1 of SANS 1200 LB regarding the use of selective methods of excavation, the Contractor must use selective methods of excavation and supply and use plant that will avoid burying or contaminating material that is suitable and required for bedding or covering the pipeline.

PS LB 3.5 **POLYETHYLENE WARNING TAPE**

The danger tape shall be manufactured from Grade XJF 46/60 polyethylene at least 0,4 mm thick and with a nominal width of 230 mm, and which is completely impregnated with a light orange pigment reasonably matching colour no B26 of SABS 1091.

A black triangle and lighting flashes for electricity, as depicted on sign WW7 of SABS 1186, as well as the words “DANGER, GEVAAR, INGOSI” shall be printed clearly and permanently onto the tape. The whole pattern shall be repeated every 1 m.

The quality of all materials employed shall be such as to ensure the permanency of the tape under all environmental and soil conditions, as well as the stability of the orange pigmentation and the lettering and warning symbols.

The cost to supply, handle and place the tape must be allowed for throughout the rates under the relevant items and no additional payment will be made.

LB 5 CONSTRUCTION

LB 5.1 GENERAL

PS LB 5.1.4 Compacting

Substitute "90 % of MAASHTO" in LB 5.1.4 with "93 % of MAASHTO (100 % for sand)".

LB 8 MEASUREMENT AND PAYMENT

LB 8.1 PRINCIPLES

PS LB 8.1.1 Supply of Bedding Materials Measured Separately

Add the following to LB 8.1.1:

Payment for bedding material and selected fill material is only made if the selected trench-excavation material cannot be obtained from another part of the site of works or designated borrow pits, or from commercial sources.

Rate will include all relevant amendments in the project specifications.

PS LB 8.1.3 Volume of Bedding Materials

Add the following to LB 8.1.3:

c) The volume of the pipe will be deducted when the volume of the bedding material are calculated.

PS LB 8.1.4 Separate Items for Cradle and Blanket

Substitute LB 8.1.4 with the following:

No distinction shall be made as regards material for the bedding cradle and selected fill blanket, and the material shall comply with the requirements for material for bedding cradle.

PS LB 8.1.5 Disposal of displaced material

Substitute LB 8.1.5 with the following:

Material displaced by the pipeline and by imported material from sources other than trench excavations, shall be disposed of at an approved site furnished by the Contractor. No haulage is payable for such material.

PS LB 8.2.2.3 Supply of bedding by Importation from Commercial Sources (Provisional).....Unit: m^3

Add the following to LB 8.2.2.3:

Rate tendered for (a) - (b) to include PS LB 3.1. PS LB 3.2, PS LB 3.3, PS LB 8.1.3 and PS LB 8.1.4.

Add the following to LB 8.2.2.3 (d):

Bedding for adverse soil conditions

Payment will be made if bedding is used on writing order of the Engineer and the material comply with provisions of PS LB 3.1.

Rate will include all relevant amendments in the project specifications

SABS 1200 LD : SEWERS

LD 3 MATERIALS

PS LD 3.1 PIPES, FITTINGS, AND PIPE JOINTS

PS LD 3.1.3 AC Pipes

Add the following to LD 3.1.3:

Class 34 uPVC pipes and fittings shall be used.

PS LD 3.5 MANHOLES, CHAMBERS, ETC.

PS LD 3.5.2 Precast Concrete Sections

Add the following to LD 3.5.2:

Precast concrete sections with an inside diameter of at least 1 000 mm shall be used for manholes.

Where the angle between the inlet and outlet of the manhole deviates by more than 45 ° from the straight or where more then one inlet enters a manhole, the invert level of the outlet shall be 30 mm lower than the lowest inlet invert level.

Sectional spun concrete cylinders shall have been manufactured from dolomitic aggregate.

PS LD 3.5.3 Prefabricated AC Manholes

Substitute LD 3.5.3 with the following:

AC to refer to fibre cement manhole.

Prefabricated FC manholes shall comply with the requirements for fibre-reinforced cement sewer pipes according to SABS 819 with an internal diameter of 1 000 mm. All manholes shall be bitumen-dipped. Trimming of manholes to be undertaken by the manufacturer of the manhole system.

The joint between the manhole and the concrete roof slab shall be sealed effectively with a sealant, to the prescriptions of the manufacturers and approval of the Engineer, to prevent the infiltration of subsurface water or stormwater. Lifting holes shall be sealed off effectively, with an epoxy, after installation and before backfilling.

In the case of only one inlet pipe with the same diameter as the outlet pipe and with a deviation of less than 45° from the straight, the invert level of the outlet pipe shall be 10 mm lower than that of the inlet pipe.

Where the angle between the inlet and outlet of the manhole deviates by more than 45 ° from the straight or where more then one inlet enter a manhole, the invert level of the outlet shall be 30 mm lower than the lowest inlet invert level.

The soffits of all inlet pipes in a manhole shall be on the same level.

If the outlet pipe is bigger than all the inlet pipes, it shall have the same soffit level as the inlet pipes.

To prevent buoyancy of manholes, all manholes deeper than 1,5 m shall be bedded in grade 20 MPa/19 mm concrete to dimensions as specified on drawings. The concrete bases may be partly precast, subject to approval by the Engineer.

All manholes complete with bottom, shall be able to accommodate a water pressure of the full manhole depth, as specified on the drawings, with an additional 50 % safety factor.

PS LD 3.5.7 Step Irons

Substitute LD 3.5.7 with the following:

Step irons shall be installed in all manholes deeper than 1,2 m. Step irons shall consist of polypropylene coated 12 mm high tensile steel, such as Calcamite or similar. The installation of the step irons shall be in accordance with the specification of the manufacturer.

PS LD 3.5.8 Manhole Covers and Frames

Substitute LD 3.5.8 with the following:

Manhole covers and frames to comply with Drakenstein Municipality specifications. Type 4A (light duty) or Drakenstein municipality type double seal heavy duty ductile iron covers and frames to be used.

PS LD 3.6 MARKER POSTS

Add the following to LD 3.6:

Cut single groove on kerb face with grinder 75mm high and 5mm thick, painted brown (oil paint).

LD 5 CONSTRUCTION

LD 5.6 MANHOLES, INSPECTION CHAMBERS, ETC

PS LD 5.6.1 General

Substitute LD 5.6.1 a) with the following:

Manholes shall be constructed as shown on the drawings.

1. Final cover levels of manholes in streets and paved areas shall be to the same level as the street or paved area.
2. On side walks, lawns and garden areas the cover level shall be 20 mm above the final ground level.
3. In midblock sewers it shall be 50 mm above ground level.
4. In the veld 100 mm above natural ground level.

If a manhole is positioned at a low point or in a hollow where stormwater infiltration may occur, the manhole cover level must be raised to a level to avoid the danger of infiltration, or to a level as agreed with the Engineer.

Where FC manholes are specified they must be double bitumen dipped and if the manhole needs to be raised with more than 300 mm, FC sections with the same diameter shall be installed and sealed with epoxy.

PS LD 5.6.3 Step Irons

Add the following to LD 5.6.3:

Step irons shall only be installed in manholes deeper than 1,2 m.

In the case of sand traps the lowest step iron will be installed 300 mm above the floor of the manhole. An additional step iron shall be installed on the opposite side of the sand trap at the same level as the lowest step iron, as shown on the drawings.

PS LD 5.6.4 Brick Manholes

Add the following to LD 5.6.4.2:

All joints and lifting holes must be sealed with Sikaflex-Pro 2 HP or similar approved. External joints must be wrapped with 300mm Denso tape or similar approved.

Add the following to LD 5.6.4.3:

All brickwork shall be plastered on both sides and sealed with two coats Flintkote 3 (ABE) and one coat Silvakote (ABE).

LD 5.9 CONNECTING SEWERS

PS LD 5.9.1 Location And Details

Add the following to LD 5.9.1:

Unit connections shall be installed on the exact positions as indicated on the drawings and shall extend up to 1 m from the building where it shall be blanked of with an end cap.

All connecting sewers shall be laid at a gradient of 1:60, except where connections on the topographical high side can be laid at steeper gradients to end at a minimum depth of 0,8 m.

LD 7 TESTS

PS LD 7.1 GENERAL

Add the following to LD 7.1.5:

All tests shall be repeated after the completion of backfilling of pipe trenches.

LD 8 MEASUREMENT AND PAYMENT

LD 8.2 SCHEDULED ITEMS

PS LD 8.2.3 Manholes

Add the following to LD 8.2.3:

Manholes shall be measured complete as indicated on the drawings and the rate shall be all inclusive for benching, step irons, cover and frame as specified, and it shall make provision for all additional excavation and backfilling.

The depth of manholes as mentioned in the schedule of quantities, shall be measured from the final cover level to the outlet invert level (flow level).

PS LD 8.2.11 Connection To Existing Sewers .....Unit: No

Add the following to LD 8.2.11:

The rate shall cover all work required to break into the existing manhole, handling of sewage flow, cutting of pipe, connecting to it, the provision and installation of a short connector pipe, additional collars and the re-instatement of the manhole and the adjustment required to the benching, including all associated excavations, backfilling and compaction.

Where a new manhole must be provided on an existing sewer, supply and installation of the new manhole will be measured separately.

Where a connection is made directly onto an existing pipeline, the rate shall cover all work relating to the excavations to expose the pipe, cutting of the existing pipe or the removal of an existing end cap, whichever is applicable, and all materials and work required to connect to the existing pipeline.

Any connection to an existing municipal main to be undertaken by the municipality at the contractors account.

SABS 1200 LE : STORMWATER DRAINAGE

LE 3 MATERIALS

LE 3.1 CULVERT UNITS AND PIPES

PS LE 3.1d) Skewed Ends

Substitute LE 3.1(d) with the following:

Where pipe culverts are to be constructed with a skew angle of more than 20°, the skew ends shall be cut on site.

LE 3.4 MANHOLES, CATCHPITS AND ACCESSORIES

PS LE 3.4.3 Manhole Covers, Grid Inlets, Etc.

Add the following to LE 3.4.3:

Covers and frames shall be heavy duty ductile iron with hinged covers in compliance with EN 124-D400. The hinge of the lid must be positioned on the side of the approaching traffic in the lane, or at right angles to the direction of the flow.

PS LE 3.4.4 Step Irons

Substitute LE 3.4.4 with the following:

Step irons shall be installed in all manholes deeper than 1,2 m. Step irons shall consist of polypropylene coated 12 mm high tensile steel, such as Calcamite or similar. The installation of the step irons shall be in accordance with the specification of the manufacturer.

PS LE 3.6 GEOFABRIC BLANKET

Substitute LE 3.6 with the following:

PS LE 3.6 MATERIALS FOR SUBSURFACE DRAINS

- a) **Pipes:** Perforated or slotted uPVC pipes (normal duty) shall, before perforations or slots are provided, comply with the requirements of SABS 791.
- The size of perforations in perforated pipes shall in all cases be 8 mm in diameter ± 1,5 mm and the number of perforations per metre shall be not less than 26 for 100 mm pipes and 52 for 150 mm pipes. Perforations shall be spaced in two rows for 100 mm pipes. The centre-lines of all perforations shall be contained within an arc of between 100° and 160°.
- Slotted pipes shall have a slot width of 8 mm ± 1,5 mm. The arrangement of slots shall be subject to the Engineer's approval, but the total slot area shall be not less than that presented for perforations.
- Pipes without slots or perforations required for conveying ground water from the subsoil drainage proper to the point of discharge, shall be unperforated uPVC pipes of the type specified above, or concrete pipes complying with the requirements of SABS 677.
- b) **Geotextile:** A Kaymat U14 or similar geomembrane shall be used;
- c) **Aggregate:** The nominal size shall be 19 mm and the aggregate shall comply with the requirements of SABS 1083 for concrete aggregate;
- d) **Filter sand:** Sand obtained from approved commercial sources shall be clean, hard and durable and shall comply with the following grading requirements:
- D15 : 0,2 mm to 0,4 mm
  D85 : 1,2 mm to 4,7 mm

LE 5 CONSTRUCTION

LE 5.1 TRENCH BOTTOM

PS LE 5.1.3 Unsuitable Founding Conditions

Substitute "90 % of MAASHTO maximum density" in LE 5.1.3 with "90 % of MAASHTO maximum density (100 % for sand)".

LE 5.2 BEDDING AND LAYING

PS LE 5.2.2 Pipe Culverts

Add the following to LE 5.2.2:

All pipes shall be laid on a Class B bedding, as specified in SABS 1200 LB.

Substitute "Ogee type pipes need not be wrapped but shall be laid with the spigot ends pointing downstream" with " Ogee type pipes shall be wrapped with 400 mm wide suitable geotextile (grade 1) with 300 mm overlap held with plastic straps".

PS LE 5.2.4 Pipes With Open Joints Laid With Geofabric Filter Wrapping

Substitute LE 5.2.4 with the following:

Pipes shall not be laid with open joints.

LE 5.5 CATCHPITS, MANHOLES, INLETS, AND OUTLET STRUCTURES

PS LE 5.5.1 General

Add the following to LE 5.5.1:

The following final cover levels will apply unless otherwise shown on the drawings:

- In streets and paved areas : same level as paved area.
- On side walks, lawns and garden areas : 20 mm above the final ground level.
- In midblock sewers : 50 mm above ground level.
- In the veld : 100 mm above natural ground level.

LE 8 MEASUREMENT AND PAYMENT

LE 8.2 SCHEDULED ITEMS

PS LE 8.2.1 Supply And Lay Concrete Pipe Culverts ..... Unit: m

Add the following to LE 8.2.1:

The provisions of LE 8.2.1 shall apply mutatis mutandis to uPVC pipes. The rate shall include the wrapping of the joints as specified. Rate will be based on all relevant amendments in the project specifications.

PS LE 8.2.4 Extra-over Items LE 8.2.1 and LE 8.2.2 For Cutting End Units For Culverts On Site .....Unit: No

Add the following to LE 8.2.4:

Payment shall be made only for skew cuts greater than 20° at manholes, kerb inlets and inlet and outlet structures.

PS LE 8.2.8 Supply and Install Manholes, Catchpits, and the Like .....Unit: No

Substitute LE 8.2.8 with the following:

The unit of measurement shall be the number of each, in the depth increments as scheduled, fully installed in accordance with the details shown on the drawings.

The rate shall cover the cost of excavating and backfilling with approved selected material from site borrow pits, stockpile or commercial sources, compacted to 93 % of MAASHTO density (100 % for sand), supplying and installing of all material and accessories, the inlet kerbs and the channel adjacent thereto as well as for the removal and spoil of all surplus material. The rate shall also include the connection of pipes to manholes, catchpits, etc. and of building pipes into the walls of such structures, but not for the cutting of skewed ends.

Rate will be based on all relevant amendments in the project specifications.

SABS 1200 LF: ERF CONNECTIONS (WATER)

LF 3 MATERIALS

LF 3.1 PIPES, FITTINGS AND COUPLINGS

PS LF 3.1.4 Polyethylene Pipes

Substitute the second sentence of LF 3.1.4 with the following:

HDPE PE 100 PN12.5, with diameters as scheduled and shown on the drawings shall be used. PVC or nylon couplings and fittings similar to Plasson type shall be used.

PS LF 3.1.6 Ferrules

Substitute LF 3.1.6 with the following:

Use Cobra D2R C20/15/25 ball valve on PVC saddles with brass insert D2R with stainless steel grade 316 nuts and bolts

PS LF 3.4 BEDDING

Substitute LF 3.4 with the following:

The bedding shall be as specified in PS LB 3.1.

PS LF 3.6 MARKINGS AND MARKER POSTS

Add the following to LF 3.6:

The position of the house connection shall be marked on the kerb by cutting a 5mm deep slot with an angle grinder into the concrete kerb face. The slot shall be painted blue (oil paint).

LF 5 CONSTRUCTION

LF 5.2 LAYING FROM MAIN TO ERF

PS LF 5.2.2 Pipe Laying

Add the following to LF 5.2.2:

Erf connection pipes shall be laid as shown on typical drawings.

Erf connections shall be bedded as for flexible pipes except that the selected fill blanket will not be required. The bedding thickness above and below the pipe shall be 100 mm.

Where the erf connections cross areas subject to traffic loads the trench shall be backfilled in accordance with the requirements of PS DB 3.5 and PS DB 5.7.2.

PS LF 5.2.3 Service Connections

PS LF 5.2.3.1 General

Add the following to LF 5.2.3.1:

The working pressure in the mains for determining the test pressure at which tests for erf connections shall be done, will be as specified in PS L 7.3.1.

LF 8 MEASUREMENT AND PAYMENT

PS LF 8.2 SCHEDULED ITEMS

PS LF 8.2.2 Supply, Lay and Test Erf Connections..... Unit: m

Substitute the second paragraph in LF 8.2.2 with the following:

The rate shall cover the cost of supplying and installing of the pipes and exclude the saddles, fittings, Tee-pieces, endcaps, stopcocks and the water meters. The latter items will be measured and paid for under item PS LF 8.2.3.

The rate must provide for all excavations, backfilling with approved material, compaction and the disposal of surplus material.

PS LF 8.2.3 Extra-over Item 8.2.2 for Specials..... Unit: No

Add the following to LF 8.2.3:

The rate for the saddles must include for connecting to the water main.

The rate for the supply and installation of saddles on existing water mains must include for exposing the existing pipe, backfilling and compaction of the excavated material.

SABS 1200 M: ROADS (GENERAL)

M3 **CONSTRUCTION**

The contractor's attention is drawn to the fact that the widening of road shall be done according to the benching method. No additional payment will be made with regard thereto and all the costs relating to the benching-method is deemed to be included in the various rates for the widening.

M 5 **CONSTRUCTION**

Add the following paragraph:

PS M 5.1 **SELECTION**

The Contractor shall deal selectively with material when existing roads are broken up in order that suitable material is not contaminated with unsuitable material. If suitable material is contaminated, the Contractor shall replace such contaminated material with suitable material, at his own expense.

M 6 **TOLERANCES**

PS M 6.3 **FREQUENCIES OF CHECKS**

Add the following to M 6.3:

These checks shall be submitted to the Engineer for his approval.

M 7 **TESTING**

PS M 7.3 **ROUTINE INSPECTIONS AND TESTING**

Substitute M 7.3.3 with the following:

Statistical evaluation of test results shall not be applicable to this contract and all tests shall meet the specified minimum requirements for the specific material.

PS M 8 **MEASUREMENTS AND PAYMENT**

Add the following to M 8:

It is the responsibility of the contractor to proof to the engineer that all the materials and layer works prepared or constructed complies with the minimum specifications specified at the cost of the contractor. The costs of these tests (UCS-, compaction test results, etc.) shall be deemed included in the relevant rates for construction of such items.

If the Engineer dispute any test results submitted by the contractor the engineer shall request routine testing. The results which do not comply with the specified minimum requirement for the material or layer, shall be borne by the Contractor and will be subtracted from the monthly payment certificates.

The cost of all routine testing done by the Engineer, and of which the results are in accordance with the specification shall be paid by the contractor. The contractor may claim this billed cost plus superintendence and administration in his next payment certificate. The cost of failed testing shall not be claimable by the contractor. The employer may elect to pay the commercial laboratory himself, in which case no payment will be made to the contractor for this work. An administration fee on the routine testing for the engineer has been allowed for where paid through the contractor.

SANS 1200 ME: SUBBASE

ME 3 **MATERIALS**

ME 3.2 **PHYSICAL PROPERTIES**

PS ME 3.2.1 **Subbase Material**

Substitute ME 3.2.1 with the following:

a) Materials of G5 quality for use in the subbase shall comply with the requirements in TRH14 – Natural aggregate for pavement layers (G5)

i) Maximum size of aggregate after compaction ..... 63 mm
ii) Maximum liquid limit 30
iii) Maximum plasticity index (PI) 10
iv) Maximum linear shrinkage ..... 5 %
v) Minimum CBR at 95 % of MAASHTO density 45
vi) Maximum CBR swell at 100 % of MAASHTO density ..... 0,5 %
vii) Maximum group index 0
viii) Minimum grading modulus (GM) ..... 1,5 %

Note:

The maximum size aggregate for G5-material used as base for sidewalks shall not exceed 38mm.

- ME 3.3..... **STABILISING AGENT**
- PS ME 3.3.1..... **General**

Substitute ME 3.3.1 b) Portland cement with the following:

"All cement used during construction shall comply with SANS 50197-1 specifications for cement. Where reference is made in this specification or the standard specifications to the cement specifications, e.g. SANS 471: Portland cement and rapid hardening Portland cement, it shall be replaced with the new specification:

SANS 50197-1 "Cement compositions, specifications and conformity criteria Part 1: Common cements".

All cement products on site shall conform to the specification and shall bear the inspection seal or brand mark of the SANS (South African Bureau of Standards)."

ME 5 **CONSTRUCTION**

ME 5.4 **PLACING AND COMPACTION**

PS ME 5.4.1 **Placing**

Substitute "the project specification" in the second paragraph of ME 5.4.1 with "ME 6.1.4".

PS ME 5.4.5 **Work In Restricted Areas**

No additional payment shall be made for work in restricted areas and any relevant costs shall be deemed to be included in the tendered rates.

ME 5.7 **TRANSPORT**

PS ME 5.7.1 **Free haul**

Substitute ME 5.7.1 with the following:

An unlimited free haul distance shall apply to subbase material.

ME 7 **TESTING**

ME 7.2 **PROCESS CONTROL AND ROUTINE INSPECTION AND TESTING**

PS ME 7.2.1 **Process Control**

Replace "1500 m^2" with "1000 m^2" and replace "5000 m^2" with "2500 m^2" in Table 2 of ME 7.2.1.

Each area of road widening will be subject to process control.

PS ME 7.2.2 **Routine Inspection and Testing**

Substitute the second sentence of ME 7.2.2 with the following:

No density shall be less than the specified minimum density for the relevant layer.

ME 8 **MEASUREMENT AND PAYMENT**

PS ME 8.2 **COMPUTATION OF QUANTITIES**

Substitute ME 8.2 with the following:

Measurement and payment shall be to the exact dimensions as shown on the drawings.

DM 8.3 **SCHEDULED ITEMS**

PS ME 8.3.3 Construct subbase course/gravel wearing course with material from commercial source

Unit: m^3

Add the following to ME 8.3.3:

Rate to include PS A 7.1.1,PS A 7.1.2, PS A 7.2, PS A 7.4, PS M 7.3, PS M 8.3, PS ME 3.2.1, PS ME 5.4.1, PS ME 5.4.5, PS ME 5.7.1, PS ME 7.2.1, PS ME 7.2.2, PS ME 8.2 and all other relevant amendments in the project specifications.

SANS 1200 MH: ASPHALT BASE AND SURFACING

MH 3 **MATERIAL**

PS MH 3.1 **PRIME**

Substitute MH 3.1 with the following:

The prime shall be MC-30 cutback bitumen complying with the applicable requirements of SANS 308.

PS MH 3.3 **TACK COAT**

Substitute MH 3.3 with the following:

The tack coat shall be a 60 % Stable-grade bitumen emulsion diluted with water at a 1:1 ratio.

MH 3.4 **BITUMINOUS BINDER**

PS MH 3.4.2 **Surfacing**

Substitute MH 3.4.2 with the following:

The bituminous binder shall consist of 50/70 penetration-grade bitumen complying with the requirements of:

- *SANS 4001-BT1:2014 - Penetration Grade Bitumen's*
- *SANS 4001-BT2:2012 - Cutback Bitumen*
- *SANS 4001-BT3:2014 - Anionic Bitumen Road Emulsion*
- *SANS 4001-BT4:2014 - Cationic Bitumen Road Emulsion*
- *SANS 4001-BT5:2014 - Inverted Bitumen Emulsion*

PS MH 3.5.5 **Sand Equivalent Value**

Substitute "30" with "35" in MH 3.5.5

PS MH 3.5.6 **Grading**

The asphalt shall be continuous graded (medium) as per Table 2 under MH3.5.6

MH 5 **CONSTRUCTION**

PS MH 5.1 **GENERAL REQUIREMENTS**

PS MH 5.1.1 **Preparation of Surface**

Add the following to MH 5.1.1:

The application of the prime coat may only proceed after the written approval of the base by the Engineer and only if the moisture content of the upper 50 mm of the base is lower than 50 % of the optimum moisture content.

PS MH 5.1.5 **Weather Limitations**

Add the following to MH 5.1.5:

If the moisture content of the upper 50 mm of the base is more than 50 % of the optimum moisture content.

MH 5.5 **DESIGN OF ASPHALT**

PS MH 5.5.2 **Marshall Criteria**

Amend Table 6 of MH 5.5.2 as follows:

PROPERTY	**CONTINUOUSLY GRADED ASPHALT SURFACING**	
	MINIMUM	**MAXIMUM**
Stability (kN)	8,0	18,0
Flow (mm)	2,0	6,0

PROPERTY	CONTINUOUSLY GRADED ASPHALT SURFACING	
	MINIMUM	MAXIMUM
Stability/flow (kN/mm)	2,5	-
Voids (%)	-	5.5
Air permeability @ 7% voids (cm^3)	–	1×10^{-8}
Film thickness (µm)	7	–
Immersion index (%)	80	–
VMA (%)	15	–
Average Micron strain deformation per cycle in the dynamic creep test in the 2000 – 3000 cycle range	--	0.55
Indirect tensile strength at 25°C (kPa)	900	1 650
Filler/bitumen ratio	1.0	1.5
Modified Lottman Test @ 7% voids	0.80	
Voids in mix @ 110 gyrations of the Superpave Gyratory Compactor		4.5%
Voids in mix @ 300 gyrations of the Superpave Gyratory Compactor	2.5%	-

PS MH 5.8 **COMPACTION**

Substitute the second paragraph of MH 5.8 with the following:

The compacted asphalt shall have a density equal to or greater than 93%, and less than 97% of rice-density, and must comply with the requirements for the surface texture.

MH 6 **TOLERANCES**

PS MH 6.2 **Bituminous binder content**

Substitute MH 6.2 in its entirety with:

The bituminous binder content, determined on samples taken as specified in 7.2, shall not deviate from the ordered value, as stated in the approved mix design, by more than 0.3% (by mass).

MH 6.3 **DIMENSIONS, LEVELS, ETC.**

PS MH 6.3.6 **Smoothness**

Add the following to MH 6.3.6:

The appropriate degree of accuracy under this contract shall be degree II.

In addition to the abovementioned requirements the surface shall be of such a grade that all surface water shall drain freely to the adjacent kerbs and/or channels and subsequent costs to rectify the surface to comply herewith shall be borne by the Contractor.

MH 7 **TESTING**

PS MH 7.1 **MIX DESIGN**

Add the following to MH 7.1:

The proposed mixture design shall be submitted for approval to the Engineer at least two weeks (14 days) before commencement of the construction of asphalt surfacing. The Contractor shall ensure that the samples, on which the mixture is based, are a true representation of the actual materials to be used for the work.

Replace MH 7.2.3 **Testing by the Engineer** in its entirety with PS MH 7.2.3 **Testing and approval by the Engineer:**

The Engineer will arrange for acceptance testing to be carried out at regular intervals on material sampled from stockpiles, from the mixer, and from the road.

From the results of tests carried out in an approved or accredited laboratory, the Engineer will decide on the acceptability of material placed on the roadway.

For each days asphalt placed, the Contractor will ensure that at least one sample must be split to be tested at 3 SANS accredited labs for correlation testing. For these correlation tests, at least two of these labs must be independent. The tests to include full Marshall testing and 1-4 mentioned below.

Should any dispute arise because of discrepancies between results obtained by the Contractor and those of the said laboratory, the Engineer will use the results of tests carried out by a laboratory of his choice on samples of the completed layers taken from the roadway, as the basis for acceptance or rejection of the material sampled.

The Engineer reserves the right to approve or reject any layer, batch or lot of asphalt that does not comply with the approved mix design and project tolerances for construction. Rejected layers, batches or lots will be replaced with a product complying with project specifications and tolerances at the contractors cost.

The Engineer may order the sampling of both the un-compacted and compacted mix for acceptance approval. In the case of an un-compacted sample, the sample will be taken in the form of a “hot-box” sample from the back of the delivery truck, or my means of a cored sample from a compacted layer.

Such samples may be tested for and must comply with:

(1) the approved mix design;
(2) Project specification of the Martial Criteria in table 6 of PS MH 5.5.2;
(3) Project tolerances, and
(4) Any other test to determine the quality of the layer or mix as determined by the Engineer.

The Engineer may order any thermometric equipment to be tested and he may direct the immediate repair or replacement of any faulty instrument.

SANS 1200 MJ: SEGMENTED PAVING

PS MJ 2.3 DEFINITIONS AND ABBREVIATIONS

Replace “SABS 1058” with “SANS 1058:2012”.

PS MJ 3.1.2 CLASS, STRENGTH AND TYPE

Replace “SABS 1058” with “SANS 1058:2012”.

MJ 3 **MATERIAL**

MJ 3.1 **UNITS**

PS MJ 3.1.2 **Class, Strength And Type**

Add the following to MJ 3.1.2:

The type of paving shall be as specified in the bill of quantities.

MJ 5 **CONSTRUCTION**

PS MJ 5.7 **JOINT FILLING**

Joint filling shall be done with a 1:3 cement-sand mix.

MJ 6 **TOLERANCES**

PS MJ 6.2 **PERMISSIBLE DEVIATIONS**

Add the following to MJ 6.2:

The degree of accuracy shall be degree I.

MJ 7 **TESTING**

PS MJ7.1.1 **TESTING: GENERAL: CHECKING**

Add the following to MJ7.1.1:

A SANS accredited laborartory must be used for conducting tensile splitting tests on the materials that will be used in construction. Testing on batches will be as instructed by the Engineer.

PS MJ 7.4.2 OTHER TEST

PS MJ 7.4.2 OTHER TEST

Replace 7.4.2 with the following:

Blocks shall be subject to such tests as are described in SANS 1058:2012 and/or in the latest (on the date of tender closing) “*Concrete Block Paving Specification and Installation”* published by the Concrete Manufacturing Association. The frequency of the tests will be 10 samples per each day of delivery or 10 samples every 500m². Samples must be taken from the roadways and will be identified by the Engineer and will be tested by an independent and SANS accredited lab. The onus is placed on the Contractor to ensure that sufficient control testing is done and is deemed included in the rate tendered.

MJ 8 **MEASUREMENT AND PAYMENT**

MJ 8.2 **SCHEDULED ITEMS**

PS MJ 8.2.2 **Construction of Paving Complete ..... Unit: m^2**

Add the following to MJ 8.2.2:

The rate shall include PS A 7.1.1, PS A 7.1.2, PS A 7.2, PS A 7.4, PS M 8.3, PS M 7.3, PS MJ 3.1.2, PS MJ 3.1.2, PS MJ 5.7, PS MJ 6.2, PS MJ 7.1.1, PS MJ 7.4.2, the units to be used in construction must have spacer nibs and all other relevant amendments in the project specifications.

SANS 1200 MK: KERBING AND CHANNELLING

MK 3 **MATERIALS**

MK 3.2 **PRECAST KERBING AND CHANNELLING**

PS MK 3.2.3 **Strength**

Substitute MK 3.2.3 with the following:

Precast kerbs, edging and channels shall be of grade 20 Mpa/19 mm concrete.

PS MK 3.9 **BEDDING MATERIAL**

Substitute MK 3.9 with the following:

The material, on which concrete kerbs, channels and edging are bedded, shall be in accordance with the dimensions shown on the drawings and shall consist of a 1:3:6 concrete mix with a 6,7mm single size coarse aggregate.

MK 5 **CONSTRUCTION**

PS MK 5.1 **EXCAVATION AND BEDDING**

Substitute “90 %” in MK 5.1 with “93 % (100 % for sand)”.

PS MK 5.2 **PRECAST CONCRETE KERBING AND CHANNELLING**

Substitute the first sentence of MK 5.2 with the following:

Precast concrete kerbing and channelling shall be laid and bedded on concrete bedding complying with the requirements of PS MK 3.9 and to the dimensions shown on the drawings.

PS MK 5.11 **TRANSITION SECTIONS AND INLET AND OUTLET STRUCTURES**

Substitute the first sentence of the second paragraph of MK 5.11 with the following:

Inlet and outlet structures shall be in accordance with the details shown on the drawings.

MK 8 **MEASUREMENT AND PAYMENT**

PS MK 8.1 **BASIC PRINCIPLES**

Substitute the second sentence of MK 8.1.1 with the following:

Deductions will be made for catchpits, etc.

Add the following to MK 8.1.1:

Payment shall include the provision of expansion joints as specified.

MK 8.2 **SCHEDULED ITEMS**

PS MK 8.2.1 **Concrete kerbing..... Unit: m**

The rate shall include provision for expansion joints every 10m interval, neatly corked with polystyrene and sealed off to the approval of the engineer.

Rate will be include PS MK 3.2.3, PS MK 3.9, PS MK 5.2 and all other relevant amendments in the project specifications.

PS MK 8.2.2 **Concrete kerbing and channelling combined..... Unit: m**

The rate shall include provision for expansion joints every 10m interval, neatly corked with polystyrene and sealed off to the approval of the engineer.

Rate will be include PS MK 3.2.3, PS MK 3.9, PS MK 5.2 and all other relevant amendments in the project specifications.

PS MK 8.2.15 **Street Name and Transition Kerbs ..... Unit: No**

The provisions of MK 8.2.1(b) shall apply mutatis mutandis.

Rate will be based on all relevant amendments in the project specifications.

SANS 1200 MM : ANCILLARY ROADWORKS

MM 3 **MATERIALS**

MM 3.2 **ROAD SIGNS**

PS MM 3.2.1 **General**

Add the following to MM 3.2.1:

All road signs and road markings shall be in accordance with the SA Road Traffic Signs Manual and as shown on the drawings.

No special breakaway devices are required.

PS MM 3.2.2 **Structural Steel**

Substitute the second paragraph of MM 3.2.2 with the following:

All structural steel, including steel tubes, shall have a hot-dip (galvanized) zinc coating that complies with the requirements of SABS 763 for coatings of type A1 or B1 articles, as applicable.

MM 5 **CONSTRUCTION**

MM 5.2 **ROAD SIGNS**

PS MM 5.2.1.1 **Supports**

All the supports for signboards shall be galvanised supports. Confirm with the engineer and the local authorities before any materials is purchased and delivered to site

PS MM 5.2.1.6 **Galvanizing**

Substitute the second paragraph of MM 5.2.1.6 with the following:

Galvanized mild steel supports for road signs shall be painted in accordance with PS MM 5.2.2.4.

MM 5.2.2 **Painting**

PS MM 5.2.2.4 **Painting of structural steelwork**

The provisions of MM 5.2.2.4 shall apply mutatis mutandis to the painting of galvanized surfaces, except for the following:

a) Surface preparation

Galvanized surfaces shall be thoroughly scrubbed down using an approved galvanized iron cleaning agent to remove all traces of the resin protective coating.

The surface shall be washed down and scrubbed to remove all traces of grease, oil, dirt, etc.;

b) Priming

Two coats of calcium plumbate primer shall be applied to a dry film thickness of at least 25 microns. The undercoat shall follow within one week after the priming.

c) Finishing coat

The colour of the finishing coat shall be dark grey, as specified in MM 3.2.8.2.

MM 8 **MEASUREMENTS AND PAYMENT**

PS MM 8.3.8 **Sign faces of 1.4mm thick chromadek steel plate including pedestal ..... Unit.: No**

Add the following to MM 8.3.8:

Rate will be based on all relevant amendments in the project specifications.

1. ELECTRICAL PARTICULAR SPECIFICATION

1.1. GENERAL

The Project must not be read in isolation since cross reference is given to the drawings - General Technical / Quality Specification for the Electrical Work.

This part of the specification shall have preference to any other part of the specification.

The Site(s)

The sites are at the following locations within the Langeberg Municipality region within the Western Cape:

- Montagu trading stalls
- Bonnievale trading stalls

Contractor's site camp

Areas will be allocated to the successful Contractor, where he may establish his site camp.

Services to Contractor's Site

The Contractor shall make own arrangements for services.

The work covered by this contract comprises the complete electrical installation in working order, as shown on the drawings and according to this specification. It includes the supply and installation of all materials and equipment according to the Bills of Quantities, Section 2.2, for the Langeberg Municipality Trading Stalls Project

The works consists of:

- Supply, installation, testing and commissioning of the Low Voltage Distribution Systems as indicated on the drawings.
- Supply, installation, testing and commissioning of the Main- and Sub-Distribution Boards.
- Supply, installation, testing and commissioning of the complete Building Installation, as indicated on the relevant drawings.
- Supply, installation, testing and commissioning of the site lighting.

1.2. SITE

The sites are at the following locations within the Langeberg Municipality region within the Western Cape:

- Montagu trading stalls on North-Eastern corner of Piet Retief St. and Mark St. Crossing (33°47'6.36"S, 20° 7'31.59"E)
- Bonnievale trading stalls on Bonnievale Main Road (33°56'22.30"S, 20° 6'5.94"E)

Tenderers must, before submitting their tenders, acquaint themselves with the local conditions, accessibility of the sites, soil conditions, availability of labour and labour conditions, transport, offloading store and custody conditions for materials and equipment necessary for the completion of the total contract.

1.3. INFORMATION

The tenderer's attention is drawn to the fact that if the schedules of this document are not complete, his tender cannot be adjudicated and may be disqualified.

1.4. SPECIFICATION AND DRAWINGS

General

The specification and drawings generally show the character and extent of the proposed work and shall not be held as showing every minute detail of the work to be executed.

Tenderers must ensure that their copy of the specification is complete and that all drawings as listed have been received.

Any discrepancy must immediately be brought to the attention of the Consulting Engineer.

Contract Drawings

The layout and extent of the electrical installation are shown on the drawings that form part of this document.

As-built drawings

The Electrical Contractor shall at the completion of the contract supply a complete set of as-built drawings.

1.5. SUPERVISION

Work must under all circumstances be supervised by a qualified and experienced representative of the Electrical Contractor who must be registered as an accredited person.

The representative must be authorized by the Electrical Contractor and must be able to receive instructions on behalf of the Electrical Contractor.

1.6. MATERIALS AND VARIATIONS

Electrical Equipment

All fittings, material and equipment and component parts thereof are to be in accordance with the Technical/Quality Specification and must have the approval of the Consulting Engineer.

In addition, all equipment shall be designed, manufactured, and tested in accordance with the relevant South African Bureau of Standards Specification or otherwise the relevant British Standard Specification.

Integration With Existing Infrastructures

Existing infrastructure will be utilised as depicted in the drawings to realise new developments.

New electrical kiosks at the Bonnievale site is to receive electrical supply from existing kiosks.

The new distribution board at the Montagu site is to receive electrical supply from the nearest overhead line pole.

New post top luminaries will replace existing post top luminaries and will be mounted on exiting posts.

Variations of Work

The Consulting Engineer reserves the right to decrease the amount of work to be done under this contract by 50% or increase the amount of work by 50% without any adjustment to the tendered rates.

The percentage increase or decrease will be determined by calculating the difference between the final contract value and the tender price.

He also reserves the right to supply certain materials and or equipment.

Equipment Voltages

All material and equipment must be suitable for the supply voltage (231V/400V). The necessary precautions shall be taken against corrosion, i.e., exposed metal shall be anti-rust treated to approval and all metalwork to be galvanised or painted.

1.7. STANDARDS

All Electrical Specifications/Requirements must comply to the SANS relevant standards.

STANDARDS

Relevant Acts, Regulations and Standards

All work and materials shall comply with the terms and directions of the latest amendment or addition of the following:

a) Occupational Health and Safety Act, 1993 (Act No 85 of 1993), and Construction Regulations 2014 of the Republic of South Africa.

b) Post Office Act No 44 of 1958 and the requirements of the Department of Posts and Telecommunications.

c) Electricity Act, No 41 of 1987 of the Republic of South Africa.

1.8. LUMINAIRES

New post top luminaries will replace existing post top luminaries and will be mounted on existing posts.

- See Bill of Quantities for further details regarding luminaries.

2. GENERAL PROJECT SPECIFICATION

2.1. GENERAL

This general specification defines the standards of materials and equipment, installation work and ancillary work to be employed in the electrical installation contract or sub-contract. The detailed project specification, Section C3.2, defines the extent of work required and shall have preference to any other section of this specification.

2.2. STANDARD SPECIFICATIONS

All materials and apparatus shall conform to the relevant SANS specifications or British Standard Specifications (if such exist) and interchange ability of similar apparatus is required.

All installation work shall comply with the Code of Practice for the Wiring of Premises, SANS 10142, as amended.

2.3. CONTRACT MATERIALS

All contract materials and equipment shall be new and the best of their kind. They shall be protected from damage before, during and after installation. Any damaged, flawed or defaced materials shall be rejected and replaced.

Where makers or catalogue numbers are specified without alternative, no alternative is acceptable: where alternatives are listed; only the named alternatives are acceptable. The phrase "similar and equal to ..." requires that the equipment offered must be closely similar in physical appearance and at least equal in characteristics and performance to the equipment specified: the offer of equipment inferior in either respect will serve to disqualify a tender. Divergences from specified equipment due to non-availability or the like shall be noted by tenderers in the Schedule of Proposed deviations.

2.4 WORKMANSHIP

All workmanship shall be of the best and shall follow the best modern practice with a good "finish" on all visible parts of the installation. All equipment shall be levelled, aligned and plumbed. All work shall be done by, or under, the direct supervision of a skilled, qualified artisan. Any sub-standard workmanship condemned by the Consulting Engineer shall be dismantled and replaced.

2.5. DELIVERY AND COMPLETION

All contract materials and equipment shall be ordered timeously and delivered to site at dates suited to the agreed construction programme.

The successful tenderer for the installation will be required to commence work immediately following notification of tender acceptance and shall thereafter always maintain the progress required by the agreed completion programme.

2.6. FIXINGS AND SUPPORTS

Fixings to concrete and brickwork shall be by means of bolts grouted into the structure or by means of expanding bolts. The necessary holes shall be made by means of carbide-tipped "masonry" drills: percussion drilling is unacceptable. Fixings to brickwork shall be into solid brick and not into joints. Plugs or inserts of wood are not acceptable.

Fixings to steelwork shall be by means of bolts and nuts through steelwork or by bolts in tapped holes in the steel. "Caddy" proprietary fixings are acceptable if specifically suited to the duty involved.

Fixing into hollow tiles and the like shall be by means of "Butterfly" or "Toggle" bolts; the holes shall be formed by means of "masonry" drills.

Power-driven "shot" bolts are not acceptable.

2.7. CHASING AND CUTTING

Electrical contractor is responsible for the conduits, etc., of a flush installation. Main contractor to restore walls when chase work was done. If this is not possible all chasing and cutting shall be done under this contract.

All chasing and cutting shall be done with properly sharpened tools, with the minimum possible damage to the building: Power-driven cutting tools shall be used wherever possible. No cutting or chasing shall be done without the express permission of the Architect or the Structural Engineer in charge of the project.

The Principal Contractor will make good all plaster and brickwork damaged during normal chasing and cutting. However, any additional plaster work or making good which must be carried out due to the Electrical Contractor's inefficient or late installation of conduit, switch boxes, plug boxes or other equipment, will be carried out at the Electrical Contractor's expense.

2.8. LEVELLING AND PLUMBING

All equipment shall be carefully levelled and plumbed, checked with a spirit level. Should any equipment be unsatisfactorily installed in this respect it shall be dismantled and reinstalled. The costs of making good to damaged structures, plaster and paintwork shall be deducted from the moneys due to the successful tenderer. It must be noted that boxes for imported accessories must be levelled and plumbed when installed, since the inserts cannot be levelled independently of the boxes.

2.9. DEFINITION

In this Part, the term "Contractor" means the person, firm or company whose tender has been accepted for the work specified in the document of which it forms a part.

2.10. ELECTRICAL SUPPLY AND PHASE ROTATION

The electrical power supply details relative to fault levels, voltage and phase rotation are given elsewhere in this Specification.

The phase rotation specified shall be maintained on all overhead lines, cables, transformers, switchgear and distribution equipment. Where existing connections are to be reconnected to a new system, the phase rotation is to be checked before disconnection and the reconnection made to maintain the same phase rotation.

2.11. SWITCHING OF POWER SUPPLIES

Any switching of existing power supplies shall be pre-arranged with the appropriate Authority. All possible preparation shall be made in advance, to minimize the time required for re-energizing the system. All such switching shall be carried out by the "responsible person" unless such authority is given to the Contractor by that person, in writing.

2.12. EARTHING AND BONDING

Resistance Values

While every effort should be made to obtain an earth resistance value of 1,0 ohm or less, the maximum values of earth electrode resistance acceptable, unless stated to the contrary elsewhere in this specification, are 10 ohms at any minisub or transformer, 15 ohms at any indoor or outdoor switchboard or HV gang links and 20 ohms at cradle earthing points, lightning arresters or other pole mounted equipment. In the case of the earthing of LV feeder and overhead line neutrals the combined resistance to earth of all systems shall not exceed 10 ohms.

Transformer neutral earthing shall comply with the sub-Clause "Transformer Earthing" below.

Main Substation Earth System

Where this system is not detailed elsewhere in this Specification, it shall comply with the sub-Clause "Earth Systems" elsewhere herein, two separate systems being installed and linked independently to the earth bar.

The main earth bar shall consist of an adequate length of minimum 50mm x 6,3mm tinned copper bar. It shall be supported by means of cycloaliphatic resin insulators in a suitable position on a wall or plinth and shall be readily accessible for inspection. Conductors connecting equipment to it shall be 70mm² copper terminated in compression type lugs. The size of earth bar and number of earth conductors shall depend upon the prospective short circuit current of the system. All connections shall be suitably labelled.

General Earth Systems

Unless otherwise specified elsewhere in this Specification, the earth systems for distribution transformers, mini subs and ground or pole mounted switchgear, lightning arresters, etc. shall generally comprise two earth electrodes with 1,5m long earth spikes located 6,0m apart, linked with 70mm bare conductor. They are to be located adjacent to pole structures or end of plinths in the case of mini subs and shall be located at least 1,0m there from.

In the case of transformer earthing, if the neutral earth system resistance is not 1,0 ohm or less, two systems as above are to be installed, one for the LV neutral and the other for the tank and associated equipment in which case they are to be kept at least 6,0m apart and at opposite sides of the transformer position.

The earth system is to relate to 70mm² insulated earth conductor to the earth bar or transformer tank earth stud as appropriate.

Immediately after installation and before livening up the equipment the Contractor shall test the earth resistance of the earth system, using the respective earth bar or termination as the reference point. If the required value is not obtained, each earth spike, if installed in a sidewalk, shall be increased in length by driving a further length of 1,5m but were in open ground, two additional spikes are to be installed. These latter spikes are to be perpendicular to the original two, in line with the spike at the point of connection of the insulated earth conductor and each 6,0m there from. After installing the additional spikes, the earth resistance shall again be determined. The Contractor shall submit a report in duplicate confirming the values measured, including the first set if appropriate, to the Engineer.

Where the number of spikes called for does not achieve the required values, the Engineer is to be advised and will give further instructions for the improvement of the values obtained. Where more spikes are necessary to obtain the required value, these shall not be installed within 6,0m of any other spike.

The common leg of the secondary of CT's, other than the secondary of summation transformers, shall be effectively earthed to the main earth system.

Transformer Earthing

Transformers, pole mounted, ground mounted or in minisubs, shall be provided with earth systems as described in the sub-Clause "Earth Systems" above. If the earth system resistance is 1,0 ohm the minisub neutral and earth bars, or the transformer neutral and the tank earth stud, shall be bonded with an insulated earth conductor.

Where the earth system resistance is more than 1,0 ohms, a second separate earth system shall be installed in accordance with the foregoing sub-Clause and the neutral and tank connections shall be taken to each of the independent earth systems with separate insulated earth conductors. In this case a neutral surge arrester, complying with the sub-Clause "Lightning Arresters" elsewhere in this Part, is to be installed and connected between the transformer neutral and the tank earth point. At minisubs, where the arrester is NOT to be installed within it, the Engineer is to be consulted. For tendering purposes, it shall be assumed that the second earth system and neutral Arrester will not be required unless called for elsewhere in this Specification.

In the case of electrical reticulation contracts the earthing shall also comply with the "AMEU/SAIEE Code of Practice for the use of CNE on Low Voltage Distribution Systems".

Reticulation Feeder Neutral Earthing

At kiosks and fused feeder pillars a 30m length of bare earth conductor of half the size of the phase conductors but not greater than 70mm² shall be laid from each kiosk earth bar towards the source of supply. The neutral bar shall be connected to the earth bar with green insulated conductor of the equivalent size.

At various points not exceeding 150m apart along the length of overhead lines and at tee connections and the ends thereof as indicated on the drawings, the neutral conductor shall be bonded to an earthing point which shall comprise a 1,5m long earth spike. The insulated earth conductor shall be carried in a galvanised sleeve from 500mm below ground to 3,0m above. The connection of the earth conductor to the line conductor shall be made with a connector suitable for the line conductor material.

Earthing of Pole-mounted Equipment

Pole mounted transformers shall be provided with an earth system as described above. The insulated earth connections shall be taken up the pole in a section of galvanised conduit extending at least 500mm below ground level and to a height of 3,0m above.

At cradle earthing points, reclosers, or sets of lightning arresters, one 1,5m long earth spike shall be provided, the insulated earth connection being enclosed in galvanised conduit as described above.

Operator's Platform

A 1,0m x 1,0m HDG operator's platform complying with the detail shown on the drawing annexed to this Specification is to be installed at each gang-link isolator, unless otherwise indicated in this Specification. The platform is to be erected 150mm above ground level, the legs being cast into mass concrete generally complying with the Clause "Plinths" elsewhere in this Part.

The platform is to be connected "by means of two 40mm" bare earth conductors to an earth system as described above.

A separate 50mm² bare earth conductor is to be used to bond the isolator steelwork to the platform. The steelwork ABOVE the insulated section of the operating rod is not to be bonded.

Where a steel plate in lieu of a platform is specified elsewhere in this Specification, this shall comprise a hot dip galvanised steel plate of 1,0m x 1,0m x 6,0mm steel located at the operating handle position. This plate is to be bonded to the earth system and to the isolator steelwork using two 50mm² earth conductors connected to separate points.

Earth Spikes

Earth spikes shall comprise 16mm sectional steel cord rods with a minimum of 0,25mm pure copper coating molecularly bonded thereto, complying with SANS 1063, and of "Cad weld" or equivalent manufacture. The top of earth spikes and the interconnecting conductors are to be 1,0m below finished ground level.

Under no circumstances are earth spikes to be located closer than 1,0m to any structure or plinth nor are they to be installed in pole holes.

The connections to earth spikes shall be by means of at least two phosphor bronze mechanical clamps of an approved type for this duty, or a "Cad weld" joint. The clamps shall not be attached to the rod but must be installed so that the bolt face is in contact with the rod. Brazing will not be accepted. The connection must be wrapped with two layers of "Denzo" tape."

A cable marker as described elsewhere in this Part shall be installed above each spike and shall be labelled "Earth Spike".

Earth Continuity Conductors

Earth conductors shall be hard drawn bare copper wire complying with SANS 182 or bi-colour green/yellow PVC covered, the PVC being UV stabilised complying with SANS 1411 Part 2, as elsewhere specified herein. The conductor sizes shall be such that they can carry the short circuit current likely to be imposed upon them but generally shall be half the area of the phase conductors with a maximum size of 70mm² or in accordance with the appropriate Regulations unless specific sizes are given elsewhere in this Specification. 50mm² conductors shall be 7/2,65 HD.

Bare earth continuity conductors shall be run with all cables constituting a low voltage distribution system except in the case of township reticulation where an earth system as described in the sub-Clause "Neutral Earthing" above shall be installed at kiosks, etc.

A single conductor may be used where two or more cables run together, provided that the conductor cross-sectional area is based on the largest size cable in the run, and that branch earth wires are solidly connected to the main earth conductor using only "Cad weld" connections. Earth continuity conductors shall be connected to main earth bars.

Un-insulated earth conductors shall not be less than 500mm below ground level. Above this level all earth conductors shall be green insulated carried in a PVC conduit sleeve except where galvanised conduit is specified elsewhere herein.

A terminal lug shall be crimped onto the end of the main earth conductor for bolting to the main earth bar of a substation or minisub or other outdoor equipment. Two mechanical clamps shall be used for connection onto cradles or other equipment, as appropriate.

Earth connections shall be so made that in the event of any connections being removed the earth connection to the rest of the equipment will not be affected.

Bonding Generally

All metallic parts of the installation are to be bonded to the earth system as required by the appropriate Regulations.

All iron roofs, gutters, down pipes water and waste pipes, as well as all steel structures, are to be bonded to earth. The maximum resistance of any such point to the earthed end of the earthing lead shall not exceed 0,2 ohm.

Bonding of Equipment

Where equipment is bolted together, as in the case of an HV or LV switchgear panel, there is to be a 32mm x 4mm copper earth strap extending the whole length of the equipment. All earth bars shall be run in one continuous length as far as possible and shall not be bent or formed in any way that requires hammering or severe distortion. Any joints shall be lapped with at least two bolts with nuts and washers of suitable size. The lapped ends shall be pre-tinned. If multiple straps are used, they shall be bolted and fixed together at not more than 75mm intervals. All connections shall be made using brass or stainless-steel bolts, nuts and washers, together with a star lock washer, on all kiosks, fused feeder panels, mini subs and outdoor equipment. Connections to indoor equipment may be made with cadmium plated steel bolts, nuts, and washers, with a steel spring washer.

All steelwork on a pole is to be bonded using 25mm² solid copper conductor. This requirement applies to cross-arms, all insulator supports and any other hardware. Where equipment is also mounted on the pole, the bonded metal is to be earthed to an earth spike as elsewhere specified herein, using a 50mm² bare copper conductor.

Bonding of Steel Lighting Poles

Steel streetlight and site lighting poles shall be bonded with a continuous earth continuity conductor of half the area of the phase conductor, but a minimum size of 4mm², lay with the cables. This conductor shall be connected to the pole earth stud. At the last pole in a run the neutral conductor shall be bonded to earth.

Supplementary Requirements for Building Services

The main earth system is to comply with the Supply Authority's requirements. Earth spikes, mats and conductors shall be installed as early as possible in the building program, and the onus is on the Contractor to arrange this with the Building Contractors to avoid later disturbance of completed construction. Before proceeding, however, the attention of the Engineer is to be drawn to the exact proposals and approval obtained.

Bare earth conductors complying with the requirements of the Wiring Code shall, unless

otherwise specified elsewhere in this Specification, be drawn into conduits together with the current carrying conductors, between all main, sub-main and sub-distribution boards. Ends of earth conductors shall be terminated in lugs securely bolted to switchboard frames or trays.

Unless otherwise specified elsewhere in this Specification, bare copper earth wires complying with the Wiring Code shall be run with all socket outlets, water heater, stove and other power outlets. Bare earth wires shall also be run in all ceiling and skirting trunking to bond all light fittings, socket outlets and the trucking lengths themselves. Such conductors shall also be run in all non-metallic conduits. In aluminium trucking, the earth wire shall be insulated with green PVC.

Earth conductors run outside flexible tubing, where this has been permitted, shall be run neatly along the tubing, and shall be held in place by approved cable ties. Such conductors shall not be wound around the tubing.

2.13. DISTRIBUTION KIOSKS AND FEEDER PILLARS

Construction

The enclosure shall be of the type specified elsewhere and shall be of a size suitable to accommodate all the equipment specified hereunder and elsewhere in this Specification. All kiosks used on a particular installation shall, unless otherwise specified, be of the same size.

The unit shall be well ventilated, and its construction and installation shall prevent the ingress of rain and sand and it shall be rodent proof. Should it be found over time that this requirement has not been met, the final retention monies will not be released until the remedial work has proved to be effective. Cognisance shall be taken of the site conditions and the kiosks, and all equipment provided therein shall be selected to prevent deterioration under these conditions.

All units shall be provided with a robust and approved front door which shall be labelled as specified in the Clause "Labels and Notices" elsewhere herein. The door shall be provided with a restraining device of non-ferrous components to prevent whipping when opened, approved 3 points latching for larger and 2 points for 6 way and smaller units, and padlocking facilities. The external components shall be heavy-dutydie cast aluminium.

All hinges shall be stainless steel. All locking rods, guides, striker plates and similar accessories shall be hot dip galvanized mild steel.Fibreglass and cast-iron kiosks shall consist of a root and a top enclosure, which shall be easily detachable from

the root. The root shall be of hollow construction in the form of a truncated box open at the top and at the bottom. The root shall be of fibreglass or cast-iron construction, as appropriate. The root shall be buried in the ground with the top 100/150mm above top of kerb or, where no kerbs are installed, 250/300mm above road level. The ground underneath shall be properly compacted, and the root shall rest on two pre-cast concrete slabs (conventional cable protective slabs will suffice) placed under the ends of the roots.

Where kiosks are to be installed in sandy soils a deeper root with wide flange shall be provided when called for elsewhere in this Specification.

Contents and Equipment

The equipment in the kiosks shall be mounted on a 9,5mm "Masonite Weatherboard" panel. This panel is to be supported on a galvanized steel frame, which is to be fixed to the kiosk main frame. No equipment is to be attached to the removable kiosk enclosure.

Unless stated to the contrary elsewhere in this Specification, the panel shall have sufficient space for nine 80A SP Curve 1 (orange handle) 5kA MCB's and nine single-phase kilowatt-hour meters mounted in three rows of three units. The actual equipment to be provided in the kiosk is detailed elsewhere in this Specification.

Domestic consumer kiosks shall be pre-wired for all specified equipment whether supplied with the kiosk or not. All bare wire ends for future equipment on the front of the panel shall be heat shrink capped. Any other equipment mounted on the front of the panel shall be suitably shrouded.

Four plated HD copper busbars minimum 25mm x 6mm mounted vertically on colour coded stand-off insulators shall be provided on the back face of the panel. They shall be provided with 12mm brass bolts, nuts and washers for the termination of the feeder cables and with 8mm brass bolts, nuts and washers for the total number of service connections for which the kiosk is designed.

The busbars shall extend downward below the bottom insulator a sufficient distance to enable the incoming and outgoing main feeder cables to be connected vertically above one another.

Where MCBs are required for feeder cable protection they shall comply with the Clause "LV Circuit Breakers" elsewhere in this Part.

A 2mm thick galvanized metal gland plate shall be bolted to the abovementioned frame above the root. The gland plate shall extend the full length and width of the kiosk. The section of the gland plate behind the panel shall be for the main kiosk feeder cables whilst the remaining portion of the gland plate shall be for the outgoing service cables. The gland plate shall be pre-drilled for the feeder cables specified and for the total number of service cables for which the kiosk is designed, regardless of the number utilised at this stage.

The gland plate shall be provided with two 75mm long brass or stainless-steel bolts with the stud facing upwards, one of 12mm dia. for the feeder cable earth conductors and one of 8mm dia. for the service connection earth conductors. The bolts shall be held by nuts and washers to the gland plate and each lug shall be individually bolted to the stud. The neutral bar shall be connected to the 12mm stud with 70mm² PVC insulated earth conductor.

Fibre Glass Kiosks

The enclosure shall be constructed of fibre glass reinforced polyester or epoxy resin mouldings to SANS 141, similar in form to that which can be detached from its separate root, as produced by Golnix.

Steel Kiosks

The enclosure shall either be constructed of 3CR12 low-grade stainless steel as manufactured by Southern Cross Steel or of hot dip galvanized steel.

Unless otherwise specified, the following minimum plate thickness shall be used: -

3CR12 - 2,0mm HDG Steel - 3,0mm

The actual type of steel to be used in the construction of the kiosks is detailed elsewhere in this Specification.

The manufacturer shall, upon request, provide mill certificates for the stainless steel used in the manufacture of 3CR12 kiosks. All welding of 3CR12 kiosks shall be done using MIG welding. All welded areas shall be pickled and passivated after welding. Hot dip galvanising shall be in accordance with the Clause "Hot Dip Galvanising" elsewhere in this Part.

Steel kiosks shall be provided with a 50 x 50 x 6mm hot dip galvanized channel under base for bolting down onto a concrete plinth as specified in the Clause "Plinths" elsewhere in this Part. The top of the plinth shall be located as for roots under the sub-clause "Construction" above.

Kiosks shall be painted to a colour, as specified elsewhere, as follows: -

3CR12 - Heat fused electrostatically applied epoxy powder coating to a thickness of 70 microns.

HDG - One undercoat and two coats of suitable outdoor type enamel paint applied after approved passivating and priming.

Cast Iron Kiosks

The enclosure shall be of cast iron construction similar in form to type BBO as manufactured by GEC Alsthom. The enclosure shall be provided with 2 points latching and padlocking facilities.

All hinges, door operating mechanisms and all other accessories shall be brass or chrome on brass.

Fused Feeder Pillars

Fused feeder pillars for outdoor use shall be housed in a kiosk of similar construction to that for distribution kiosks described above. The kiosk shall be large enough to accommodate all the equipment described hereunder and shall have a min. 2,0mm thick galvanized steel gland plate running the full width of the kiosk, and a 25mm x 6,3mm HD copper earth bar.

All equipment shall be mounted on a galvanized steel frame, which shall be welded to the gland plate such that the kiosk enclosure may be removed without disturbing any of the enclosed equipment. Where required for the mounting of instruments, etc., a solid pine cored blackboard, bolted to the steel frame, shall be used.

The feeder pillar shall contain the number of units called for elsewhere in this Specification. Each unit shall comprise three HRC fuse bases with insulated fuse bridges and an uninsulated neutral link, in their formation. The units shall be of a standard factory-made type similar or equal to those produced by GEC Alsthom.

The units shall be mounted side-by-side and linked with 500A rated copper busbars across each horizontal line of fuses and neutral links. A 500A rated bolted isolating link shall connect the end of each of the phase busbars to an insulator to which the main incoming cable tails are to be connected. All connections are to be made using brass bolts, nuts and washers.

Three metering current transformers of the ratio elsewhere specified shall be provided, one on each phase tail of the incoming cable. Three maximum demand-reading ammeters and a voltmeter and selector switch shall be mounted adjacent to or above the fuse units. The instruments shall be as specified elsewhere in this Part.

The fuse bases and bridges shall be suitable for HRC fuses from 30A up to 300A complying fully with SANS 173. One complete set of fuses of the sizes elsewhere specified shall be fitted and two sets of spare fuses of each size shall be provided, mounted in stainless steel clips attached to the back of the door. Fuses shall be HRC type complying fully with SANS 172. The breaking capacity shall be AC2O and the fusing factor Class Q1.

Where a fused feeder pillar is required for use inside a substation building, it shall be generally as described above, except that there shall be no enclosure and the equipment shall be mounted on a frame, which shall be fixed to the floor and the wall of the substation. All live parts shall be shrouded to prevent accidental contact.

2.14. MAIN DISTRIBUTION SWITCHBOARDS

These are defined as boards controlling the main supplies, either incoming and/or outgoing, by air brake or moulded case circuit breakers, or the outgoing supplies with fused-switch units. Where elsewhere specified, - isolators may control the incoming supplies. Such boards may be termed main or sub-main distribution boards. The boards are to comply with BS 5486, about testing.

Where specialist manufacture of boards is called for elsewhere in this Specification, under no circumstances will such boards be accepted unless supplied by a manufacturer who uses components, the majority of which have been designed and tested by his own firm and carry approved Testing Authority Certificates relating to the performance of such components. Relief from this condition will only be given by the Engineer in extreme circumstances, and must be in writing, such relief must be obtained before submission of a tender.

The switchboards shall be suitable for the supply voltage, frequency and phase arrangement as detailed elsewhere in this Specification and shall be of the flush fronted cubicle type, floor mounted and arranged for back access, built up of standard factory-made units to form an easily extensible board. The cubicles shall comprise a welded or bolted framework of steel sections with minimum 1,6mm thick steel panel cladding. The panels shall be either hinged or removable for ease of access. Securing of panels shall be by means of square key latches with bottom locating pins in the case of fixed panels. The edges of all doors and removable panels shall be so constructed that they can readily accept a rubber gasket, should dust and damp proofing be required.

All equipment shall be mounted behind removable fascia plates, only switch toggles, etc., protruding. Doors over the toggles shall only be provided when asked for elsewhere in this Specification.

Air brake or moulded case circuit breakers shall comply with the Clause "LV Circuit Breakers" elsewhere in this Part. All incoming circuit breakers of 800A or larger shall be withdraw able pattern. All incoming and outgoing switches shall be provided with means for padlocking in the "OFF" position. Three maximum demand reading ammeters and a voltmeter and selector switch, as specified in the Clause "Instruments, Meters and Protection Relays" elsewhere in this Part, are to be provided for each incoming supply circuit breaker.

No board shall exceed 2,4m in height nor shall any operating handle, button or switch be mounted higher than 1,8m. No part of any equipment shall be mounted closer than 300mm to the floor.

The busbars shall be mounted at the top of the board, enclosed by the removable full height panels at the back, removable top panels and removable front panels covering the busbar section only. Droppers from the enclosed busbar chamber shall pass through insulating barriers located as necessary. Where busbars are exposed in cubicles requiring access for operation or maintenance, they shall be shrouded with a suitable insulating material.

The busbars shall be of high conductivity copper bar of adequate section for the current and short circuit rating. The current density shall not be more than 185A per square centimetre at the current rating specified. Bars shall have a minimum spacing of 32mm between bars and 25mm to earth. Where multiple bars are used, the air gap between bars shall be the same as the bar thickness. Busbars shall be securely supported by insulators of a size and so spaced that they will prevent busbar distortion under maximum short circuit conditions. Equipment shall be arranged to connect to the busbars with solid copper connections of adequate section to resist short circuit stresses imposed by faults up to the maximum breaking capacity of the associated switchgear. Joints between busbars and the equipment shall be tinned and connected using phosphor bronze or stainless-steel nuts and washers above a fault level of 20kA or cadmium plated steel below this rating.

Flat washers shall be provided on both sides of the connection and spring lock-washers beneath the nuts. Bus-bars shall be pre-drilled and tinned at both ends for future extensions and removable plates shall be fitted at either end of the busbar chamber to enable such extensions to be made. Suitably drilled and tinned fishplates for later coupling of the bars shall be provided.

Air-break fused-switch units shall be provided with best quality dust and damp-proof ironclad cases, arranged for flush mounting. The switch shall be of the double break type, with the speed of operating being independent of the operator. In the case of tiered construction, insulating barriers are to be installed between all fused-switch units. The doors of the fused-switch units shall be hinged and interlocked with the mechanism so that the case cannot be opened with the switch closed or the switch closed with the case open. With the case open, no live parts shall be exposed. Switches shall have definite "ON" and "OFF" positions, which shall be clearly marked.

All switches shall be provided with means for padlocking in the "OFF" position. The number of poles shall be as specified on the drawings. The current rating shall not be less than the current rating of the fuses as specified on the drawings, except that 160A HRC fuses may be fitted into 150A fused-switch units.

Fuse holders shall be of the shrouded type and shall comply with SANS 173.

Fuses shall be of the HRC type and shall comply fully with SANS 172. The breaking capacity shall be AC20 and the fusing factor Class Q1. The current ratings shall be as elsewhere specified. Six (6) spare HRC fuses for each switch used in the switchboard shall be supplied and the value included in the tender price, except that a maximum of 6 spare fuses of any one size are required per switchboard. All such spares shall be mounted in stainless steel clips in a special compartment attached to the board, this being marked "Spare fuses". The metal clad covers of the fused-switches shall be provided with labels indicating their purposes. Where retractable type units are used, both the carriage and the panel are to be labelled.

Cabling arrangements shall be such that outgoing feeder ends can be made off with the board always live. This shall be provided for by means of a 2mm galvanized gland plate near the outgoing terminals of the switchgear. All gland plates shall be bonded to the earth bar by means of a 70mm² bare copper conductor fixed with min. 10mm cadmium plated bolts and nuts.

The underside of the board shall be rendered vermin proof by means of similar plates to the gland plates above.

The outgoing connections from tiered equipment are to be brought out to separate terminals behind each switch for ease of making the outgoing connections.

The whole switchboard is to be suitable to control the circuits shown on the drawings, but the actual arrangement of the board is left to the Tenderer so that the most cost-effective arrangement for the type offered will be obtained. Space shall be left to allow access to the rear of the board. The board must be designed to fit into the space available and be of suitable dimensions to enter through the doorways provided. The board must be suitably located to permit future extension at either end or must be bolted to the floor.

Provision must be made for the future addition of further outgoing switches to the switchboards. The board must be so designed as to allow space for the addition of these units. Unless otherwise specified elsewhere in this Specification the number to be allowed for shall be the nearest whole number above 20% of the number of each type of switch unit supplied on each board. The current rating to be allowed for each future unit shall be the same as that of the largest outgoing switch of which more than one is supplied on each board.

A continuous earth bar sized to match the specified fault rating of the board but of not less than 25mm x 6,3mm cross-section shall be run along the entire length of the board and shall be provided with a minimum 10mm cadmium plated bolt for connection of the earth conductor.

All metal surfaces of the boards shall be epoxy powder coated to a thickness of 70 microns to SANS 1274 and of an approved quality and colour. No hammer tone or similar finishes will be acceptable, and the final colour of the board shall be a standard SANS colour. Before painting, all boards shall be bonderized or given some similar rustproof treatment to approval. It is the Contractor's responsibility to ensure that when handed over, the board finish is in first class condition. Under no circumstances will boards be accepted if not finished to a first-class standard at handover.

2.15. MCB MAIN AND SUB-DISTRIBUTION BOARDS AND CONTROL PANELS

In general, such boards shall comply with SANS 1180 where applicable, or alternatively with BS 5486, and, with the requirements of this Clause.

Larger MCB distribution boards and motor control panels shall be floor standing and arranged for front access unless elsewhere stated in this Specification. Such boards shall be bolted in position. No board shall exceed 2,4m in height nor shall any meter scale, operating handle, button, or switch be mounted higher than 1,8m or lower than 600mm from the floor. No part of any equipment shall be mounted closer than 300mm to the floor.

Minor types of main and sub-distribution boards and control panels shall consist of sheet metal trays, suitably built in or secured on the surface in the positions shown on the Engineers drawings.

All structural elements of main and sub-distribution boards and the complete construction of motor control panels shall be of minimum 2,0mm thick material. Non-structural elements shall be of 1,6mm material. Minor bonding trays shall be of 1,2mm

material and all bonding trays shall be galvanized. All boards to be mounted outside or specified, as being weatherproof shall be constructed of 2,0mm 3CR12 sheet, epoxy powder coated to a thickness of 70 microns to SANS 1274.

The boards shall be of the minimum sizes to accommodate all the equipment specified plus future circuit breakers. Where single-phase breakers are used in three phase boards, there must be arranged in three vertical rows, one for the breakers in each phase. Space for the nearest whole number above 20% of each type of circuit breaker installed is to be provided for unless otherwise specified. Unless made specifically to clip in from the front, blanking plates shall be fixed with short cadmium plated bolts and nuts. All openings for future equipment shall be covered with blanking plates fixed on the inside of the opening. Sufficient outgoing terminals shall be provided for the future equipment. Cognisance must be taken of the heat dissipated by equipment and adequate ventilation must be provided.

Copper busbars are to be provided for each phase and are to be mounted on suitable insulators or fixed to the terminals of the miniature circuit breakers and be of sufficient length to accommodate future breakers. Busbar and other connections shall be made using cadmium plated steel (or brass in Coastal areas) bolts, nuts, flat and spring washers.

Copper bars are to be used on MCB type main boards. The main neutral feed to the busbar shall be connected by a lug bolted to the bar, as described above. In sub-distribution boards the neutral busbars shall be solid brass with two per-way pinching screws and sufficient ways for the feed and all the circuits connected, including spare ways to the same number as the spare circuits.

HRC fuses are to comply with SANS 172 and fuse holders, which shall be shrouded, with SANS 173. A spare set of HRC fuses for each switch-fuse unit or set of fuse holders installed shall be supplied and the value included in the tender price, except that a maximum of 6 spare fuses of any one size is required. All spares shall be handed to the Employer's representative at the time of the handover inspection.

The equipment on these boards shall be mounted on chassis behind sheet metal panels with operating handles, toggles and control buttons, etc., only protruding through slots cut in the panels. The isolating device for all motors situated remote from the control panel shall be lockable in the "OFF" position. The panels shall be either hinged or removable for ease of access to the wiring, etc. Securing of panels shall be by means of square key latches with vertical locating pins in the case of fixed panels. Sub-distribution board fascia panels shall have moulded knobs for ease of removal of the panel.

The interior of the boards shall be arranged for easy access to all wiring and components. Transformers for low voltage supplies and all low voltage wiring shall be separated by metal barriers from the medium voltage circuits. Positions of transformers are to be indicated by labels attached to the face of the board.

All equipment on the boards shall be back-connected and no wire or cable shall be visible from the front. PVC insulated wiring shall be used throughout, the current rating being not less than the rating of the circuit breaker or aggregate rating of the bank of circuit breakers which it connects.

Wiring of the boards shall comply generally with the Clause "Control Equipment and Wiring" elsewhere in this Part.

Distribution boards shall be at least 115mm in depth unless otherwise approved. A maximum of two rows of conduit shall enter the horizontal edges of boards and the width of the board must be sufficient to accommodate all conduits entering. Where boards are installed in 115mm walls, they shall be provided with expanded metal fixed to the entire back of the board. The trays of flush boards shall be built in or suitably secured to the brickwork in the specified places and shall be installed in good time to prevent delay to the Principal Contractor. Each shall be mounted with the upper edge at a height of 2,0m above floor level, unless otherwise specified.

Unless otherwise specified elsewhere in this Specification, boards contained in cupboards shall be surface mounted and all conduits shall drop into them neatly, vertically, and evenly spaced, in a single row, if possible. Metal doors shall only be fitted if so specified.

Unless otherwise specified elsewhere in the Specification, surface and flush boards shall be provided with doors. All control panel doors shall be fitted with dust and damp-proof seals. All instruments, meters, pilot lights, etc., and the main isolator must be operable with the doors closed unless otherwise specified. Flush boards in walls shall be provided with a separately attached metal frame and door which is adjustable so that it may be set plumb. This is to be positioned only after preliminary wall finishes adjacent to the board are complete. Doors shall be secured by a neat flush catch. Boards with a width of 600mm or greater shall be fitted with double doors, the left-hand door to be secured with brass barrel bolts, top and bottom, which are readily accessible. Hinges shall be "Barker and Nelson" or "Piranha".

All metal surfaces of the boards shall be epoxy powder coated to a thickness of 70 microns to SANS 1274 and of an approved quality and colour. No hammer tone or similar finishes will be acceptable, and the final colour must be readily matched able. Before painting, all boards shall be bonderized or given some similar rustproof treatment to approval. It is the Contractor's responsibility to ensure that when handed over, the board finish is in first class condition. Under no circumstances will boards be accepted if not finished to a first-class standard at handover.

In the case of MCB Main Boards cabling arrangements shall be such that outgoing feeder ends can be made off with the board always live. This shall be provided for by means of a 2,0mm galvanized gland plate near the outgoing terminals of the switchgear. All gland plates shall be bonded to the earth bar by means of a 70mm² bare copper conductor fixed with min. 10mm cadmium plated bolts and nuts.

The underside of the board shall be rendered vermin proof by means of similar plates to the gland plates above.

Where boards are to be mounted in damp situations or where otherwise specified elsewhere in this specification, black heat anti-condensation heaters are to be fitted. The heaters are to have a separate protective device and are to be so constructed and fitted that they cannot be inadvertently touched. The heater rating is to be such that it will maintain the board at a suitable temperature to prevent the occurrence of condensation while not rising to an excessive temperature.

Boards shall be labelled in accordance with the Clause "Labels and Notices" elsewhere in this Part.

2.16. LV CIRCUIT BREAKERS

General

The supply voltage, normal current, fault capacity and type, as well as any special characteristics required of circuit breakers, shall be as stated elsewhere in this Specification.

All main circuit breakers shall be equipped with adjustable instantaneous magnetic and inverse time delay thermal overload releases on each phase and shall be arranged for flush mounting. They shall be connected to the busbars with solid copper connections of adequate section to resist short circuit stresses that may be imposed by faults up to the maximum rupturing capacity of the breaker.

Where circuit breakers are used to control supply taken directly from the Supply Authority, they shall be of a make approved by that Authority and shall be set to trip within the specified limits laid down by that Authority.

Air Circuit Breakers

Air circuit breakers shall comply with the requirements of BS 4752. Unless elsewhere specified, air circuit breakers of 800A or larger shall be of the rack-out type. Interlocking shall ensure that racking in or out can take place only with the circuit breaker open. The connecting device between the incoming cable and the breaker, and between the circuit breaker and the outgoing bars shall be fitted with shutters, which are automatically closed and locked by the action of racking out.

Moulded Case Circuit Breakers

Moulded case circuit breakers shall comply with SANS 156 with time delay tripping on low overloads and high-speed tripping on short circuit. Except where larger rupturing capacity MCB's are elsewhere specified, these shall be Class 5kA 240V or 415V, as applicable, and where various current and breaking capacities are required, all MCB's are to be of one size throughout the installation. All MCB's are to carry the SANS Mark to ensure that they comply with Compulsory Specification VC 8036.

The Engineer will not accept a mixture of circuit breakers from various Manufacturers to meet the various duties required.

In the case of motor control, all MCB's shall be supplied with "slow" tripping curve (Curve D or curve 1) except that those MCB's controlling motor starters located in the same control panel shall not have over current trip elements, this feature being provided by the adjacent starter overload device, magnetic high current protection only being required.

Where MCB's are required to be connected to cables larger than 70mm², the terminals shall be of the stub busbar or rear connecting stud types. For all other cables, box type terminals shall be provided. Three phases MCB's shall be fitted with suitable phase barriers.

MCB's shall be fitted with purpose made terminal shrouds where no fascia plate is provided.

2.17. SLEEVES

Sleeves for cables shall be either PVC with single socket joints complying with SANS 791 (heavy duty) or fibre cement complying with SANS 1223 in the case of 50mm and 100mm sleeves (in compliance with SANS 0198: Part VIII) or with SANS 819 for larger sleeves, the sizes being as indicated on the drawings. Sleeves shall be nominal 100mm diameter unless otherwise specified. Pitch fibre sleeves shall NOT be used.

The sleeves shall extend at least 1,0m beyond each side of a road crossing and shall be effectively sealed at the ends. Each sleeve shall be provided with a draw-wire. At least one spare sleeve shall be provided at each crossing. All sleeves shall be laid in accordance with SANS 1200 (LC) and at a depth of 900mm unless otherwise indicated. The radius of the bends used in the sleeves shall not be less than six times the diameter of the sleeve, and the sleeve is not less than twice the cable diameter unless otherwise specified.

Sleeves shall be laid on a 100mm compacted layer of selected bedding material or, if this is not available, on a 100mm sand bedding. The cover layer shall be hand compacted completely around the sleeves and to a cover of 150mm above the top of them. The sleeves shall be supported along their entire length by the bedding. A further 100mn layer of selected bedding material shall be added, and this shall be compacted using four to six passes of a vibration pan compactor. Thereafter, the trench shall be back-filled and compacted as specified in the sub-Clause "Compaction" elsewhere in this Part.

Both ends of all sleeved crossings shall be marked by means of cable markers as elsewhere specified, labelled "cable sleeve".

The Contractor shall make all necessary arrangements with the appropriate Authorities for closing sidewalks and/or half the roadway at a time, and he shall comply fully with any Statutory requirement applicable and any requirements the Authorities deem necessary. The surfaces shall be made good to the satisfaction of the authorities and the Engineer, but where tarring or paving is to be laid or re-laid, this shall not be done until the Engineer has given the necessary approval.

Where the HV or main LV cables cross over or pass under other services such as water or drainpipes, they shall be run in sleeves. Where these crossings present a particular hazard to the cable, the Contractor shall draw the attention of the Engineer to any such crossing requiring special attention.

All sleeves for Telkom cables will be 110mm diameter pitch fibre like Santar, supplied by the Regional Engineer, unless otherwise specified.

These sleeves are to be laid under this Contract and must be kept at a minimum of 0,6m horizontally from and 0,3m vertically above any power cable sleeve. They are to be laid at a depth of 800mm and one end is to be provided with a marker labelled "Telkom".

2.18. CABLES

Description

PVC insulated cables for LV shall be to SANS 1507 and shall consist of PVC insulated conductors, PVC bedding, galvanized steel wire armouring and a PVC sheath.

The abbreviation for this type of cable is PVCAS.

Paper insulated cables shall, unless otherwise specified elsewhere in this Specification, be of the screened type suitable for use on an earthed system and complying with SANS 97. They

shall be lead sheathed, bedded with two bituminised paper tapes and one layer of fibrous material and preferably armoured with two layers of steel tape or alternatively with a single layer of galvanized steel wires, both served with bituminised fibrous material. Such cables shall comply with Table 19 of SANS 97 and shall be non-draining. They shall have a sheath of lead alloy 'E' and/or be PVC served only if called for elsewhere in this Specification.

The abbreviation for this type of cable is PILCA

Cross-linked polyethylene cables shall be Type A suitable for use on an earthed system and complying with SANS 1339, being individually screened and armoured, unless otherwise called for elsewhere in this specification.

The abbreviation for this type of cable is XLPE

Service cables may be multicore PVC insulated and wire armoured, and PVC served (PVCAS), concentric neutral or "Airdac" as specified elsewhere in this Specification.

Concentric neutral cables shall be XLPE insulated complying with SANS 1268. "Airdac" cables shall be XLPE insulated with copper conductors, the phase conductor being contained within a radial band of insulated neutral and bare earth conductors, the whole being XLPE served. All cables are to be installed in compliance with the Manufacturer's recommendations.

The sizes indicated are for cables with copper conductors unless otherwise specified. For LV systems aluminium conductor cables may be offered as an alternative if a price advantage can be shown. In such cases both the resistance and current carrying capacity of the aluminium cables offered must compare suitably with the sizes of copper conductor indicated. Where cables offered are other than those specified, Scheduled Rates for the supplying, laying, jointing and termination of the cable shall be entered in "Departures from the Specification". The Contractor will be responsible for advising equipment suppliers of the type of cable termination required if a cable other than that specified is accepted.

Cable Lengths

All scheduled cable lengths are for tendering purposes only and the Contractor shall measure the actual lengths required before ordering. The length of all cables will be re-measured after installation and the lengths indicated in the Bill Schedule of Quantities will be adjusted accordingly. The Contractor will be paid for the actual lengths measured on site and any allowance for snaking, joints or ends must be incorporated in the unit price.

Handling of Cables

Care shall be taken in handling drums of cable. Cable drums shall not be dropped or allowed to roll unchecked. The drums shall, under no circumstances, be rolled in any direction other than that indicated by arrows thereon.

When running cable off a drum it shall be properly and securely mounted to rotate without difficulty and the spindle supporting it shall be straight, horizontal, supported at both ends and of adequate strength. Cable shall only be removed from the drum by rotating the drum. The inner end of the cable shall be released before running any cable off the drum.

Care is to be taken to ensure that each length of cable is run off the drum sequentially so that a crossed core situation does not arise at joints.

No cable shall be bent to a radius less than 12 times the overall diameter of the cable, Bending or straightening shall be done slowly. PILCA cable shall not be laid if the temperature falls below 10□C.

Should a cable inadvertently become damaged, or the lead sheath or end cap punctured, this fact shall be brought to the notice of the Engineer immediately, who shall decide what further action is to be taken. The Engineer shall also be notified immediately should there be any suspicion of moisture having entered a PILCA or XPLE cable.

Cables fixed to Surface

Where cables enter flush boards from cable sleeves, the sleeve shall turn up to floor level and a duct shall be forced in the wall to accommodate the cable. Care shall be taken to ensure that the bending tolerance of the cable is not exceeded in drawing the cable into the sleeve. The duct shall be of sufficient size to accommodate the cables. The edges of the duct are to be lined with timber battens to which a bevel edged metal cover is to be screwed, using countersunk headed screws and cup washers.

Wherever cable saddles or any other items are to be fixed to structural components, the use of dry plugs of wood will not be permitted. 'Rawl plugs' or other plugs to approval only shall be used. Surface mounted cable protection pipes shall be galvanized and shall be fixed with saddles of 32mm x 3mm galvanized strap bolted to the wall using bolts grouted in, 'Raw bolts' or similar. All cables rising on the outside of buildings or on poles shall be protected by such pipes to a height of 2,0m above ground level. Where a cable is installed fixed to a pole, it shall be attached to the pole using stainless steel "Bandit" strap or equal. Care shall be taken to ensure that the straps are tightened correctly and that they do not distort or indent the cable sheath.

Cables in Sleeves

Cables shall pass in and out of buildings and under roadways and pavements in sleeves. In addition, where cables cross or run along a boundary between two plots, these cables shall, where called for, be installed in sleeves. All sleeves shall be installed in accordance with the Clause "Sleeves" elsewhere in this Part.

Cables laid in Trenches

HV cables shall generally be laid 800mm and LV cables at 500mm below ground level. Where two HV cables are run in the same trench, they shall be laid a minimum of 300mm apart with

separate cable slabs over each cable. Where HV and LV cables are laid in the same trench, the HV cable shall be located on the roadside and the LV cables on the plot side of the trench. A horizontal distance of not less than 400mm shall be maintained between the cables of different voltage groups. Where several LV cables are run in the same trench, they shall be laid with a minimum separation of 100mm. This applies to feeder cables only and not street lighting and service cables which shall be only 25mm apart. Cables shall not cross each other.

Where cables run across even parallel to lateral boundaries, they shall be located 1,0m from the boundary at a depth of 1,0m. If so, specified they shall be run in sleeves, otherwise both HV and LV cables shall be protected by cable slabs and a PVC sheet marker laid 300mm, above them.

The trench bottom shall be cleared of all sharp or protruding stones. The trench is then to be refilled with 150mm of soft material and compacted. A further layer of soft material shall be installed after the cables are laid to provide 200mm cover for the cable when compacted. Protective cable slabs a minimum of 50mm thick x 230mm wide shall then be laid in the case of HV cables, and PVC sheet cable marker strip 450mm wide with indelibly printed warnings every 150mm along its length, in the case of LV cables. In cases where HV and LV cables run in the same trench, 100mm of soft bedding for the LV cables shall be situated above the protective cable slabs. Lmere LV service cables or street lighting cables only are installed, a clean trench bottom and soft material back-fill only is required, and no PVC sheet marker.

The soft material described above may be either sand or back-fill material sifted through a 3,0mm mesh grid. Where the bottom of the trench consists of only soft sandy material, the bedding underneath the cable shall be omitted and the cable shall be laid on the trench bottom at the correct depth. Permission must be obtained from the Clerk of Works or the Engineer for the cable bedding to be omitted in such instances. Where sand must be brought to site, the quantity must be measured and confirmed by the Engineer or Clerk of Works.

The balance of the trench is to be back-filled with excavated material from which all stones, etc. greater than 100mm in size have been extracted. All such extracted material is to be removed from site.

Cable route markers shall be provided for all HV and main LV feeder cables at road, culvert and Telkom cable crossings, at all changes of direction, at joints and at intervals not exceeding 60 metres along the strait. Cable route markers shall comprise concrete blocks in the shape of truncated pyramids 300mm high, 150mm x 150mm at the top and 225mm x 225mm at the base. An aluminium plate 3,0mm thick minimum, with four rods 75mm minimum welded to it on the underside, shall be cast into the top of the concrete block, and the plate shall have stamped on it the cable data and direction arrows, and at a crossing, the crossing shall be indicated.

The cable route markers shall be placed over the cable, in the trench way, and shall protrude 25mm above the finished ground level but not where they are likely to cause an obstruction or be in the way of moving traffic. Joint markers shall indicate as such. The Contractor shall ensure that the ground under and around the cable marker is properly compacted.

Laying of Gables with other Services

Where cables are laid in trenches containing water and other pipes, etc., the Contractor shall arrange with the Civil Engineering Contractor and Engineer, to lay the electrical cables along one edge of the trench with the other services

occupying the other edge. The cables shall be laid not less than 600mm from such service unless otherwise approved by the Engineer.

At road and services crossings, sleeves as described elsewhere herein shall be provided, one for each HV cable and a separate sleeve for other cables, unless otherwise indicated on the drawings.

At Telkom cable crossings, power cables shall cross 300mm below and at right angles to all such cables or sleeves for future cables.

The power cables shall be enclosed in asbestos cement split sleeves with cable slabs over, both of which shall extend 1,0m either side of the crossing. The two sections shall be firmly fastened together with robust stainless-steel straps. The full length of all such sleeves shall be covered by cable slabs installed 150mm above the sleeve. No power cable running parallel with a Telkom cable shall be laid within 1,0m measured horizontally from the Telkom cable.

Wherever existing buried Telkom cables are encountered, strict precautions and care shall be taken, and close supervision given. Any damage to, or disturbance of Telkom cables whatsoever shall be immediately reported and confirmed in writing to the Engineer.

Labelling of Cables

All cables shall be labelled with 3mm high letters punched onto aluminium tape attached to the cable with aluminium wire. The label shall state the cable size and number of cores. All main feeder cables shall also be labelled to state from whence they are supplied. The labels shall be so installed that they are easily readable.

2.19. CABLE TRENCHING

Cable trenches

Tenderers must base their tariffs for cable trenches in soil, soft rock and hard rock on the quantities given in the Bill of Quantities. The actual quantities shall be determined on site. Adjustments to the Contract Price shall be calculated using the tariffs in the Bills of Quantities, after completion of the installation.

SOIL : Shall mean hand pickable soil and includes loose gravel, clay, backfilled soil, lose or soft shale, loose literati and rocks less than 75mm dia.

SOFT ROCK : Shall mean rock which is hand pickable including hard shale, dense literati and rocks exceeding 75mm in dia. to 0.03 cubic metres volume.

HARD ROCK : Shall mean granite, quartz sandstone, slate and stone of similar hardness as well as rocks exceeding 0.03 cubic metre volumes.

No guarantee can be given that explosives will not be necessary for excavations. However, should explosives be necessary, and the Contractor receive permission to use explosives, the Electrical Contractor shall remain responsible for all work done with the explosives and shall comply with all conditions, regulations, requirements etc. imposed by the governing bodies.

Mechanical excavators may be used for trenching operations if they are not used near other plant, services or other installations likely to be damaged by the use of such machinery. The use of mechanical excavators shall be subject to the approval of the Engineer.

Should excavations be done in proximity of existing services extreme care must be taken. Only labourers with experience of these conditions may be utilised.

The bottom and sides of trenches must be of smooth contour and shall have no sharp dips or rises which may cause tensile forces in the cable during backfilling.

Backfilling of trenches may commence after the trenches have been approved and shall be compacted in layers of 150 mm. Sufficient allowance must be made for final settlement. For the first layer of 150 mm, sifted soil of which 75 mm must be below and 75 mm must be above the cable must be used. Where no suitable soil is available on site, the Contractor shall import fill from elsewhere and make all the necessary arrangements to do so.

The Contractor shall be responsible for taking the necessary precautions where excavations may be dangerous. Refer to the Machinery and Occupational Safety Act 1983, Reg. 13 of the General Safety Regulations. The Contractor must ensure that all buildings, sewers, etc., are protected against caving.

The cable trenches shall be excavated to be 300 mm wide for one to three cables and the width shall be increased where more than three cables are laid together so that the cables may be placed at least two cable diameters apart throughout the run.

Payment will be made on a cubic excavation rate based on the given maximum dimensions or the actual dimensions, whichever is the lesser. The only exception shall be in cases of additional excavations caused by obstructions such as water pipes, drains, large rocks, etc., in which case the length of the additional excavation must be agreed upon on site by the Engineer.

Joints

Joints in cable runs shall not be allowed unless specified or authorised in writing, by the Engineer. Where cable joints are to be made, a joint hole must be excavated of sufficient size to enable the cable jointer to work efficiently and unimpeded.

Each cable end must be left in a loop of 0.9m to prevent any tension on the joint.

During backfilling the section supporting the joint must be compacted to the extent that no movement will take place after the trenches have been backfilled.

All joints in underground cables and terminations shall be made either by means of compound filled boxes according to the best-established practice by competent cable jointers using first class materials or by means of approved epoxy-resin pressure type jointing kits such as "Scotchcast". Epoxy resin joints must be made entirely in accordance with the manufacturer's instructions and with materials stipulated in such instructions. Low voltage PVC cables are to be made off with sealing glands and materials designed for this purpose which must be of an approved make.

Where cables are cut and not immediately made off, the ends are to be sealed without delay.

Cable lying

Cables must be removed from the drums in such a manner that the cable is not subjected to mechanical damage, twisting or tension exceeding that stipulated by the cable manufacturer

The laying of cables shall not commence until the trenches have been inspected and approved. The cables must be adequately supported at intervals during the whole operation.

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 drawing in of the cables.

Sleeves

All sleeves indicated on the drawings will be supplied and installed by the Electrical Contractor. It shall be the responsibility of the Electrical Contractor to liaise with the builder to ensure that all the sleeves are correctly installed.

Before backfilling the ends of all sleeves must be sealed with paper and a weak cement mixture.

Cable markers

Cable markers must be provided on all cable runs at 50m intervals on straight runs and at all bends. The position of cable markers must be confirmed on site.

Cable markers must consist of 150mm x 150mm x 300mm high concrete blocks with aluminium or other rust free metal plates marked with arrows to indicate the route.

2.20. CABLE TRAYS

These consist of two basic types, i.e., perforated and folded or wire mesh comprising Light, Medium and Heavy Duty. The actual type and duty required, and the finish if not as set out below, are specified elsewhere in this Specification.

Perforated and folded trays:

Light duty tray shall be manufactured from pre-galvanized perforated sheet steel. The minimum material thickness shall be 1,0mm for tray widths not exceeding 150mm and 1,2mm for widths not exceeding 300mm. Turned-up edges shall not be less than 12mm for tray widths not exceeding 230mm and 20mm for widths not exceeding 300mm. Maximum spacing between supports shall be 1000mm.

Medium duty “Standard” or “Marine” tray shall be manufactured from 1,2mm thickness perforated sheet steel with turned-up edges of not less than 12mm for tray widths not exceeding 100mm, and 19mm for tray widths not exceeding 600mm. The tray shall be hot dip galvanized after manufacture. Maximum spacing between supports shall be 1200mm.

Heavy duty “Heavy Duty” tray shall be manufactured from 2,5mm thickness perforated sheet steel and shall have turned-up edges of not less than 75mm. The tray shall be hot dip galvanized after manufacture. Maximum spacing between supports shall be 2400mm.

Wire mesh trays:

Medium duty tray shall be manufactured from 4,0mm wire and shall have turned-up edges of not less than 50mm. The tray shall be hot dip galvanized after manufacture. Maximum spacing between supports shall be 1500mm.

Heavy duty tray shall be manufactured from 4,0mm wire and shall have turned-up edges of not less than 75mm. The tray shall be hot dip galvanized after manufacture. Maximum spacing between supports shall be 1500mm

Splicing pieces, bends and tee pieces shall be provided to suit the cable tray system. These shall be of an approved make conforming to the width and quality specification of the cable tray being used.

Trays are to be installed in accordance with the Manufacturer's recommendations, supported in such a way that they are carried on cross members cantilevered from a vertical support so that cables do not have to be threaded between the supports. Trays on walls are either to be carried horizontally on right angled brackets or fixed vertically to the wall. All hardware, support brackets, etc., shall be hot-dip galvanized. Support brackets shall be spaced so that a sag of 1/200 is not exceeded with the tray fully loaded. Further, the maximum spacing limit specified above shall not be exceeded.

Where trays are likely to be damaged because of their proximity to a working area and could therefore be stepped on or similar abused, they are, if possible, to be installed out of the way of such abuse. Where this is not possible, only heavy-duty tray is to be used and additional longitudinal support in the way of angle iron of suitable size is to install.

Where the width of cable trays is unspecified elsewhere in this Specification, they shall be sized to accommodate 20% more cables than the number presently to be installed on the basis that the future cables will be of the same average size.

Unless otherwise specified, all cables over 16mm^2 are to be spaced at least 12mm apart. Where cables are laid flat on trays, fixing is required for all cables larger than 16mm^2 using heavy duty nylon cable ties. Where fixed in the vertical plane, all cables are to be strapped to the trays using stainless steel strapping applied with an approved tool. This also applies to single cables fixed to trusses or other parts of the structure and to all cables fixed to cable trays in a physically vulnerable situation.

2.21. CABLE JOINTS AND TERMINATIONS

General

Cable jointing and termination shall be carried out by a qualified cable jointer using only approved standard methods for the cable. Proof of his training may be required.

Joints in all cables shall only be made at full drum length intervals, but where necessary and when approved by the Engineer cable through joints may be used in other approved positions. Where a cable has steel wire armouring all strands of armouring shall be through jointed.

Cable connections shall be made by means of crimped or sweated lugs, firmly bolted, one plain and one lock washer being placed under the nut, so that the plain washer is against the lug and there shall be no washer between the lug and the terminal. A plain washer is also required under the bolt head. Alternatively, sweated stems fitting into clamp connections will be acceptable.

Crimped lugs up to 70mm² shall be fitted using manual tools and hydraulic tools from this size upwards. Approved tools are to be used in both cases. A hydraulic tool is to be used on all sizes of aluminium cable. Where a single point hydraulic crimping tool is used, the lug shall be crimped in three places. Where a hexagonal die is used, this shall extend the full length of the lug.

Where aluminium cored cables are to be connected to circuit breakers, the aluminium cable lug shall be bolted to a copper tag or tail which is to be connected to the circuit breaker. The Contractor shall ensure that sufficient Densal paste is installed on the faces of the lugs. Where an aluminium cable is to connect to copper, the lug shall be a bi-metal type lug with a copper spade and an aluminium ferrule friction welded to the spade.

Cable connections shall be made using brass bolts, nuts, and washers, together with a star lock washer, on all kiosks, fused feeder panels and minisubs and with cadmium plated steel bolts and nuts on all indoor equipment. All bolted joints shall be taped with self-vulcanising (not adhesive) tape.

Where cable connections are required to the HV and LV terminals of transformers, these shall be made off as follows: -

Red Phase to Terminal A

White Phase to Terminal B

Blue Phase to Terminal C

All transformer connections shall be kept in strict phase rotation and where two or more units are to operate in parallel, the respective connections are to be checked for phase rotation and polarity. In the case of cable terminations to transformer bushings the cable itself shall be clamped substantially to a post adjacent to the transformer, connections to the bushings being puttied and taped.

All connections are to be colour coded.

HV Cable Terminaisons

PILCA Cables

PILCA cable shall not be unsealed until all preparations have been made for making-off or jointing, which shall not be carried out during extremely humid or damp conditions. When a piece of PILCA cable is cut from a long length, the end of the un-used cut length is to be plumbed air and moisture tight.

The end terminations of all PILCA cables at switches, etc., shall be fitted with sealing boxes or chambers, equipped with lead plumbing brass wiping glands duly plumbed to the cable sheath and finally filled with approved compound. The tails of the cable may only be brought out of a cable end box if barrier ferrules are used to prevent the ingress of moisture. Sweated moisture barriers will not be accepted.

For through joints a seamless non-porous type of straight through plumbed joint with cast iron protection box fitted with armour tape clamps and finally filled with compound shall be used. The numbers or colours of the cores shall be matched without twisting at the joints and PILCA cables may, if necessary, be unsealed and then resealed to check this before the second length is laid.

Cable end and through joint boxes shall be filled with MR-3 compound as manufactured by African Bitumen Emulsions.

XLPE Cables

XLPE cable terminations are to be made in full compliance with the recommendations of the supplier of the termination system.

Where an XLPE cable is terminated onto an item of equipment with a cable box as in the case of switchgear, whether indoor or outdoor, an outdoor type of taped termination complete with silicone tape shall be used. The cable box must be effectively sealed against moisture but shall not be compound filled. A standard compression type gland shall be used where the cable enters the cable box. The gland plate shall be effectively earthed to the equipment earth bar.

All through joints in XLPE cables shall be provided with steel protective sleeves covering the joint.

Outdoor Terminations

All outdoor cable ends to transformer or similar bushings, overhead line equipment or cable ends within minisubs shall be made with heat-shrinkable high voltage termination systems suitable for 5 - 69kV as manufactured by Raychem Corporation. The material shall be non-- tracking, erosion resistant and shall comply with the manufacturer's appropriate Quality Assurance Schedules Nos. RK 1700 and 1720 as amended. The material shall not be subject to deterioration due to ultra-violet exposure. Heat shrink sheds shall be used to increase the creepage length. The shed closest to the crotch of the cable shall incorporate all three tails of the cable. In cases where cables are to be connected to overhead lines direct, the tail is to be connected to the lightning arrestor termination.

At all outdoor terminations a minimum of 3,0m of cable slack shall be provided adjacent to the termination point.

Where no intermediate connection is available, the cable tails shall be supported by means of pin insulators every 1,5m to avoid vibration in the crotch of the cable. Where a cold tail is joined to the cable tail, this shall be done by means of a barrier ferrule. The heatshrink shall cover the barrier ferrule.

Where the cable tail itself is connected to the lug or stud of an item of equipment, a sealed-end lug shall be crimped onto the tail and the lug connected to the equipment. The heat-shrink shall cover all but the spade of the lug to prevent the ingress of moisture.

Where a cable tail connects onto an overhead line, a solid centre sleeve shall be crimped onto the cable tail and the sleeve clamped to the line. The heat-shrink is to overlap the sleeve to prevent the ingress of moisture.

Tenderers are to make do allowance for the length of tails in each case, since no claim for additional cost for extra-long tails will be considered.

LV Cable Terminations

PVCAS cables shall be made off using adjustable mechanical glands. Care shall be taken to ensure that armour wires are correctly seated in the gland and that all parts are properly tightened. Outdoors, in damp situations and in all minisubs and kiosks, neoprene waterproofing shrouds are to be fitted over all glands.

Where cable connections from minisubs and kiosks to consumers and street lighting are excluded from this Contract, the Contractor shall, nevertheless, ensure that sufficient space is left on the gland plate for the future cables.

Wherever PVCAS cables are terminated to overhead lines a suitable moulded heat shrinkable glove to affect a watertight seal at the crotch shall be used, in accordance with the manufacturer's instructions. Alternatively, a PVC cable cap may be used.

Service cable Terminations

Service cable ends are to be in the positions indicated on the drawings. In the general case, the ends are to be located 1,0m from each of the front and lateral boundaries. Where they cross the road in sleeves, they are to be located 1,0m into the erf directly opposite the sleeve.

No service cables are to be laid to erven directly behind kiosks or at pole positions.

The cables are to be left sealed with a heat shrink cap at a depth of 500mm. Before sealing, each cable is to be checked by the Contractor, in the Engineer's presence if he so decides, to ensure that it is correctly located and labelled at the respective kiosk or pole.

After checking and sealing and while the end of the connection is still exposed, marker posts shall be installed at the end of the connection and vertically above it. The posts shall be manufactured from Y-section fencing standards 1,5m long, split for 75mm at the base and cast into minimum 200 x 200 x 100mm concrete blocks made from the same mix as specified in the Clause "Plinths" elsewhere in this Part.

They shall be installed such that 500mm protrudes above ground. Each post shall have a 150mm wide red band painted at the top using an approved exterior enamel paint.

2.22. CABLE TESTING

On completed sections of laid, jointed and terminated HV cables, a high voltage DC test of 15 minutes duration shall be carried out by persons qualified to make such tests.

Contractors must note that where such tests will include sections of cable which have already been in service, the test voltages and duration are to be reduced in accordance with the Engineer's instructions.

Cable tests shall be in accordance with the following:

PILCA cables - SANS 97, Annex A-3.3

XLPE cables - 5000v megger test between cores and to earth unless additional tests are ordered by the Engineer or are called for elsewhere in this Specification.

Method - SANS 0198: Part XIII

2.23. CABLES FOR EARTHED SYSTEMS

(Based on SANS 97: Table A-2)

Type	**PVCAS****	**BELTED**		**SCREENED**		**XLPE****	
Rated voltage	600/1000	11000	22000	11000	22000	11000	22000
Between conductors - DC	3kV	31kV	60kV	-	-	18kV	36kV
Conductors to screen - DC	-	-	-	19kV	36kV	18kV	36kV
Conductors to earth - DC	3kV	19kV	35kV	19kV	36kV	18kV	36kV

** Test only when specifically called for

** Obtain instructions from the Engineer before testing

2.24. WIRING IN CONDUIT

PVC insulated wire to SANS 1507 and 1574 shall be used and shall be from full coils of fresh stocks delivered to site with the original packing or seals undisturbed.

Lighting circuits shall be wired with 1,5mm², socket outlet circuits with 2,5mm² and heater and water heater circuits with 4mm² wire unless otherwise specified. All other circuits shall be wired with the sizes indicated or in accordance with the Wiring Code, as appropriate. All phase conductors shall be coloured red and neutral conductors black.

The ends of all wires, whether single or looped, which must be connected to the connecting terminals of switches, plugs, holders, fittings and distribution boards, are to be tightly twisted together. Cutting away the wire strands will not be allowed.

The loop-in system is to be adopted throughout any conduit installation and joints will be permitted only in special circumstances and subject to the approval of the Engineer. Such joints shall be made only with approved connectors in approved boxes.

The circuit wiring for different services, e.g., lighting and power, shall be run in separate conduits.

Where switches fed from different phases are mounted adjacent, they must be mounted in separate boxes or a single box with a fixed metal barrier between each switch. Where such switches are on the same circuit, multiple switches in a single box shall be used.

Metal conduit shall be heavy gauge solid lap welded steel to SANS 1065, screwed or plain-end and black enamelled or galvanized, both as specified elsewhere in this Specification. All metallic conduits shall be manufactured from mild-steel with a minimum thickness of 1,6mm in respect of screwed and 0,9mm for plain-end conduit except that when used in concrete slabs, plain-end conduit shall have a minimum wall thickness of 1,2mm and when laid in screed on top of concrete slabs, 1,6mm.

Non-metallic conduit shall comply with to SANS 950. Installation of non-metallic conduit shall be in accordance with Amendment No.2 of SANS 950 Appendix C. Only plastic saddles and compatible fittings shall be used. Earth wires shall be installed with all non-metallic conduits.

All conduit fittings for steel conduit shall be malleable iron or pressed steel except for brass bushes. Plastic fittings shall be used with non-metallic conduit. Conduit fittings shall comply with SANS 950 or 1065 as appropriate. The use of inspection tees or elbow pieces and internally screwed solid bends will not be permitted. However, internally screwed solid bends for 40mm and 50mm dia. conduit may be accepted in certain circumstances if approved by the Engineer.

All conduit shall, wherever possible, be concealed by being cast in concrete slabs, chased in, built in or run-in roof spaces. Where black enamel conduit is called for, this shall be substituted with galvanized when run in non-suspended floor slabs such as ground floor or basement floor slabs. When run in surface beds conduit is to be galvanized and is to be laid in concrete on the surface bed so that it is completely covered.

Conduit cast in concrete shall be fixed at intervals to the form work, if such form work is of wood or, if of steel plates, to the steel reinforcing. Where hollow tile slabs are being used in the structure, as indicated elsewhere in this Specification, back entry conduit boxes shall be used. All outlet boxes for lighting points shall be of the long spout, deep type. Where additional depth of box is required, standard conduit box extension rings, firmly screwed to the box, shall be used.

Where structural expansion joints occur, conduits shall, as far as possible, be laid to avoid crossing the joint. When crossings are unavoidable, the following arrangement shall be made, from a drawbox, or the nearest outlet within 4,0m of the joint, conduit of one size larger than necessary for the wire sizes, shall be run straight, and at right angles to the joint, finishing at the joint. Conduit of the required size shall then be passed into this from the other side of the joint, bushed inside the draw-box, but not mechanically connected otherwise. Care shall be taken to prevent concrete from entering the end of the larger conduit. The conduits approaching from both sides of the expansion joint shall be wrapped with two layers of corrugated cardboard from a point 1,0m from the joint. A bare earth wire of the same size as the wiring in the conduit shall be run from the drawbox to the next outlet, connecting firmly and solidly to each box. Care shall be taken to exclude the ingress of dirt or moisture to partially completed runs, and all open ends shall be plugged temporarily while work is not actually in progress. The plug may consist of a conduit socket with brass ET plug or conduit fishtail, or purpose made tightly fitting plastic sealing caps. Wooden or paper plugs will not be acceptable.

The Contractor shall take all possible precautions during the construction Stages of the building to prevent damage to projecting conduits, etc. In vulnerable positions projecting conduits shall be painted in a bright colour or, if necessary, shielded by a large covering. A responsible workman shall be always present during casting of concrete containing conduit work to ensure that the conduit work is not disturbed by the casting or vibration of the concrete.

Conduit in false ceiling spaces shall be run surface. The conduit into the space shall either extend through the decking or shall be terminated in a back entry box with a coupling inside the box to enable the conduit to be extended when shuttering is removed.

In roof spaces all conduit runs shall be parallel or at right angles to trusses and joists. Where conduits run along trusses and joists, they shall not be run or fixed on the top but on the side. Conduit shall lead into and out of back entry conduit boxes at all fitting positions. All such boxes shall be finished flush with the underside of the ceiling and the lighting fittings shall be screwed directly onto the box. Where necessary additional fixing of a fitting and conduit box shall be provided.

At ceiling positions where conduit runs do not have to continue to the next truss (e.g., last point in a row), the conduit shall be extended beyond the box to the next truss. This conduit extension shall be plugged.

Where conduit is run on the surface, it shall be fixed with stand-off saddles, multiple spacer saddles being used for conduits run together, the maximum distance between the saddles shall not exceed 1,5m. Where a conduit box carries a lighting fitting it shall be fixed within 100mm on either side of the box.

Where conduits must run adjacent to gas or cold-water pipes, communication or data circuits, they shall be prevented by spacing or other means from coming into contact with these other services under any condition.

Under canopies, outlets for future signs, etc., which have been terminated in round conduit boxes, are to be blanked off with 75mm dia. galvanized cover plates finished with a zinc plum bate primer. These are to be fitted prior to painting and are to be fixed using cheese-headed brass machine screws.

Where conduit enters boards, trays, etc., all burrs around holes shall be removed before insertion. Locknuts shall be used inside and outside, with female bushes inside. Couplings and male bushes shall not be used. The same arrangement shall be used wherever possible for entry into switch boxes, control gear, etc., provided with clearance holes. Where this arrangement does not allow sufficient wiring space, however, couplings and hexagonal male bushes may be used, but must be very tightly screwed up. In the case of multiple back entries into a conduit box, male bushes and couplings are to be used. Care must be exercised when laying conduit in the vicinity of distribution boards of any type to ensure that conduits radiate from these points in order. Under no circumstances are more than two conduits to cross at any point where cast in concrete and a space of at least 20mm must be left between all conduits both vertically and horizontally after emerging from the distribution point. Careful planning of conduit work can prevent a mass of conduit in the slab, and any re-arrangement necessary to provide an acceptable layout will be at the Contractor's own expense.

Drops to switch and other high-level outlets shall be from ceiling while conduit to low level outlets shall be run in the floor unless specified to the contrary. In basements and ground floor areas which are below natural ground level, all conduits to any type of outlet shall drop from ceiling level.

No draw boxes which are not, in themselves, outlets shall be permitted except with authority from the Engineer. Notwithstanding the Wiring Code, if it proves necessary to draw conductors round more than two 90□ bends, or the equivalent, or on very long straight runs, draw boxes are required. The maximum length of straight runs between draw boxes shall not exceed 20m. Such draw boxes shall be provided with oversize flat covers fitted flush with the ceiling, fixed with cheese-headed screws.

The Contractor is responsible for checking with the Building Contractor by reference to the drawings on site, of the positions where panelling, tiling, tile edging or dados, etc., may affect the exact positioning of outlets. No allowance for extras will be allowed if boxes must be moved to comply with the above unless the details are altered after completion of the conduit work. Exact positioning in general means centre outlets on panels, fitting box edges to tile edges, and dropping or raising switch points below or above dados as close to the specified position as possible. Where any doubt arises, the Engineer shall be consulted before installation of the outlet. The same requirement applies to the positioning of lighting outlets in false ceilings, regarding fixing fittings to correspond to ceiling panel modules. Ceiling light points are normally either on a centreline between walls and/or beams or spaced evenly with half a unit between wall or beam and the first point. Where outlet positions deviate from this scheme the scaled dimensions to the centre of the symbol are to be taken as the centre of the outlet.

All setting of conduit shall be done with approved tools. No kinks will be accepted. Where necessary boxes with special configurations shall be used to avoid the necessity for too many sets in conduit work.

The conduit shall be run or erected as far as possible in straight or symmetrical lines, with easy sets or bends. Care shall be taken when installing conduit that cut ends are completely free from burrs and sharp edges which might damage the conductors. All open ends shall be fitted with brass bushes. Composition bushes will not be accepted. All bushes are to be

fitted prior to wiring. All running joints shall be fitted with lock-nuts, and lock-nuts shall be provided wherever necessary to ensure that all conduit joints in the installation are tight.

Where flexible conduit connections are required, only "Kopex" or "Adapterflex" flexible conduit or similar approved shall be used. “Sprague” conduit will not be accepted.

Where conduit only is required, draw-wires shall be left in each such conduit, irrespective of the service for which it is required. Draw-wires shall be minimum 1,6mm dia. hot dipped galvanized steel.

Conduit run on the surface within ducts shall be painted an approved colour under this Contract. Conduit in false ceilings and roof spaces is not to be painted, except as hereunder. Painting shall be carried out by a qualified painter. Any exposed screw threads or areas where the galvanising or enamel has been damaged shall be painted after erection with two coats of anti-corrosive paint, and, where installed in concrete, before casting, unless otherwise approved by the Engineer.

The Contractor must ensure that, prior to final completion, all openings left at the conduit exit from switch rooms or between floors in rising ducts, are made good.

2.25. WIRING TRUNKING

This shall be used where indicated elsewhere in this Specification and shall be of the type specified. Where trunking is to be fabricated of sheet metal, this shall be of 1,0mm minimum thickness. Each length shall be so constructed that it matches identically with the other lengths and the lengths shall be joined by splicing sections inside the trunking. All trunkings shall be provided with covers of the type and material elsewhere specified in this Specification.

All trunkings shall be finished by degreasing, suitably primed and painted with two coats of high-quality enamel, unless otherwise specified. Where galvanising is specified, this shall mean fabrication from pre-galvanized plate unless hot-dip galvanising is specifically called for. Electro-galvanising will not be accepted.

"Unistrut" or equivalent trunking shall be provided to the catalogue number indicated, otherwise shall be of appropriate size for the purpose. The standard cover shall be of PVC of a colour to match the trunking. Other types of cover required will be specified elsewhere in this Specification.

All trunkings shall be installed straight and level and shall incorporate all recommended fixings when of proprietary makes. Plastic clips shall be installed at not more than 1200mm centres to hold wiring in place when covers are removed.

Earth wires shall be run in all wiring trunking, and these shall be bonded to all equipment fed by wiring carried in the trucking and to the trucking lengths themselves.

When trunking is cast into structures it shall be taped to prevent the ingress of slurry and it will be the Contractor's responsibility to ensure that the trunking runs true. Where trunking is fitted to pre-formed slots in the structure or built into brickwork, the trunking shall be adequately braced to prevent deformation of the sides during plastering, resulting in the bowing of the cover when finally fitted.

Where light fittings cross ceiling trunking, the cover strip shall be cut square to abut the fittings, and the raw edges, if of metal. shall be painted to match the applied finish.

Skirting trunking shall be as specified elsewhere in this Specification, the general remarks above being deemed to apply.

2.26. SWITCHES, SOCKET OUTLETS, PLUGS AND BOXES

Switches shall comply with SANS 163 and shall be reasonably silent in operation. They shall be of 16A rating unless otherwise specified. Socket outlets shall be to SANS 164. Samples of all switches and socket outlets shall be approved by the Engineer before installation.

Cover plates shall comply with SANS 1084. For flat type plates minimum 1,6mm thick metal and for pressed shaped plates minimum 1,0mm shall be used, the thick plates being finished in white, unless otherwise specified elsewhere in this Specification. They shall be fixed perpendicularly, and the tops of groups of plates shall be level. Plates for multiple switch

positions shall be of the same style and type as for single switch positions. Samples of all plates are to be submitted before ordering.

Submersible (WT/S) switched socket outlets are to comprise "Ceeform" or approved equivalent surface mounted units complying with IP67 of the sizes elsewhere specified in this Specification so installed that the action of removing the plug does not dislodge the fixed portion. A minimum of two plugs shall be provided, any further plugs required being as elsewhere specified.

Watertight (WT) switch socket outlets are to be as for Submersible above, but to IP65.

Weatherproof (WP) socket outlets are to comprise a socket outlet with aluminium plate and non-ferrous screws set into a "York" model S15 fibreglass box with sliding cover.

Weatherproof (WP) switches are to be "Wallsall" square pattern flush type or "Lewden" No.PD 145.

Weatherproof and watertight switches and socket outlets are to be semi-recessed in a manner to be discussed with the Engineer to ensure their acceptable mounting, especially in the case of face brick walls.

Where industrial pattern switches or socket outlets are called for, the components are to comply with the foregoing requirements and are to be mounted in approved metal casings. All switch toggles are to be protected. Where flush conduit work is required, the industrial units are to be semi-recessed up to the back of the cover section. Care is to be taken that the boxes are adjusted to suit the finished plaster work and close co-operation with the plasterer is necessary to achieve an acceptable result.

Flush switches shall be mounted vertically in standard hot dip galvanized mild steel boxes 100mm x 50mm x 50mm complying with SANS 1085, socket outlets being in standard 100mm x 100mm x 50mm boxes, unless otherwise specified or approved. Attention is drawn to the Clause "Wiring in Conduit" elsewhere in this Part about the configuration required for multiple switches on the same or different circuits. Up to three switches in a vertically mounted 100mm x 50mm x 50mm box will be acceptable if designed for such mounting. The Contractor is to ensure that the Plasterer covers right to the edge of various boxes since gaps between plates and plaster will not be accepted, and it is deemed the Contractor's responsibility to ensure that no such gaps are visible.

Switches shall be mounted at 1400mm, socket outlets at 350mm above finished floor level, except in hospitals where socket outlets shall be at 450mm, unless otherwise specified. Where shown adjacent to walls on the same wall as the doors, switches shall be situated with the centre line between 125mm and 230mm from the edge of door frames except where wall nibs are smaller than 250mm wide, in which case they shall be positioned centrally. Heights above finished floor are taken to the underside of rectangular boxes or to the centre of circular boxes. The scaled dimensions to the centre of the symbol are to be taken as the centre of the outlet in the absence of specified dimensions on the drawings.

2.27. LIGHT FITTINGS

General

Allowance shall be made for the supply and installation of light fittings as specified elsewhere in this Specification except for those fittings for which PC Sums are allowed. Allowance for the installation only of these PC fittings shall be made.

Each incandescent fitting shall be supplied with a gas filled pearl or opal lamp of the wattage specified on the drawings complying with SANS 56 and Compulsory Specification VC 8043. Allowance shall also be made for appropriate lamps for mercury or sodium fittings. The size of each fitting must suit the wattage of the lamp specified. In the case of PC fittings, these will be supplied with lamps.

Fittings to be installed at each point are detailed on the drawings according to the code types set out elsewhere in this Specification. Supply of fittings marked PC is covered by a PC amount in the Price Summary. Catalogue numbers refer to fitting type only, not necessarily to size, which is to suit the wattage shown.

Fittings shall be directly fixed to ceiling or structure in addition to being fixed to the conduit box.

Fluorescent Fittings

Fluorescent fittings and their components shall comply with all the SANS Specifications relating to them.

Bodies are to be constructed of cold rolled sheet steel, bonderized or similarly treated for the inhibition of rust, treated with anti-corrosion undercoats of paint followed by high quality white baked enamel. No patched-up scores or other damage to enamelling will be accepted. Nuts, screws, washers, etc., are to be non-ferrous or plated to prevent rusting. No equipment is to be riveted to the bodywork, all equipment being easily removable. The back plate is to be free of all protruding screw heads. All such screws are to be countersunk headed.

Recessed fittings shall be provided with a raceway cover over control gear, thus preventing control gear from accidentally falling onto the diffuser. Capacitors used in such fittings shall be so manufactured that in the event of failure, they do not present a fire hazard.

Fluorescent fittings are to be removable and not held in position by bolts shot through the back plate. If this system is used, the fittings will have to be removed and remounted at the Contractor's expense.

The fittings are to be wired throughout and wiring brought to terminal strips or connectors close to the conduit entry. Each of the incoming terminals shall be large enough to accommodate two 1,5mm² wires without difficulty.

Lamp holders are to be mounted on rigid material and so spaced apart that any natural expansion of the lamp will not exert horizontal forces on the holder. Each fitting is to be supplied with 3500□K white tubes, unless otherwise specified.

Low loss, high power factor ballasts approved by SANS tested in accordance with Section 7 of SANS 890, or ballasts which at least provide the minimum values laid down by the SANS shall be employed. Ballasts shall be of best quality self-contained metal clad type, suitable for operation on 220/250V 50Hz supplies. The voltage rating at each tap of the ballast terminal block shall be clearly and indelibly marked. Ballasts are to be silent in operation and shall be power factor corrected to not less than 0,9 lagging. Multi lamp fittings shall be stroboscopically corrected. Operation shall not cause radio or television interference.

Where ballasts bearing the SANS Mark of approval are available for a particular type of lamp and associated circuit, ballasts of that category which do not bear the Mark will not be accepted.

2.28. MISCELLANEOUS ELECTRICAL CONNECTIONS

Connections shall be made to all electrical equipment as detailed elsewhere in this Specification. The following provisions shall apply in general.

Control panels supplied by others will be installed by them and will be complete with an integral main isolator. This Contract covers the connecting of the main supply and cable gland.

Wiring from control panels to equipment is a part of this Contract, unless otherwise specified.

All motors shall be provided with an adjacent isolator were indicated on the drawings.

This isolator is to be mounted on a suitable floor stand if it is not possible or practical to mount it on the machine.

Final conduit connections to motors are to be through flexible conduit as specified elsewhere in this Part, or alternatively with PVCAS cable.

Domestic stoves shall be connected in accordance with the recommended method of the local Supply Authority for the area. A 1,5m length of flexible conduit as specified elsewhere in this Part shall be allowed for the final connection between the outlet and stove.

Allowance shall be made for connecting all stoves unless otherwise specified elsewhere in this Specification.

In cold rooms the light circuit shall preferably be wired in "Surfix" but if PVC insulated wire is used, this shall be in galvanized conduit directly secured to the fitting.

The point of entry shall be silicon sealed. Any thermostats, fan or other connections to be made within the cold room as specified elsewhere in this Specification, are to be made using "Surfix" run along the same general route as the refrigeration pipes and sealed as above.

2.29. PADLOCKS

Unless stated to the contrary elsewhere in this Specification, all padlocks shall be provided under this Contract.

In the case of extensions to existing installations, all padlocks shall match the existing with the same combinations.

Where available, padlocks with stainless steel shackles shall be provided. In all other cases padlocks shall be 38mm of "Viro" or equal manufacture fitted with stainless steel shackles.

They shall operate with a master key in addition to the individual key.

Where special combinations are required, these will be stated elsewhere in this Specification. Padlocks and keys shall be stamped with the combination number.

Three (3) sets of keys for each combination shall be provided.

These keys shall be handed to the Employer's authorised Representative and a receipt obtained.

The following equipment shall be fitted with padlocks:

Combination No. 1.

Outdoor substation gates.

Transformer tap-change switches.

HV switches and isolators.

Minisub HV compartment doors.

Combination No. 2.

Minisub LV compartment doors.

Distribution kiosk doors.

Fused feeder panel doors.

Combination No. 3.

Doors of compartments containing consumer meter

2.30. HOT DIP GALVANISING

Where hot dip galvanising is called for, it shall conform to SANS 763, the required coating thickness being in accordance with Table 1. Unless the galvanized part is to be painted, the coating is to be passivated immediately.

Where later painting is required, a suitable primer shall be applied at the galvanising works.

Before galvanising, all cutting, drilling, welding, etc., shall be complete.

Bolt threads shall be suitably undercut and nut threads over tapped to ensure the correct fit after galvanising

All galvanized parts shall be stored under cover and in stacks such that no part is resting on another and there is sufficient ventilation to prevent condensation occurring.

No galvanized parts shall be stored directly on the ground but on pallets or similar protection. Any damaged parts or parts attacked by white rust will be rejected.

Any galvanized surface that is subsequently damaged shall, if the Engineer does not require replacement, be touched up in the manner specified in the Clause "Painting" elsewhere in this Part.

2.31. PAINTING

Any metal work which is not galvanized or painted at Works shall be decreased using a solvent and thoroughly cleaned with a wire brush. If rust is present, this shall be removed by grinding. A red oxide self-etching primer shall be applied, followed by a white undercoat and thereafter a coat comprising a mixture of 50% undercoat and 50% finishing coat. The final coat shall comprise oil based outdoor type enamel.

All equipment that is delivered to site painted shall, after installation and as near as possible to handover, be lightly rubbed down, all damaged paintwork shall be touched up and thereafter the whole given one coat of oil based outdoor type enamel of the same colour as the original.

Where any galvanized or zinc coated surface has been damaged or cut, this shall be touched up using an organic zinc rich epoxy primer (containing min. 90% zinc) after thorough cleaning with a solvent and grinding away all rust. This is to be followed by a self-etching primer suitable for use on zinc coated surfaces and then an undercoat and two topcoats as described above.

2.32. INSTRUMENTS, METERS AND PROTECTION RELAYS

General

All indicating instruments and meters shall have 5A HRC fuse protection on all voltage connections.

All meters and instruments shall have labels fitted below, stating in which circuit they are installed and the multiplying factor, where appropriate.

All instruments shall have a red line marked on the scale at the normal or maximum operating point as appropriate.

The cases of all meters shall afford complete protection from dust and damp and shall be suitable for the attachment of seals.

Selector switches shall be rated at 16A and shall be like Sprecher and Schuh, Telex, Krause and Naimer or equivalent. They shall be provided with an "OFF" position.

All instruments and meters shall comply with the appropriate British Standards Specification.

The Tenderer shall submit full details of the meters, instruments and control switches offered in his tender, including connection diagrams for all equipment.

Protective circuits will operate at 30V DC unless otherwise herein specified elsewhere.

Potential Indicators

Potential indicators shall comprise three neon indicating lamps each energised from a capacitor bushing connected to indicate that the incoming cable or the busbars, as elsewhere specified, are alive.

Protection Relays

Protection relays shall be supplied in accordance with the following requirements unless otherwise detailed elsewhere in this Specification. All relays not covered herein will be specified in detail elsewhere in this specification.

Over current and earth fault relays shall be of the static type with either inverse definite minimum time characteristic adjustable from inverse to extremely inverse or definite minimum times of 2,4 or 8 seconds selectable on the relay. Over current settings shall be adjustable from 50% to 200% in 2,5% steps and time settings from 5 to 100% of the DMT. Earth fault current settings shall be adjustable from 10% to 40%.

Generally, two over current and one earth fault relay shall be mounted in a common housing. A suitable relay would be the GEC type MCGG52. Any other relay offered must be an approved equivalent to this unit. Sensitive earth fault relays shall be of the static type. Current settings shall be from 0,5% to 8% in 5 steps. The time delay unit shall be adjustable from 0,1 to 9,9 seconds in 0,1 steps or 10x these times, selectable on the relay. A suitable relay would be GEC type MCSU. Any other relay offered must be equivalent to this unit.

Current Transformers

Current transformers shall be epoxy-resin encapsulated. The rated burden shall be not less than 10VA, unless specified otherwise elsewhere. They shall comply with BS 3938 and shall comply with the following table.

Application	Primary Current	Class
Indication	All	5
Protection	All	3
Metering	Up to 250A	1
Metering	250 - 600A	0,5
Metering	600 - 800A	0,2
Metering	800A and above	0,1

Voltage Transformers

Voltage transformers shall comply with BS 3941 Class 0,5 accuracy and shall be 3 phase oil filled units mounted on top of the HV switch panel, arranged for horizontal draw-out. The output shall be 50VA per phase at 110V phase to phase unless otherwise specified. Fuse protection shall be provided on both primary and secondary.

Such transformers shall not be affected by single-phasing on the HV side.

Indicating instruments

All instruments shall be square format industrial accuracy grade to BS 89 and shall be flush mounted. All main instruments shall be 96mm square, meters for individual drives or in modular panels being 72mm square.

Ammeters

All ammeters, including whole current ammeters, shall be calibrated to 120% of the rated current. The overload capability shall be 10 x rated current for 1,0 second. Those reading more than 100A shall be CT operated with 5A full scale deflection.

Instantaneous reading ammeters shall be of the moving iron type, one instrument being provided, connected via a phase selector switch with "OFF" position.

Maximum demand reading ammeters shall be of the combined maximum demand and instantaneous type, one meter being supplied per phase, unless otherwise specified. They shall comprise a thermal maximum demand ammeter with drag pointer combined with a moving iron instantaneous pointer. The drag pointer reset knob shall be sealable. The bimetal system shall be ambient temperature compensated and shall have a 15-minute response.

Where dual ratio CTs are specified, ammeter scale plates are to be engraved on both sides to suit these ratios, the plate for the lower ratio being outermost.

Voltmeters

Voltmeters shall be of the moving iron type. One instrument shall be provided in each instance connected via a selector switch to read line to line voltages and line to neutral voltages. Volt meters for HV use shall be suitable for operation on the 110V side of the voltage transformer, while LV volt meters shall operate off a nominal line to line voltage of 400V. The scales between 90% and 110% of nominal voltage shall be graduated in 1,25% divisions.

PF Indicators

Power factor indicators shall be of the moving iron type suitable for use on unbalanced loads.

Consumption Meters

KWh meters shall be of the integrating watt-hour house service type with front connections complying with BS 5685. Such meters shall be whole current up to 80A and thereafter 5A operated by current transformers. All 20/80A whole current meters shall have cyclometer dials. A single 3 phase instrument may be used on a 3-phase circuit, but it must be suitable for use on unbalanced loads.

Combined kVA maximum demand and kWh meters shall be 3 phase 4 wire 231/400V or 110V 3 wire with 5A CT operated current coils. They shall generally be Sangamo type CYLP 2 element or equivalent. Where programmable meters are called for, they shall be Sangamo electronic type KVIP. Full details of programme facilities and operating instructions shall be supplied with these meters.

2.33. CONTROL EQUIPMENT AND WIRING

Time Switches

All time switches shall be mounted in an accessible position for ease of adjustment and shall be provided with re-chargeable nickel cadmium batteries to provide up to 48 hours of operation should a power failure occur.

Motor Control

Time switches shall be fully programmable to a maximum of 168 switching points with 24 memory addresses permitting hourly, daily and weekly settings. The shortest switching interval shall be 1,0 minutes. The units shall include a manual override facility. They shall be suitable for wall or DIN-rail mounting. Protection shall be at least to IP42, and the units shall operate satisfactorily in the temperature range - 5°C to + 55°C. A suitable time switch would be "Sauter" type Memotime Z5D 7.

General Purpose

Time switches shall have a crystal controlled stepping motor and be able to perform 48 operations per day with a minimum interval of 30 minutes. A manual override facility must be provided. A suitable time switch would be "Heinemann" type SAT-R.

Low Voltage Transformers

Bell and other low voltage transformers shall be of the double wound type having the secondary voltage specified and shall have an adequate capacity for the duty required but, in any case, not less than 50VA on short-time rating. The transformers shall comply with SANS 743 and shall have one end, or the centre point of the low voltage winding earthed.

Contactors

Contactors shall, unless otherwise specified, comply with BS 775 for current making and breaking Category ACI for non-inductive loads and Category AC3 for inductive loads.

Earth Leakage Protection Units

Earth leakage protection units shall be single or three phase, as indicated, with a sensitivity of 30mA, unless stated to the contrary elsewhere in this Specification or on the drawings. The unit shall actuate a shunt trip isolator or MCB as specified. The earth leakage units shall comply with SANS 767 and shall carry the SANS Mark to ensure that they comply with Compulsory Specification VC 8035 promulgated in Government Gazette No 10987.

Pilot Lights

Pilot lights are to be either cluster LED, neon, transformer or resistor reduced wattage type. Under no circumstances will 230V pilot lamps, except in the case of neon, be accepted. Care shall be taken to select pilot lights which can be easily seen when operating in normal daylight. Where pilot lights are connected to remote equipment by multi-core control cables

neon lamps shall not be used because of the inductive effect of the control cores. 100% spare lamps are to be provided for all pilot lights.

Unless otherwise specified elsewhere herein, in motor control and other multiple control panels pilot lights are to be controlled by an adjustable timer to limit the duration of operation from 1 to 5 minutes. The timer is to be activated by a suitably labelled push button mounted on the face of the panel. In such cases lamp test facilities, with the test button mounted adjacent to the button described above, must be provided.

Pilot lights are to be of the colours indicated below, unless elsewhere specified.

Power on	-	Amber
Fault	-	Red
Run	-	Green

Pilot lights indicating "STARTER CLOSED" and "OVERLOAD TRIP" shall be fitted to all motor circuits.

Hour Meters

Hour meters shall be of the digital type reading up to 99999 hours. They shall be suitable for 230V, 50Hz. AC operation.

Duty Selector Switches

The control of all items of equipment which can act as standby to each other must include a duty selector switch to enable the lead duty to be selected as well as second and third preference, i.e., 1,2,3; 2,3,1; 3,1,2 for a three-motor system.

Hand/Off/Auto Switches

A hand/off/auto switch shall be fitted to each starter subject to automatic Control. The hand control circuit, which shall comprise stop-start push button, shall be fed from a fuse other than that for the automatic control system.

Phase Failure Relays

All phase failure relays are to provide reverse phase rotation protection. The relay is to operate a shunt trip coil in an on-load isolator to be provided to disconnect all but non-motor load feeders from the board, or in the control circuit, as indicated on the schematic diagram. The relay is to be so arranged with a timer that it will only initiate a trip upon a single-phase condition occurring and not upon restoration of power. Provision is to be made to ensure that a trip occurs irrespective of which phase is lost.

Relays

All relays and timing relays are to be of Sprecher and Schuh, Telemecanique, Klockner-moeller, or approved equivalent manufacture. Each relay is to be numbered and this number must appear on both relay and adjacent to its respective base in the case of the plug-in type. All adjustable timing relays must be labelled with their function.

Photo-electric Controls

Photo-electric switches shall be of the type comprising a photosensitive resistor, thermal actuator with an inherent operating delay to make it insensitive to short duration changes in light levels and a changeover switch mechanism, all housed within a tough, translucent, weather and ultraviolet resistant cover. The operating level shall be factory pre-set to switch on at approximately 50 lux and off at approximately 100 lux. The response time after sudden changes in light level shall be not less than 15 seconds.

Integral protection against voltage surges shall be provided.

A suitable unit would be the "National" type ZS-20AR.

Main and Control Circuits

All control equipment shall be Mounted in a separate hinged panel fitted with square key latches to permit ease of access to terminals, etc., at the rear of the panel. Where busbars are located directly behind such panels, a separate removable insulated panel shall screen them.

All wiring shall be carried out using suitably rated, colour coded insulated wire. Internal wiring to and from contactors shall be sized according to the contactor manufacture's recommendation for the duty selected.

All main terminals are to be connected in strict phase rotation. Wires shall not be joined between terminal points and no terminal shall have more than two wires connected to it unless they are lugged connections. Spare terminals are to be provided to accommodate all spare control cable cores. All terminals shall be either bolted or screwed. All terminals for wires smaller than 16mm² shall have pressure plates. All terminals for the connection of external control wiring shall be of the "disconnect" type.

All terminations shall be fitted with numbered ferrules, the numbers corresponding to those on the appropriate wiring diagrams to be prepared by the board manufacturer. All terminal strips are to be similarly numbered.

Generally, wiring shall be enclosed in strategically placed plastic wireways. Small numbers of wires to remote positions may be neatly strapped, using plastic buckle clips or hard plastic "loom formers". Where wiring is run to equipment mounted on hinged doors, the wiring shall be carried in a plastic "loom former" which is so installed that the wiring is not strained with the door fully open.

The colour of all panel wiring shall comply with the following: -

Colour of wire Circuit Particulars

Red, White and Blue Phase connections in current and voltage transformer circuits and in all three phase circuits.

Green/yellow bicolour Insulated earth wires.

Black Neutral connections.

Grey Control connections.

White Connections in DC alarm circuits.

All control circuits shall have 5A HRC fuse protection.

Labelling

All control equipment both within the panel as well as all projecting items, are to be labelled in accordance with the Clause "rebels and Notices" elsewhere in this Part. Any device which can be unplugged is to be label at the base and on the device.

2.34. LABELS AND NOTICES

The Contractor shall arrange for the labelling of all equipment, instruments, meters, relays, cables, etc., as indicated below.

Where identical items of equipment can be removed from their housings, e.g., circuit breaker carriages, plug-in relays etc., both the fixed and with drawable portions are to be labelled identically.

All labels shall be ivorine or other back engraved white on black labels of the sizes indicated.

They are to be in purpose made holders or otherwise are to be screwed or riveted into position. "Dymo" tape or similar labels will not be accepted nor will labels which are glued in position only.

Labels on poles shall comprise an aluminium plate with the designated number. These labels shall be nailed to the pole 1,5m above ground level. Nails shall be electro-galvanized clout nails.

Prior to any equipment being labelled, the Contractor shall request the Engineer to provide a complete labelling schedule for all items of equipment. Under no circumstances is equipment to be labelled in accordance with the tender drawings since any description thereon is for identification purposes during construction only and is unlikely to apply to the completed Works.

The following list indicates the general labelling requirements but does not limit the extent of labelling required, which shall encompass the full extent of the equipment supplied, or in the case of existing equipment, any such which is affected by this Contract.

50mm high lettering: -

Substation and minisub designation.

Outdoor switchgear designation.

Transformer designation.

Distribution kiosk and fused feeder panel designation.

20mm high lettering: -

Main or sub-main board designation.

Control panel designation.

Indoor switchgear designation.

10mm high lettering: -

Individual switches on switchgear.

Cubicles.

Sub-distribution board designation.

Poles for OH lines.

5mm high lettering: -

Minisub feeder breakers and isolators.

Distribution kiosk feeder breakers and isolators.

General distribution switchgear.

Meters, instruments and relays.

Multiplying factors.

3mm high lettering: -

This size shall be used to designate the conductor size and number of cores of each cable installed under this Contract. In addition, all feeder cables shall be labelled to state from whence they are fed.

All switchboards shall be provided with a label in both official languages reading "In case of leakage or accidental contact, put off main switch immediately".

All substations, mini-subs, kiosks, transformer rooms and switch rooms shall be provided with notices as required by the Occupational Health and Safety Act. All doors to such locations shall be fitted with the appropriate notices. In the case of mini subs, these shall comprise at least two 190mm x 190mm design WW7 in accordance with SANS 1186 externally and $H^V/_S$ and $L^V/_S$ respectively on the inside of all doors, while kiosk doors shall meet the LV requirements only. For all other substations, enclosures etc: "Kontra" Safety Signs as supplied by Mine Safety Appliances or approved equivalent are to be provided, Nos. KM115 and K0711 being used externally and KM112, K0706 and K0710 internally. Where more than one similar item of equipment is fed from the same board or control panel, the item itself shall be labelled, this being fixed in a permanent position, i.e., not attached to motors, pumps etc., but to bases or adjacent thereto. The lettering shall be 50mm high.

2.35. DISMANTLING

Where dismantling of existing parts of the installation is called for, all components including wire, insulators, poles, cable, switchgear, transformers, etc., are to be removed and handed to the Appropriate Authority. Under no circumstances is any material or equipment to be taken over by the Contractor. In the case of reclamation of conductor, this is to be done after removing the binding wires on intermediate insulators so that full strain lengths are recovered. All such material is to be neatly coiled, packed, etc., as appropriate.

Extreme care is to be taken in dismantling all such equipment, since it will be re-used by the Employer. If, in the opinion of the Engineer, unnecessary damage is done, the cost of replacing such equipment will be debited to the Contractor's account.

A receipt detailing all equipment and materials delivered in accordance with the above must be obtained and a copy submitted to the Engineer.

2.36. EARTHING OF INSTALLATIONS

Installations shall be effectively earthed in accordance with the "Standard Regulations" and to the requirements of the supply authority, as well as the Engineer who may require additional earthing to meet test standards. Earthing must comply with SANS 10142.

All hot and cold water as well as waste pipes must be effectively bonded by 12, 5 x 1, 6mm solid or perforated copper tape (not wire) clamped by means of brass bolts and nuts. The tape is to be fixed to walls by means of roundhead brass screws at intervals not exceeding 150mm.

The earth connection from the main earth bar in the main board must be made to the cold water main and the incoming service earth conductor by means of 16mm^2 stranded (not solid) bare copper earth wire or such conductor as the Engineer may direct. Where applicable all steel roof sheeting as well as steel walkways and stairs shall be suitably earthed.

Furthermore, an earth electrode (earth spike) of at least 1.5m long must be provided and driven into the ground at the centre of each gable-end wall of each individual block. These earth electrodes shall be installed at least 1m from the building's perimeter and shall clear all aprons and water channels. These earth spikes must be driven into the ground to at least 300mm below ground level and only after final bonding and tests have been carried out must proper backfilling and compacting of same be executed.

In each instance these earth spikes must be interconnected by means of a 16mm 5 stranded bare copper earth conductor which must be installed in the inside of the ridging of the roof structure, encased in 20 mm flush conduits installed in the gable walls. This earth conductor must be bonded to the roof sheeting at intervals not exceeding 5 m, ensuring that roof sheeting on both sides of the ridging is properly bonded, as specified in Clause 11 of Part 1.

The overall earth resistance at the main distribution board Distribution Boards shall not exceed 1 Ohm. The contractor shall assess the soil and site conditions at the time of tendering and allow for this to enable him to perform the proper earthing and bonding of all installations.

2.37. **INSPECTION, TESTING AND COMMISSIONING**

The Engineer shall have access at all reasonable times to such parts of the Works or the Contractor's premises or the premises of the manufacturer of component parts; as may be necessary for the purpose of inspecting, examining and testing the materials, workmanship and performance of any plant or equipment specified for the Works.

The Contractor shall ensure that all equipment such as switchboards, transformers, minisubs, kiosks, etc., are inspected and tested at the manufacturer's premises, in the presence of the Engineer.

All wiring is to be subjected to a test voltage of 2kV for one minute without insulation failure. A Megger test is to be applied with a 500v instrument immediately thereafter to prove the insulation resistance better than 20 megohms. All meters are to be injection tested to ensure correct operation. All control circuits including motor overloads, relays, etc., are to be operated to ensure the correct functioning of the entire control system.

All equipment necessary to enable the tests to be carried out shall be provided and shall include, inter alia:

Phase rotation meter	500A primary injection test set
Avometer	25A secondary injection test set
500V	2kV DC test set

After completion of manufacture, the following test certificates, signed by the Contractor and the firm executing the tests, shall be provided in duplicate:

Transformer test certificate to SANS.

Test certificate stating that all LV switchboards and control boards have been inspected and their wiring subjected to 2000V DC for 1 minute.

Test certificate stating that all HV switchboards have been inspected and their internal wiring subjected to 2000V DC for 1 minute and HV components to the appropriate voltage as laid down in the applicable SANS or BS Specification.

Any other test certificate for routine tests as laid down in relevant SANS or BS Specification or Codes of Practice applicable to the item in question.

Test certificate in respect of any special tests called for elsewhere herein.

The Contractor shall arrange for any Statutory Government and/or Supply Authority inspection of the installation prior to testing and final commissioning by the Engineer.

On completion of the entire installation or any section thereof, as may be decided by the Engineer, commissioning shall be carried out by the Contractor, and any tests the Engineer deems necessary shall be conducted. The Contractor shall supply all equipment necessary for the testing and commissioning procedures.

Prior to commissioning of any transformer, the oil shall be tested and, if necessary, shall be dried out by the Contractor. Should this be necessary, the Engineer must be advised that it is suspected the transformer is damp before any work is undertaken. Transformer wheels shall be solidly chocked. No transformer shall be commissioned without the consent of the Engineer.

During commissioning, all tap change switches are to be correctly set and locked. All wedges and packing in switches and relays shall be removed and each switch and each relay circuit operated.

All protection and small wiring shall be tested with a 500V megger and injection currents passed through the secondaries of every circuit to check the proper operation of relays, instruments, and protection.

The Contractor shall supply all equipment necessary for the testing and commissioning procedures. The test equipment required at Site shall include, inter alia:

Phase rotation meter

Suitable cable test set

11 000V phasing sticks

500V megger

Signature of the 5 000V megger

Avometer

Earth resistance test set

25A secondary injection test set

After completion of the commissioning tests the Contractor shall provide duplicate test certificates relating to cable tests, current injection tests of all instruments, meters and relays and results of earth mat tests.

The Contractor shall give the Engineer at least 14 days' notice of the date of any testing or commissioning so that he may be present if he so wishes. Where the Engineer does not himself, or through his representative, attend to witness the tests, then the Contractor may proceed with the test, duly forwarding to the Engineer certified copies of the results obtained. In such cases, the test shall be deemed to have been made in the presence of the Engineer.

In the event of the equipment or installation not passing the tests, the Employer shall be at liberty to deduct from the Contract Price, all reasonable expense incurred by him or by the Engineer in repeating the tests.

2.38. COMPLETION OF WORKS

Before completion of the Contract any damage which may have been done in the process of the installation shall be repaired and made good, trench or excavation work shall be left in a clean and tidy state and all accumulated debris shall be removed from the Site by the Contractor to the satisfaction of the Employer and Engineer.

All defects found are to be rectified within one month of written notice of such defects. A penultimate certificate reducing the retention amount to that stated elsewhere in this Specification will only be issued upon submission of As Built Drawings and Operating Manuals as called for elsewhere herein, after completion of all notified defects, and once all test certificates called for in the Clause "Inspection, Testing and Commissioning" elsewhere in this Part have been submitted and accepted by the Engineer.

An appropriate Certificate shall acknowledge practical completion of the Works and the commencement of the period during which the Contractor will be responsible for any defects that may become apparent, and of Maintenance as detailed under the Clause "Maintenance" in Section A of this Part, where applicable.

The Contract will not be deemed to be finally complete until the Engineer's final payment certificate is issued.

3.4.5: MODEL PREAMBLES FOR TRADES 2008

The Model Preambles for Trades 2008 must be used for the project specification for the building works.

C3.5 Management

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3.5.1. FORMS FOR CONTRACT ADMINISTRATION
3.5.2. HEALTH AND SAFETY

3.5.1. FORMS FOR CONTRACT ADMINISTRATION

The Contractor shall complete, sign and submit with each monthly statement for payment, the following updated returns (the format of which are attached in C3.6 Annexes as amended from time to time):

a) Monthly Project Labour Report (Annex 1)
b) B-BBEE Sub-contract Expenditure Report (Annex 2)
c) Joint Venture Expenditure Report (Annex 3)

The Monthly Project Labour Report must include details of all labour (including that of sub-contractors) that are South African citizens earning less than **R350.00** per day, as adjusted from time to time (excluding any benefits), who are employed on a temporary or contract basis on this contract in the month in question.

In addition to the Monthly Project Labour Report the Contractor shall simultaneously furnish the Employer's Agent with copies of the signed employment contracts entered into with such labour, together with certified copies of identification documents, proof of attendance in the form of attendance register or timesheets as well as evidence of payments to such labour in the form of copies of payslips or payroll runs. If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it and proof of such acknowledgement shall be furnished to the Employer's Agent.

The Monthly Project Labour Reports shall be completed and submitted in accordance with the instructions therein and copies of all submitted documents must be kept on site be made available to the employer's agent upon request.

The **B-BBEE Sub-contract Expenditure Report** is required for monitoring the prime contactor's compliance with the sub-contracting conditions of the **Preference Schedule**.

The Joint Venture Expenditure Report is required for monitoring the joint venture's compliance with the percentage contributions of the JV partners as tendered, where the joint venture has been awarded preference points in respect of its consolidated B-BBEE scorecard.

The Expenditure Reports shall be verified by the Employer's Agent/Employer's Agent's Representative.

In respect of Annexes 2 and 3, the Employer shall, in addition to any other sanctions available to it, apply the financial penalties applicable to breach of preferencing conditions in the **Preference Schedule** Preference Schedule in Part T2.2 Returnable Schedules. In the case of joint ventures (Annex 3), the contractor shall prove his compliance with item 6 in Section 2 of the Preference Schedule by providing a consolidated scorecard at his own cost on instruction from the Employer's Agent.

3.5.2. HEALTH AND SAFETY

Particular Specification C6: Health and Safety Specification is attached hereto.

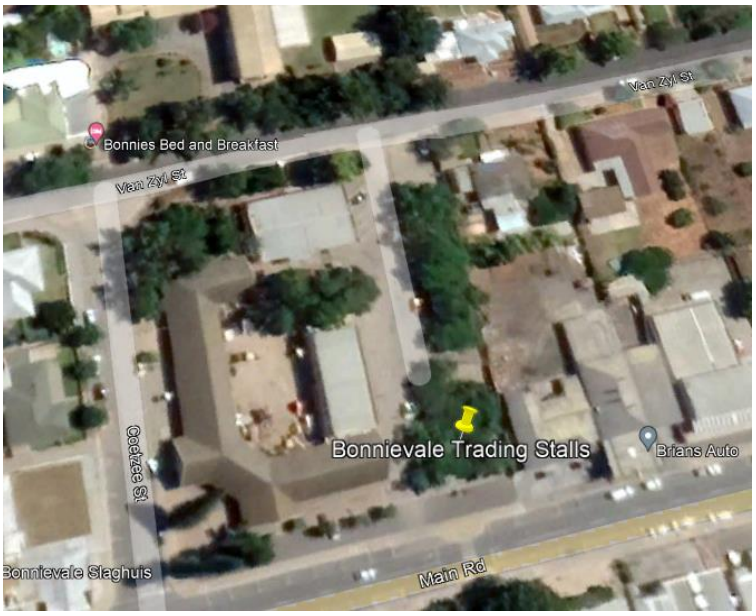
Part C4: Site Information

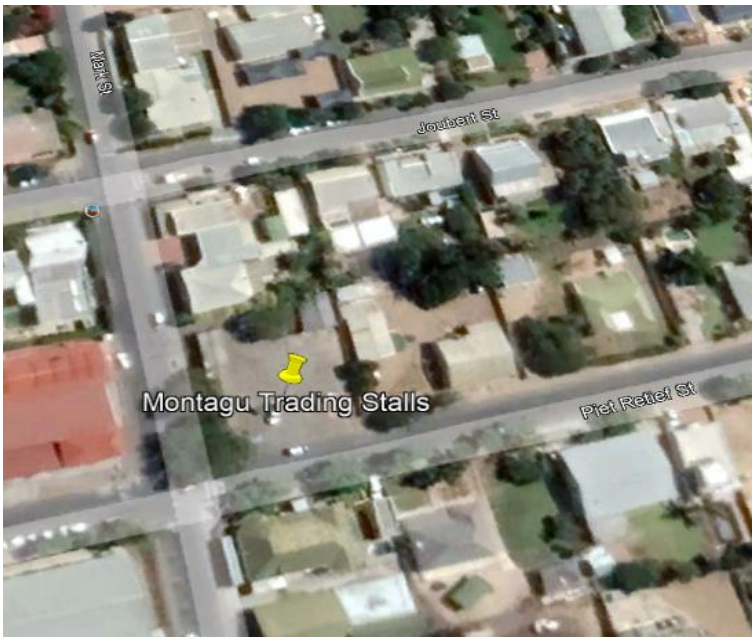
PART C4: SITE INFORMATION 200

LANGEBERG MUNICIPALITY

TENDER NO. T22/2022

CONSTRUCTION AND UPGRADING OF INFORMAL TRADING AREAS, BONNIEVALE AND MONTAGU





LOCALITY PLAN

The coordinates below can be used for directions to the sites.

Bonnievale Stalls **20° 6'5.94"E** **33°56'22.30"S**	**Montagu Stalls** **20° 7'31.59"E** **33°47'6.36"S**

Part C5: LANGEBERG Municipality Supply Chain Policy

PART C5: LANGEBERG MUNICIPALITY SUPPLY CHAIN POLICY 202

(This document will be made available electronically by UDS Africa to all tenderers present at the compulsory Site Clarification Meeting. The Supply Chain Policy can also be obtained from https://www.langeberg.gov.za)

Part C6: Health and Safety Specifications

PART C6: HEALTH AND SAFETY SPECIFICATIONS 203

Project Health and Safety Specification

In terms of Construction Regulations 2014

Project Client

Langeberg Municipality

Description of Project Works

Construction of Trading Stalls

Project Location

Montagu & Bonnievale

Preparation Date

April 2022

Project Health and Safety Specification developed by:

Safe Working Practice Worcester
Tel: 023 342 0332
Cell: 082 323 3911
Email: johnm@safepractice.co.za

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1.0 SPECIFIC PROJECT INFORMATION

1. *1 INTRODUCTION AND DEFINITIONS*

THE REQUIREMENTS OF THE CONSTRUCTION REGULATIONS 2014 (AND GUIDANCE NOTES OF 2017) HAVE BEEN IN EFFECT SINCE 7TH AUGUST 2014. THE REGULATIONS PLACE LEGAL DUTIES UPON PRINCIPAL CONTRACTORS AND CONTRACTORS. ALTHOUGH THIS HEALTH AND SAFETY SPECIFICATION INCLUDES MUCH OF THE CONTENT OF THE REGULATIONS, THE CONTRACTOR WILL BE DEEMED TO BE FAMILIAR WITH THE REQUIREMENTS OF THESE REGULATIONS, AND OTHER ASSOCIATED HEALTH AND SAFETY REGULATIONS, AND TO HAVE FACTORED IN ALL THE DUTIES PLACED UPON CONTRACTORS AND PRINCIPAL CONTRACTORS IN THE TENDER. A COPY OF THE REGULATIONS CAN BE VIEWED ON THE DEPARTMENT OF LABOUR'S WEBSITE.

PLEASE NOTE THAT THE TERMS "CONTRACTOR" AND "PRINCIPAL CONTRACTOR" HAVE THE SAME MEANING AS THAT IN THE CONSTRUCTION REGULATIONS AND ARE USED INTERCHANGEABLY IN THIS DOCUMENT, I.E., REFERENCES TO "CONTRACTOR" REFER TO PRINCIPAL CONTRACTOR AND/OR CONTRACTOR AS THE REGULATIONS PERTAIN TO THEIR FUNCTIONS.

This Health and Safety Specification contains clauses that are generally applicable to construction activities, as well as imposing pro-active controls associated with activities that impact on Health and Safety as it relates to work on site. Compliance to the requirements of the Occupational Health and Safety Act 1993 is an additional requirement of this Health and Safety Specification and is part of the Contractor's responsibility. The Client, and/or their agents, will monitor that all Contractors comply with the requirements of such legislation.

ALL REFERENCES TO CLIENT IN THIS HEALTH AND SAFETY SPECIFICATION ALSO REFER TO SAFETY AGENT, WHERE SO APPOINTED.

Definitions (as per the Construction Regulations 2014) applicable to this Health and Safety Specification:

"agent" means a competent person who acts as a representative for a Client;

"angle of repose" means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on the surface, rather than sliding or crumbling away;

"bulk mixing plant" means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work;

"client" means any person for whom construction work is being performed;

"competent person" means a person who has, in respect of the work or task to be performed, the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act;

"construction manager" 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 -

- the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
- 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;

"contractor" means an employer who performs construction work;

Note:
a) Includes organisations and or self-employed person that contracts with a client, principal contractor, or a contractor to carry out construction work.

"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;

"design" in relation to any structure, includes drawings, calculations, design details and specifications;

"designer" means a competent person who-

- prepares a design;
- checks and approves a design;
- arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
- designs temporary work, including its components;
- an architect or engineer contributing to, or having overall responsibility for a design;
- a building services engineer designing details for fixed plant;
- a surveyor specifying articles or drawing up specifications;
- a contractor carrying out design work as part of a design and building project; or
- an interior designer, shopfitter, or landscape architect;

"ergonomics" means the scientific discipline concerned with the fundamental understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data, and methods to design in order to optimise human well-being and overall system performance;

"excavation work" means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;

"explosive actuated fastening device" means a tool that is activated by an explosive charge and that is used for driving bolts, nails, and similar objects for the purpose of providing fixing;
"fall arrest equipment" means equipment used to arrest a person in a fall, including personal equipment, a body harness, lanyards, deceleration devices, lifelines, or similar equipment;

"falsework" means a combined system of formwork and support work;

"formwork" means temporary or permanent shutters used to form wet concrete into elements of a structure, and includes both horizontally and vertically placed shutters;

"fall prevention equipment" means equipment used to prevent persons from falling from a fall risk position, including personal equipment, a body harness, lanyards, lifelines or physical equipment such as guard-rails, screens, barricades, anchorages or similar equipment;
"fall protection plan" means a documented plan, which includes and provides for -

- all risks relating to working from a fall risk position, considering the nature of work undertaken;
- the procedures and methods to be applied in order to eliminate the risk of falling; and
- a rescue plan and procedures;

"fall risk" means any potential exposure to falling either from, off or into;
"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;
"material hoist" means a hoist used to lower or raise material and equipment, excluding passengers;

"medical certificate of fitness" means a certificate contemplated in regulation 7(8);

"mobile plant" means any machinery, appliance or other similar device that is able to move independently, and is used for the purpose of performing construction work on a construction site;

"National Building Regulations" means the National Building Regulations made under the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and promulgated by Government Notice No. R. 2378 of 30 July 1990, as amended by Government Notices No's R. 432 of 8 March 1991, R. 919 of 30 July 1999 and R. 547 of 30 May 2008;

"person day" means one normal working shift of carrying out construction work by a person on a construction site;

"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);

"Professional Technologist" means a person holding registration as a Professional Engineering Technologist in terms of the Engineering Profession Act, 2000;

"provincial director" means the provincial director as defined in regulation 1 of the General Administrative Regulations, 2003;

"scaffold" means a temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;

"shoring" means a system used to support the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation;

"structure" means:
- any building, steel, or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, bulk mixing plant, pylon, surface and underground tanks, earth retaining structure, or any structure designed to preserve or alter any natural feature, and any other similar structure;
- any falsework, scaffold or other structure designed or used to provide support or means of access during construction work; or
- any fixed plant in respect of construction work which includes installation, commissioning, decommissioning, or dismantling and where any construction work involves a risk of a person falling;

"support work" means the temporary structure erected to support the formwork before the casting of a concrete element of a structure.

"suspended platform" means a working platform suspended from supports by means of one or more separate ropes from each support;

"temporary works" means any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction work;

"the Act" means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

"tunnelling" means the construction of any tunnel beneath the natural surface of the earth for a purpose other than the searching for or winning of a mineral.

(i) Reference should be made to the following documentation in conjunction with this Safety Specification (including existing surveys, drawings, and reports):

IMPORTANT NOTE:
This Health and Safety Specification has been prepared to comply with the requirements of the Construction Regulations 2014.

Tender documents Drawings

1.2 BACKGROUND TO THE HEALTH AND SAFETY SPECIFICATION

Historically, the Construction Industry has had a poor health and safety record. Due to the complex and potentially dangerous operations being undertaken, there is a high risk of incidents, accidents, and injuries. In many instances poor adherence to the Act and Regulations has resulted in severe consequences for Health and Safety performance. The Client is determined that the highest Health and Safety standards will prevail throughout the Contract and that there will be full commitment from all parties involved.

To achieve this goal the Client has arranged for the preparation of this Health and Safety Specification. The Health and Safety Specification sets out guidelines and minimum levels of awareness and guidance for Health and Safety requirements for the project. Contractual responsibility for adhering to these requirements rests with the Contractors. All employees are encouraged to be pro-active in compliance.

The Client is committed to ensuring the highest Health and Safety standards for all work undertaken within the Contract.

Contractors as employers are fully responsible and accountable for compliance with all Health and Safety requirements.

IMPORTANT NOTE:

Compliance with the Occupational Health and Safety Act and Regulations shall not be limited to this Health and Safety Specification and definitions contained in this document.

Contractors shall be conversant with the requirements and effects of Health and Safety legislation upon their activities, in particular the Construction Regulations, 2014, and the Occupational Health and Safety Act, 1993, and to have made adequate resource in their tender submission to comply with all legislative requirements.

Failure to comply with the requirements of this Safety Specification will result in severe sanction and the severity of the sanction will depend on the severity of the non-compliance.

The Contractor's personnel will be responsible for the auditing of the implementation of the Health and Safety Specification and maintaining the document control and record systems associated with the Health and Safety Specification. The Client will arrange for Health and Safety audits to be conducted on site on their behalf to monitor health and safety compliance by contractors.

1.3 PURPOSE OF THE HEALTH AND SAFETY SPECIFICATION

The purpose of this site-specific Health and Safety Specification is to comply with legal requirements and to provide health and safety information about specific project risks known by the Client, Designer and Safety Agent to be applicable to this project. This document also provides minimum health and safety requirements, standards, and expectations that the contractor must adhere to.

The Contractor must take into account all information in this specification and ensure that their tenders include adequate resource and competence to deal with the matters detailed herein so that all relevant contents are

dealt with in a way which is in compliance with legislation and the ethical concerns for the safeguarding of employees, contractors and other persons affected by the construction activities. Please note that a detailed OHS bill of quantities must be provided by the contractor on all Construction Work Permit projects. The Bill of Quantities will form part of the Construction Work Permit application presented to Department of Labour for approval.

The Health and Safety Specification will be implemented during construction of the works and any construction activity that the Client has control over.

This will also assist in ensuring that all the costs related to the compliance with Occupational Health Act 85 of 1993 and the Construction Regulations 2014, as well as this Health and Safety Specification, are taken into consideration at Tender stage.

No advice, approval of any document required by the Health and Safety Specification such as hazard identification and risk assessment action plans or any other form shall be construed as an acceptance by the Client of any obligation that absolves the Contractor from achieving the required level of performance and compliance with legal requirements.

Further, there is no acceptance of liability by the Client which may result from the Contractor failing to comply with the Health and Safety Specification unless the Client has issued an instruction to any requirement, i.e., the Contractor remains responsible for achieving the required performance levels.

1.4 IMPLEMENTATION OF THE HEALTH AND SAFETY SPECIFICATION

This Health and Safety Specification forms an integral part of the Contract, and Contractors shall make it an integral part of their Contracts with other Contractors and Suppliers. Contractors employed by the Client are to ensure that the provisions of the Health and Safety Specification are applied both on the site and in respect of all off site activities relating to the project, in particular in transport activities and project dedicated off site fabrication works.

The Contractor shall enforce the provisions of the Health and Safety Specification amongst all Contractors and suppliers for the project.

The Contractor shall sign the acknowledgement on the last page of this safety specification that he/she has familiarised him/herself with the content of the Health and Safety Specification and shall comply with all obligations in respect thereof.

The successful Contractor will be required to compile a Health and Safety Plan based on the requirements of the Occupational Health Act 85 of 1993 and these Specifications, which will need to be approved by Client (or their appointed safety agent) prior to commencement with construction work.

1.4.1 Client Duties

In terms of the Construction Regulations 2014 the Client (or their Agent, where appointed) has legal duties. Where an Agent (refer to "definitions" section of this document) is appointed in terms of this project, these Health and Safety duties assigned will also apply.

All references to "Client" will apply to their appointed "Safety Agent", where so appointed, in this Health and Safety Specification.

The Client must:

- Prepare a baseline risk assessment for the construction work
- Prepare a suitable, sufficiently documented, and coherent site-specific Health and Safety specification for the intended construction work, based on the baseline risk assessment
- Include the health and safety specification in the tender documents
- Ensure that potential principal contractors submitting tenders have made adequate provision for the cost of health and safety measures

- Ensure that the principal contractor to be appointed has the necessary competencies and resources to carry out the construction work safely
- Take reasonable steps to ensure co-operation between all contractors appointed by the Client to enable each of those contractors to comply with the regulations
- Ensure, before work commences, that every principal contractor is registered and in good standing with the compensation fund, or with a licensed compensation insurer as contemplated in the Compensation for Occupational injuries and Diseases Act, 1993 (Act no 130 of 1993)
- Appoint each principal contractor in writing for the project, or part thereof
- Discuss and negotiate with the principal contractor the contents of the principal contractor's safety plan and thereafter finally approve that plan for implementation
- Ensure that a copy of the principal contractor's health and safety plan is implemented and maintained
- Ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days
- Ensure that a copy of the health and safety audit report is provided to the principal contractor within 7 days after the audit
- Stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the principal contractor's health and safety plan for site
- Where changes are brought about to the design or construction work, make sufficient health and safety information and appropriate resources available to the principal contractor to execute the work safely
- Ensure that the health and safety file is kept and maintained by the principal contractor.
- Where the Client requires additional work to be performed as a result of a design change or error in construction due to the actions of the Client, the Client must ensure that sufficient safety information and appropriate additional resources are available to execute the required work safely.
- Where more than one principal contractor is appointed, the Client must take reasonable steps to ensure co-operation between all principal contractors and contractors to ensure compliance with the Regulations
- Where the Client has appointed a Safety Agent for the project, their details for this project are contained in the Project Directory section of this health and safety specification.

1.4.2 Designer Duties

It must be noted that the Designer also has Health and Safety duties assigned in terms of the Construction Regulations. Where the contractor fulfils a design function in terms of this project (refer to "definitions" section of this document), these duties will also apply. Please refer to Regulation 6 of the Construction Regulations 2014.

Please note that the designer of temporary works must ensure that:

- all temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- the designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
- all drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- the loads caused by the temporary works and any imposed loads are clearly indicated in the design.

1.5 PROJECT DIRECTORY		
Project Client **Contact Person**	Langeberg Municipality 52 Church Street Robertson	**Tel:** 023 626 8200 **e-mail:** cposthumus@langeberg.gov.za **Cell:** 083 233 9308
Project Manager **Contact Person**	UDS Africa Time Square Building 9 Electron Street Techno Park, Stellenbosch Ruaan Siebrits	**Tel:** 021 880 0443 **e-mail:** ruaan@udsafrica.co.za **Cell:** 072 651 9568
Consulting Engineer **Contact Person**	UDS Africa Time Square Building 9 Electron Street Techno Park, Stellenbosch Ruaan Siebrits	**Tel:** 021 880 0443 **e-mail:** ruaan@udsafrica.co.za **Cell:** 072 651 9568
Architect **Contact Person**	Mount Moriah Architects 31 Hope Street Robertson Louis Delgado	**Tel:** n/a **e-mail:** louis@mountmoriah.co.za **Cell:** 082 410 7463
Construction Safety Agent **Contact Person**	Safe Working Practice Worcester 14B Bergsig Avenue Worcester West 6850 John McGregor	**Tel:** 023 342 0332 **e-mail:** johnm@safepractice.co.za **Cell:** 082 323 3911
Other Pertinent Parties to the project **Contact Person**	N/A	

OTHER PARTIES DIRECTORY	
Department of Labour for submission of Annexure 2: Notification of Construction Work WESTERN CAPE – Fezeka Ngalo **Department of Labour** 90A Durban Street, Worcester	**Tel:** 021 441 8158 **e-mail:** fezeka.ngalo@labour.gov.za **Tel:** 023 346 5200 **e-mail:** Khayalethu.Songelwa@labour.gov.za
(b) Telecommunications Contractor to refer all queries on location and nature of existing services to the Project Manager / Client, etc. **OR** Contractor to apply for and refer to wayleave information from service providers for the nature and location of services. Refer all queries Project Manager. **Company:** Telkom **Contact Name:** unknown	**Company Tel:** 10210
(c) Water **Company:** Langeberg Municipality **Contact Name:** Maynard Johnson	**Company Tel:** 023 626 8200
(d) Electricity **Company:** Langeberg Municipality **Contact Name:** Chris Vorster	**Company Tel:** 023 626 8200
(e) COVID-19 Hotlines	**Tel:** 0800 029 999
(f)	
(g) National Corona-virus Hotline	**Tel:** 021 928 4102
(h) Provincial Corona-virus Hotline	

1.6 PROJECT DETAILS

Description of Works

This description of the works is not necessarily complete and shall not limit the work to be carried out by the Contractor under this Contract. *Construction of trading stalls in Montagu & Bonnievale. Works include civil works, erection of steel structures, building of stalls & toilets, extension of roofs, plumbing, repair of potholes using asphalt and / or slurry.*

Anticipated Construction Duration
3 months

Provisional Start Date
August 2022

Provisional Completion Date
November 2022

Construction Work Permit Required for the Project?
No

1.7 EXISTING ENVIRONMENT

Hazards particular to this project by virtue of location:
Members of the public, by means of pedestrians and vehicular traffic
Trees
Montagu: asbestos roof on an existing building, which must not be disturbed

Overhead, Above Ground and Underground Services crossing the site:

Overhead: Electricity, Telephone

Underground: Water, Storm Water, Sewage

Ground level: Roads, Pavements

Service Drawings available: Refer to Engineer

Wayleaves required: Yes

Permits required: Refer to Client

Isolations required: Yes, for electrical connections

Existing structures on site and surrounding land use (with a significant impact on Health & Safety):
Asbestos – existing building in Montagu
Commercial properties; loading & parking areas.
Offices

Existing ground conditions and ground survey report:
Level, tarred surfaces

1.8 AVAILABLE DRAWINGS

Refer to tender documentation.

1.9 PROJECT HEALTH AND SAFETY REQUIREMENTS

Significant health and safety hazards identified by Client, Designer and Safety Agent:

Asbestos
Excavations
Fire
Flammable Liquids / Gas
Hazardous Substances
Hot Works
Members of Public
Overhead Services (Working near)
Snakes
Underground Services
Working at Height
Working with Effluent

Other construction hazards that the contractor can reasonably expect are as follows:

Asphalting
Bricklaying
Chainsaw Use
Compacting and Filling
Compactor Operations
Cutting Kerbs
Cutting Off Disc
Electric Tools and Electrical Installations
Hand tools
Kerb Laying
Lifting Operations
Manual Handling of General Items
Material / Passenger Hoist Operation
Mobile Crane
Noise and Dust
Painting
Plant/Vehicle and Equipment Operation
Plastering
Plumbing
Scaffold Erection / Dismantling
Steel Erection
Steel Fixing
Tower Scaffold
Working at Height (excluding scaffold)

NOTE: Please refer to end of this Health and Safety Specification for the baseline risk assessment for these hazards and risks.

ACTIVITIES REQUIRING APPROVED METHOD STATEMENTS
Site establishment
ACTIVITIES REQUIRING PERMITS (FOR HEALTH AND SAFETY PURPOSES)
Permit to Dig: N/A **Permit to Enter Excavations:** N/A **Road Works Permit:** N/A **Permit to Work with Electricity:** N/A **Confined Space Permit:** N/A **Hot Works Permit:** N/A **Permit to Work under Power Lines:** N/A **Blasting:** N/A **Client issued permit for work in restricted areas:** N/A **Temporary Works:** N/A
CONTRACTOR SAFETY OFFICER PROVISION Records of safety audits undertaken by the Contractor's Safety Officer must be kept on site in the safety file and non-conformances reported by the Safety Officer to the Contractor's management team. All non-conformances identified by the Safety Officer and Client's Safety Agent must be investigated and corrective action taken by the Contractor to prevent re-occurrence. Please note that as from 7th August 2018 the safety officer must be professionally registered with the SACPCMP. Proof of registration with the SACPCMP must be provided. If registered as a Candidate proof of mentorship and weekly visits by mentor must be available on site. The requirement for this site is that a full time / part time Safety Officer be appointed by the Contractor. ***Part time Safety Officer must visit the site at least fortnightly.***
MEDICAL CERTIFICATE OF FITNESS (ANNEXURE 3) The contractor must ensure that their employees on site have a valid medical certificate of fitness, specific to the construction work being performed, issued by an occupational health practitioner in the form of an Annexure 3 template.
MANAGEMENT AND SUPERVISION OF CONSTRUCTION WORK A principal contractor must, in writing, appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate competent person must be appointed by the principal contractor. Proof of an all-inclusive assessment by the Principal Contractor of the Construction Manager's Competency in construction management and health and safety competency must be available in the Safety File. The Construction Manager, Alternate Construction Managers, Assistant Construction Managers, and designated construction supervisor/s must, as a minimum, have training in Legal Liability, Construction Regulation 2014 and the OHS Act and Regulations.
TRAFFIC MANAGEMENT AND TRAFFIC SAFETY OFFICER PROVISION

Where work is to be done close to the edge of the road, measures must be put in place to warn traffic and protect the contractor.

ENVIRONMENTAL CONDITIONS

Contractor must take into account adverse weather conditions on site activities and implement control measures to mitigate risk. This includes risk of exposure to excessive heat, cold, rain, lightning, and wind.

The open nature of the site works will not preclude any of the above.

ARRANGEMENTS FOR ACCESS, PARKING, DELIVERIES, ETC.

Access to site by Construction Vehicles: Municipal roads

Access to site by Construction Workers and Visitors: Municipal roads

All service providers must sign a 37.2 Mandatory Agreement and must be inducted before they can be allowed on site.

ARRANGEMENTS FOR SITE CAMP, ABLUTIONS AND YARD

Site camp location and set up

- **Restrictions / requirements:** }
- **Storage areas:** }
- **Security:** }

} Contractor to advise in consultation with Engineer / Professional Team

Ablutions and Welfare Arrangements

Contractor to supply ablutions and facilities in line with the Construction Regulations 2014, refer to section 2.31 of this health and safety specification regarding the below. Toilets should be provided with built in facilities for hand washing. Please note further that COVID-19 control measures form an important part of ablutions provision on site ref soap and water/hand sanitiser, signage, etc:

- **Toilets:** }
- **Washing facilities:** }
- **Drinking Water:** }
- **Shelter:** }
- **Showers:** }

} Contractor to provide as per Regulations

} Contractor to provide as per Regulations

Mobile site facilities requirements:

A camping toilet/mobile toilet will be required for sites that cannot facilitate a permanent location for ablution units and must be available for each gender per location.

The use of a camping toilet must be prepared and setup correctly with additional anchors and available toiletries prior to each working day and to be first priority when changing location of works along a set working path.

Teams are to ensure that the toilets are cleaned correctly and suitable for easy and hygienic uses and recorded on a daily register.

PROTECTION OF SITE AGAINST UNAUTHORISED ACCESS BY PUBLIC

Excavation Fencing: Note that excavations accessible to public, or adjacent to public roads / thoroughfares, must have (1) barrier / fence of at least 1m in height, and (2) warning illuminants at night or when visibility is poor, or have other suitable precautionary measures if of both these are not practicable.

General Fencing of Site: Note that construction sites in built up areas adjacent to public walkway must be fenced off and have controlled access points with the correct signs to indicate the site office for any relevant enquiries.

Warning Notices: Standard construction warning signage

Look Outs: Not required

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The Client requires the Contractor to ensure that employees (and others under his/her control) wear the following minimum PPE:

Overalls: Yes

Safety Harnesses: When working at heights

Hard Hats: Yes

Reflective Vests: Yes, if overalls doesn't have reflective strips

Goggles / gloves / ear defenders / respiratory protection: As determined by the Contractor's Risk Assessment

Safety Footwear: Yes

Specialist Equipment: As determined by the Contractor's Risk Assessment

Respiratory Protection (i.e. any face mask endorsed by DoEL): Yes

HAZARDOUS SUBSTANCES

The following materials and substances have, or may have, to be used in the works and are identified as potentially posing special health and / or safety hazards during the project. Appropriate measures will need to be specified for their control:
Cement, petrol, diesel, paint, thinners, asphalt, slurry

1.10 INTERFACE AND RESTRICTIONS BY CLIENT

Contractor must note that the following Client activities will continue during construction:
Road traffic, pedestrians

The following Client safety rules and/or requirements are to be observed:
All workers are to receive induction prior to commencement of work on site.
Other safety rules and requirements to be advised at induction.
Please also refer to tender document.

Restrictions on times, access, or other restrictions by Client
Please refer to tender document.
Other restrictions may be advised at induction.

1.11 PROJECT CLOSE OUT

The Health and Safety files for the Principal Contractors and all Contractors require closure and handover to the Client at the completion of the project in the form of a consolidated safety file. The following list is an example of what should be included but is not exhaustive. The Safety Agent or the Client may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are responded to. Documentation would include all health and safety related records from the start of the project. All records to be in hard copy or electronic format and submitted to the Safety Agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.

Consolidated Health and Safety close out file requirements include:

- Health and safety specification (most recent version)
- Principal Contractor's health and safety plan/s
- Site safety organograms
- Legal appointments - All OHS appointments to be cancelled at project completion
- Notification to Department of Labour of commencement of work / Construction Work Permit
- Workman's Compensation Letters of Good Standing for the project
- Full safety files for all contractors as well as their close out reports
- List of all contractors who worked on site
- Letters of safety plan approval of contractors by the Principal Contractor
- Mandatory agreements (section 37.2 agreements)
- Incident and accident records / Occupational Disease records
- Contractor Non-conformance records
- Safety agent's audit reports
- Safety Officer reports
- Method Statements
- Risk assessments
- Safe work procedures
- Medical surveillance certificates of fitness. Medical records are to be kept according to the Occupational Health and Safety Act, as amended.
- All temporary works drawings (suspended beams/scaffolds, etc.)
- Copies of test results, policies, and procedures for environmental monitoring (silica, noise, dusts, etc.)
- Detailed registers of all material used
- Copies of all Checklists completed

1.12 SAFETY FILE RETURN TO CLIENT

The consolidated Health and Safety Files for the Project is to be handed over by the Principal Contractor to the Client upon Project Completion in a hard copy format.

2.0 FURTHER REQUIREMENTS

2.1 Duties of Principal Contractor / Contractor in terms of Construction Regulations 2014

A Principal Contractor must:

• provide and demonstrate to the Client a suitable, sufficiently documented and coherent site-specific health and safety plan, based on the Client's documented health and safety specifications, *which* plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;

• open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the Client, the Client's Safety Agent, or a Contractor; and

• on appointing any other contractor, in order to ensure compliance with the provisions of the Act -

- provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications pertaining to the construction work which has to be performed;

- ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;

- ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;

- ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;

- appoint each contractor in writing for the part of the project on the construction site

- take reasonable steps to ensure that each contractor's health and safety plan is implemented and maintained on the construction site;

- ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;

- stop any contractor from executing construction work which is not in accordance with the Client's health and safety specifications and the principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;

- where changes are brought about to the design and construction, make available sufficient health and safety information and appropriate resources to the contractor to execute the work safely;

- discuss and negotiate with the contractor the contents of their health and safety plan and finally approve that plan for implementation;

- ensure that a copy of both the principal contractor and contractor's health and safety plan is available on request to an employee, an inspector, a contractor, the Client, or the Client's Safety Agent;

- hand over a consolidated health and safety file to the Client upon completion of the construction work, to include a record of all drawings, designs, materials used and other similar information concerning the completed structure;

- in addition to the documentation required in the health and safety file include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done;

- 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.

A contractor must prior to performing any construction work-

- provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the Client's health and safety specification and provided by the principal contractor, which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the contractor as work progresses;

- open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, and which must be made available on request to an inspector, the Client, the Client's Safety Agent or the principal contractor;

- before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;

- co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act;

- as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, any person who might be affected by the work of such a person at work, or which might justify a review of the health and safety plan.

Where a contractor appoints another contractor to perform construction work, the duties that apply to the principal contractor will apply to the contractor as if he or she were the principal contractor.

A principal contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.

No contractor may allow or permit any employee or person to enter any site unless that employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the Client, the Client's Safety Agent or the Principal Contractor.

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 (a template of which can be found in the Construction Regulations, 2014).

2.2 *Management and Supervision of Construction Work*

A principal contractor must, in writing, appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring

occupational health and safety compliance, and in the absence of the construction manager an alternate must be appointed by the principal contractor. Proof of all-inclusive assessment of the Construction Manager's Competency in construction management and H & S competency must be available in the Safety File. The Construction Manager must, as a minimum, have a Construction Regulation course. No contractors may be left unsupervised on site by the principal contractor.

A principal contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal accountability for failing in his or her management duties in terms of this regulation.

Where the construction manager has not appointed assistant construction managers, or, in the opinion of an inspector, a sufficient number of such assistant construction managers have not been appointed, that inspector must direct the construction manager in writing to appoint the number of assistant construction managers indicated by the inspector, and those assistant construction managers must be regarded as having been appointed.

No construction manager appointed in terms of the Regulations may manage any construction work on or in any construction site other than the site in respect of which he or she has been appointed.

A contractor must, after consultation with the Client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: Provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of an inspector is decisive.

No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor

A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site. Proof of all-inclusive assessment of the Construction Supervisor's competency in construction supervision and H&S competency must be available in the Safety File. The Construction Supervisor must, as a minimum, have a supervision course as per Unit Standard 262845 (Civil Engineering), 119080 (Building Construction) and 262884 (Civil Engineering).

A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor, and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties.

Where the contractor has not appointed such an employee, or, in the opinion of an inspector, a sufficient number of such employees have not been appointed, that inspector must instruct the employer to appoint the number of employees indicated by the inspector.

No construction supervisor appointed may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that if a sufficient number of competent employees have been appropriately designated on all the relevant construction sites, the appointed construction supervisor may supervise more than one site.

2.3 Notification of Intention to Commence Construction Work

The Contractor shall notify the Provincial Director of the Department of Labour of the intention to commence construction work at least 7 days prior to the works commencing if the intended construction work will:

- Include excavation work
- Include work at height where there is a risk of falling
- Include the demolition of a structure, or
- Include the use of explosives to perform construction work.

If the construction work involves construction of a single storey dwelling for a Client, and such Client will be residing in such dwelling upon completion, the contractor must also notify the Provincial Director of the Department of Labour at least 7 days before the works commence.

This must be done on a form similar to an Annexure 2 (template of which can be found in the Construction Regulations, 2014). A copy of the notification letter to the Provincial Director shall be forwarded to the Client for record purposes.

2.4 Construction Work Permit

Not applicable to this project.

2.5 Assignment of Contractor's Responsible Persons to Manage Health and Safety on Site

The Contractor shall submit management and supervisory appointments as well as any relevant appointments in writing (as stipulated by the Construction Regulations 2014 and the Occupational Safety and Health Act 1993), prior to commencement of work (refer to **Annexure B** at the end of this Health and Safety Specification).

2.6 Competency for Contractor's Responsible Persons

The Contractor's responsible persons shall be competent in health and safety and be familiar with the Occupational Health and Safety Act 1993, and applicable regulations. Valid proof of pertinent health and safety courses attended by such persons will be required to be presented to the Client.

2.7 Compensation of Occupational Injuries and Diseases Act 130 of 1993 (COIDA)

The successful Contractor shall submit to the Client a valid letter of good standing with the Compensation Insurer prior to appointment.

2.8 Occupational Health and Safety Policy

The Contractor shall submit their Health and Safety Policy, prior to construction commencement, signed by the Chief Executive Officer. The Policy must outline objectives and how they will be achieved and implemented within the company operations. The Policy must be communicated to all employees and proof thereof must be available in the Safety File.

2.9 Health and Safety Organogram

The Contractor shall submit an organogram, prior to construction commencement, outlining the Health and Safety Site Team that will be assigned to the project, if successful with the tender. In cases where appointments have not been made, the organogram shall reflect the position. The organogram shall be updated when there is a change in the site team.

2.10 Risk Assessments

Baseline Risk Assessment

The Client shall cause a baseline risk assessment to be conducted by a competent person before the design process and tender process commence, and the assessed risks shall form part of the health and safety specifications.

The Contractor must, before commencement of any construction work, and during construction work, have risk assessments performed by a competent person appointed in writing, which risk assessments form part of the health and safety plan to be applied on the site and must include:

- The identification of the risks and hazards to which persons may be exposed to;
- An analysis and evaluation of the risks and hazards identified; based on a documented method

- A documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- A monitoring plan; and
- A review plan

The Contractor must ensure that, as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated, and addressed in a risk assessment.

The Contractor must ensure that all employees under his control are informed, instructed, and trained by a competent person regarding any hazard and the related work procedures and/or control measures **before any work commences** and thereafter **at the times determined in the risk assessment monitoring and review plan of the relevant site.**

The Principal Contractor must ensure that all contractors are informed regarding any hazard that is stipulated in the risk assessment **before any work commences** and thereafter **at the times determined in the risk assessment monitoring and review plan of the relevant site.**

The Contractor must consult with the health and safety committee or with a representative trade union or representative group of employees if no health and safety committee exists, on the monitoring and review of the risk assessments for the site.

The Contractor must ensure that copies of risk assessment for this site are available on site for inspection purposes by interested parties (inspector, the Client, Client's Safety Agent, any contractor, any employee, a representative trade union, a health and safety representative or safety committee member.

A Contractor must review the relevant risk assessment where changes are effected to the design and/or construction that result in a change to the risk profile, or when an incident has occurred.

Preventative measures must first address the elimination of the hazard or risk. Should PPE be required to reduce risk, the equipment or clothing to be used must be SABS approved.

In general, the Contractor must ensure that the Risk Assessment involves identifying the hazards present in a work activity on site. This is followed by an evaluation of the extent of the risk involved taking into account those precautions already being taken.
The following general principle should be followed when conducting a risk assessment:

- All relevant risks and/or hazards should be systematically addressed;
- The risk assessment should address what actually happens in the workplace during the work activity;
- All employees and those who may be affected must be considered, including maintenance staff, security guards, visitors, and Contractors;
- The risk assessment should highlight those groups and individuals who may be required to work alone or who have disabilities;
- The risk assessment process should take into account the existing safety measures and controls.
- The level of detail on a risk assessment should be appropriate to the level of risk.

2.11 Health and Safety Representative(s)

The Contractor shall ensure that Health and Safety Representative(s) is/are elected and trained to carry out his / her functions. The Safety Representative(s) must be democratically nominated, elected, and appointed in writing. The Health and Safety Representative(s) shall carry out regular inspections, keep records and report to the supervisor to take appropriate action. The Safety Representative(s) shall attend Health and Safety Committee Meetings. The Health and Safety Representative shall be part of the team that will investigate incidents, accidents, and non-conformances. The Safety Representative(s) must be (a) full time employee(s) who is/are acquainted with conditions and activities at that workplace or section thereof. The Safety Representatives must have Safety Representative training and must be capable of performing their duties.

2.12Health and Safety Committee

Where two or more health and safety representatives have been appointed on site, the Contractor shall ensure that monthly health and safety meetings are held with such representatives and minutes are kept on record. Meetings must be organized and chaired by the Contractor's Health and Safety Committee Chairperson. Minutes of these meetings must be available for the employees of the contractor to refer to.

PLEASE NOTE THAT THE SAFETY AGENT MAY REQUIRE THAT THE PRINCIPAL CONTRACTOR CONVENES A SAFETY COMMITTEE MEETING ON SITE IN THE INTERESTS OF HEALTH AND SAFETY ON SITE. SUCH COMMITTEE MEETING MAY REQUIRE ATTENDANCE OF CONTRACTORS SAFETY OFFICERS/SAFETY REPRESENTATIVES, CONSTRUCTION SUPERVISION AND THE SAFETY AGENT.

2.13 Medical Certificate of Fitness

The contractor must ensure that their employees on site have a valid medical certificate of fitness, specific to the construction work being performed, issued by an occupational health practitioner in the form of an Annexure 3 template (refer to the Construction Regulations 2014 on the Department of Labour website for a sample of this form).

Employees required to perform work at heights or from fall risk position must be medically fit to perform such work, such employee's medicals must specify "Fall Risk" or "Working at heights" in the exposure section of the annexure 3 template.

2.14 Health and Safety Training

The Contractor shall quarterly conduct a training needs analysis to ascertain what health and safety training is required. A plan of action should be devised and forwarded to the Client for records. Once the identified people have attended the training, the Contractor must provide the Client with copies of certificates obtained.

2.14.1 Induction

No Contractor may allow or permit any employee or person to enter site unless they have undergone health and safety induction training pertaining to the hazards prevalent on site at the time of entry. This includes visitors to site. The Contractor must ensure that visitors to site have the necessary protective equipment (PPE). A copy of attendance registers of all employees who attend inductions shall be kept.

2.14.2 Awareness

The Contractor shall conduct periodic toolbox talks on site, weekly or before any hazardous work takes place. The talks shall cover the relevant activity and an attendance register must be signed by all attendees. This record of who attended and the content of the topic will be kept on the site health a safety file as evidence of training.

2.15 Competency

After the Contractor has identified the training to be conducted as part of the competency requirement, and based on Risk Assessment, he shall send the relevant persons on appropriate courses and keep certificates of training for reference. Familiarity with the Health and Safety Act and Regulations is an integral part of the definition of competence. All training must be conducted by an accredited training provider and the certificates must display the applicable unit standards and the expiry dates thereof.

2.16 General Record Keeping

The Contractor shall keep and maintain Health and Safety records to demonstrate compliance with the Health and Safety Specification and the Occupational Health and Safety Act. The contractor shall ensure that all records of incidents, spot fines, training, etc. are kept on site. All documents shall be available for inspection by the Client, or the Department of Labour's Inspectors.

2.17 General Inspection, Monitoring and Reporting

The Contractor shall carry out inspections as required by this Health and Safety Specification, as well as by health and safety legislation.

2.18 Emergency Procedures

The Contractor shall submit a detailed Emergency Procedure for approval by the Client prior to commencement on site. The procedure shall detail the response plan including the following:

- List of key personnel;
- Details of emergency services;
- Actions or steps to be taken in the event of the emergency; and
- Information on hazardous materials / situations, including each material's hazardous potential impact or risk on the environment or human and measures to be taken in the event of an accident.

Emergency procedure(s) shall include, but shall not be limited to, fire, spills, accidents to employees, use of hazardous substances, dangers as a result of riot / service delivery protests / intimidation, etc. The Contractor shall advise the Client in writing of any on-site emergencies, together with a record of action taken, within 24 hours of the emergency occurring. A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc.) must be maintained and available to site personnel.

2.19 First Aid Box and First Aid Equipment

The Contractor shall provide first aid box/es and appoint, in writing, First Aider(s) for this project in line with the results of the Contractor's risk assessment for the project, this health and safety specification as well as the provisions of the General Safety Regulations. The appointed First Aider(s) are to be sent for accredited first aid training before starting on site. Valid certificates are to be kept on site.

- First Aid box/es must be adequately stocked at all times, accessible and be controlled by a qualified First Aider.
- Perishables to be checked and replaced when expired.
- Stock per content list as per the General Safety Regulations Annexure.
- Signage to be in place.
- To be numbered and sealed with name of first aider on or above the First aid box.
- Dressing logbook to be available in the first aid box.
- If more than 5 employees are present, there must be a first aid box available.
- Register to be checked by a Competent person.

If required by the Client, the Contractor shall have a stretcher on site to be used in case of a serious incident.

2.20 Accident / Incident Reporting and Investigation

The Contractor shall, in addition to the prescribed requirements of the Occupational Health and Safety Act and General Safety Regulations, investigate, record, and report all Section 24 reportable incidents to the Client within 24 hours of the incident occurring. Incident investigations shall be conducted by the Contractor's appointed Accident Investigator – this Investigator must be a competent person or persons who have sufficient knowledge to carry out an investigation.

In the event of a fatality or a permanent disabling injury the Contractor must submit proof of reporting of incident to Department of Labour as well as proof of preventative measures to the Client. The Client reserves the right to conduct investigations into any incidents that they deem fit, and the Contractor is required to provide full co-operation in this regard.

2.21 Hazards and Potential Situations

The Contractor shall immediately notify other Contractors of any hazardous or potentially hazardous situations, which may arise during performance of the activities.

2.22 Occupational Health and Safety Signage

The Contractor shall ascertain and provide adequate on-site health and safety signage. This signage shall include, but shall not be limited to, Hard Hat / Helmet Area; Safety Shoes to be worn on site; Dust Masks to be worn in areas where there might be exposure to excessive dust; Ear Plugs / Muffs to be worn where there might be noise exposure over 85 dB; Gloves; Safety Goggles; Safety Harness, Workers in Excavation, traffic management, etc. The Contractor shall be responsible to maintain the quality and replacement of signage. Signage must comply with the requirements of SABS.

2.23 Management of Contractors by Principal Contractor

The Principal Contractor shall ensure that all contractors under his control are complying with the respective Health and Safety Plans, as well as Health and Safety Legislation.

2.24 Stacking of Materials

In addition to the provisions for the stacking of articles in the General Safety Regulations, 2003, the contractor must ensure that –

- a competent person is appointed in writing with the duty of supervising all stacking and storage on a construction site;
- adequate storage areas are provided;
- there are demarcated storage areas; and
- storage areas are kept neat and under control.

2.25 Housekeeping and General Safeguarding on Construction Sites

A contractor must, in addition to compliance with the Environmental Regulations for Workplaces, 1987, promulgated by Government Notice No. R. 2281 of 16 October 1987, ensure that suitable housekeeping is continuously implemented on each construction site, including-

- the proper storage of materials and equipment;
- the removal of scrap, waste, and debris at appropriate intervals;
- ensuring that materials required for use, are not placed on the site so as to obstruct means of access to and egress from workplaces and passageways;
- ensuring that materials which are no longer required for use, do not accumulate on, and are removed from the site at appropriate intervals;
- ensuring that waste and debris are not disposed of from a high place with a chute, unless the chute complies with the requirements set out in the regulations;
- ensuring that construction sites in built-up areas adjacent to a public way are suitably and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorized persons; and
- ensuring that a catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under or fencing off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe in the case of danger or possibility of persons being struck by falling objects.

2.26 *Construction Vehicles and Mobile Plant*

A contractor must ensure that all construction vehicles and mobile plant -

- are of an acceptable design and construction;
- are maintained in a good working order;
- are used in accordance with their design and the intention for which they were designed, having due regard to safety and health;
- are operated by a person who-

- has received appropriate training, is certified competent and in possession of proof of competency and is authorised in writing to operate those construction vehicles and mobile plant;
- has a medical certificate of fitness to operate those construction vehicles and mobile plant, issued by an occupational health practitioner in the form of Annexure 3.
- have safe and suitable means of access and egress;
- are properly organized and controlled in any work situation by providing adequate signalling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- are prevented from falling into excavations, water, or any other area lower than the working surface by installing adequate edge protection, which may include guard-rails and crash barriers;
- are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- are equipped with an acoustic warning device which can be activated by the operator;
- are equipped with an automatic acoustic reversing alarm;
- are equipped with fire extinguishers (2.5 – 4.5 kg); and
- are inspected by the authorised operator or driver on a daily basis using a relevant checklist prior to use and that the findings of such inspection are recorded in a register kept in the construction vehicle or mobile plant.

A contractor must ensure that -

- no person rides or is required or permitted to ride on a construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
- every construction site is organized in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
- the traffic routes are suitable for the persons, construction vehicles or mobile plant using them, are sufficient in number, in suitable positions and of sufficient size;
- every traffic route is, where necessary, indicated by suitable signs;
- all construction vehicles and mobile plant left unattended at night, adjacent to a public road in normal use or adjacent to construction areas where work is in progress, have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
- all construction vehicles or mobile plant when not in use, have buckets, booms, or similar appendages, fully lowered, or blocked, controls in a neutral position, motors stopped, wheels chocked, brakes set, and ignition secured;
- whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- tools, material, and equipment are secured and separated by means of a physical barrier in order to prevent movement when transported in the same compartment with employees;
- vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
- all construction vehicles or mobile plant travelling, working, or operating on public roads comply with the requirements of the National Road Traffic Act, 1996.
- all plant and vehicles are be fitted with amber rotating beacons and reverse alarms.
- ALL construction site vehicles must be inspected daily especially if it has dangerous "items" (fuel, explosives, etc.) on vehicle, completed inspection registers must also be available for inspection.
- the vehicles must resemble the original manufacturer's product. Levers, alarms, and amber lights to be

fitted to construction vehicle for notification of vehicle.

- fire extinguishers, signage, and licence disc to be correctly mounted and displayed.
- when the vehicle is stationary no key to be left in or on vehicle or plant.
- Drip tray must be present when stationary.

2.27 Electrical Installations and Machinery on Construction Sites

A contractor must, in addition to compliance with the Electrical Installation Regulations and the Electrical Machinery Regulations, ensure that –

- before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site;
- all parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites;
- the control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing for that purpose;
- all temporary electrical installations used by the contractor are inspected at least once a week by a competent person and the inspection findings are recorded in a register kept on the construction site; and
- all electrical machinery is inspected by the authorized operator or user on a daily basis using a relevant checklist prior to use and the inspection findings are recorded in a register kept on the construction site.

2.28 *Use and Temporary Storage of Flammable Liquids on Construction Sites*

A contractor must, in addition to compliance with the provisions for the use and storage of flammable liquids in the General Safety Regulations, 2003, ensure that –

- where flammable liquids are being used, applied, or stored at the workplace concerned, it is done in a manner that does not cause a fire or explosion hazard, and that the workplace is effectively ventilated;
- no person smokes in any place in which flammable liquid is used or stored, and the contractor must affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;
- an adequate amount of efficient fire-fighting equipment is installed in suitable locations around the flammable liquids store with the recognized symbolic signs;
- only the quantity of flammable liquid needed for work on one day is taken out of the store for use;
- all containers holding flammable liquids are kept tightly closed when not in actual use and, after their contents have been used up, are removed from the construction site, and safely disposed of;
- where flammable liquids are decanted, the metal containers are bonded and earthed; and
- no flammable material, including cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids
- proper containers are to be used for fuel. Marked and labelled as per the content.
- diesel on site; more than 800 litres must have a certificate, fire safe certificate. Locked in a ventilated, secure area with a drip tray and have a designated, responsible person to use it.

2.29 *Water environments*

Not applicable to this project.

2.30 Fire precautions on Construction Sites

A contractor must, in addition to compliance with the Environmental Regulations for Workplaces, 1987, ensure that –

- all appropriate measures are taken to avoid the risk of fire;
- sufficient and suitable storage is provided for flammable liquids, solids, and gases;
- smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials;
- in confined spaces and other places in which flammable gases, vapours or dust can cause danger-
    - only suitably protected electrical installations and equipment, including portable lights, are used;
    - there are no flames or similar means of ignition;
    - there are conspicuous notices prohibiting smoking;
    - oily rags, waste, and other substances liable to ignite are without delay removed to a safe place; and
    - adequate ventilation is provided;
- combustible materials do not accumulate on the construction site;
- welding, flame cutting, and other hot work are done only after appropriate precautions have been taken to reduce the risk of fire;
- suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order;
- the fire equipment contemplated above is inspected by a competent person, who has been appointed in writing for that purpose, in the manner indicated by the manufacturer thereof;
- a sufficient number of workers are trained in the use of fire-extinguishing equipment;
- where appropriate, suitable visual signs are provided to clearly indicate the escape routes in the case of a fire;
- the means of escape is kept clear at all times;
- there is an effective evacuation plan providing for all -
    - persons to be evacuated speedily without panic;
    - persons to be accounted for; and
    - plant and processes to be shut down; and
- a siren is installed and sounded in the event of a fire.

2.31 *Construction Employees' Facilities*

A contractor must, in terms of the Construction Regulations 2014, provide:

- Shower facilities after consultation with the employees or employees' representatives, or at least one shower facility for every 15 persons;
- at least one sanitary facility for each sex and for every 30 workers;
- Toilets to be within walking distance

- Hygiene registers to be completed
- Proof of safe disposal of effulgent waste disposal certificates to be obtained
- changing facilities for each sex;
- and sheltered/shaded eating area.
- Protection from the Elements and raised off the ground.
- Every employer shall provide sanitary facilities at the workplace in accordance with the provisions of Parts F, P and Q of the National Building Regulations.
- Sufficient clean water for all employees. 500ml to each employee every hour.

A contractor must provide reasonable and suitable living accommodation for the workers at construction sites who are far removed from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

2.32 Fall protection

The Contractor must:
- designate a competent person to be responsible for the preparation of a fall protection plan
- ensure that the fall protection plan contemplated above is implemented, amended where and when necessary and maintained as required; and
- take steps to ensure continued adherence to the fall protection plan.
  A fall protection plan contemplated above must include-
- a risk assessment of all work carried out from a fall risk position and the procedures and methods used to address all the risks identified per location;
- the processes for the evaluation of the employees' medical fitness necessary to work at a fall risk position and the records thereof;
- a programme for the training of employees working from a fall risk position and the records thereof;
- the procedure addressing the inspection, testing, and maintenance of all fall protection equipment; and
- a rescue plan detailing the necessary procedure, personnel and suitable equipment required to affect a rescue of a person in the event of a fall incident to ensure that the rescue procedure is implemented immediately following the incident.

A contractor must ensure that a construction manager appointed under regulation 8(1) is in possession of the most recently updated version of the fall protection plan.

A contractor must ensure that all unprotected openings in floors, edges, slabs, hatchways, and stairways are adequately guarded, fenced, or barricaded or that similar means are used to safeguard any person from falling through such openings;

Also that no person is required to work in a fall risk position, unless such work is performed safely as contemplated in above and fall prevention and fall arrest equipment are approved as suitable and of sufficient strength for the purpose for which they are being used, having regard to the work being carried out and the load, including any person, they are intended to bear; and securely attached to a structure or plant, and the structure of plant and the means of attachment thereto are suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and person who could fall, and fall arrest equipment is used only where it is not reasonably practicable to use fall prevention equipment.

2.33 Temporary works

Not applicable to this project.

2.34 Excavation

A contractor must-
- ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing for that purpose; and
- evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.

A contractor who performs excavation work-

- must take reasonable and sufficient steps in order to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an excavation;
- may not require or permit any person to work in an excavation which has not been adequately shored or braced: Provided that shoring and bracing may not be necessary where-
    - the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or
    - such an excavation is in stable material: Provided that-
        - permission has been given in writing by the appointed competent person contemplated above upon evaluation by him or her of the site conditions; and
        - where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations is decisive and such a decision must be noted in writing and signed by both the competent person and the professional engineer or technologist, as the case may be;
- must take steps to ensure that the shoring or bracing contemplated above is designed and constructed in a manner that renders it strong enough to support the sides of the excavation in question;
- must ensure that no load, material, plant, or equipment is placed or moved near the edge of any excavation where it may cause its collapse and consequently endangers the safety of any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;
- must ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, steps are taken to ensure the stability of such building, structure or road and the safety of persons;
- must cause convenient and safe means of access to be provided to every excavation in which persons are required to work, and such access may not be further than six metres from the point where any worker within the excavation is working;
- must ascertain, as far as is reasonably practicable, the location and nature of electricity, water, gas, or other similar services which may in any way be affected by the work to be performed, and must before the commencement of excavation work that may affect any such service, take the steps that are necessary to render the circumstances safe for all persons involved;
- must ensure that every excavation, including all bracing and shoring, is inspected-
    - daily, prior to the commencement of each shift;
    - after every blasting operation;
    - after an unexpected fall of ground;
    - after damage to supports; and
    - after rain,

  by the competent person, in order to ensure the safety of the excavation and of persons, and those results must be recorded in a register kept on site and made available on request to an inspector, the Client, the Client's Safety Agent, any other contractor or any employee;
- must cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be –
    - adequately protected by a barrier or fence of at least one metre in height and as close to the excavation as is practicable; and
    - provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor, or have resort to any other suitable and sufficient precautionary measure where this is not practicable;
- must ensure that all precautionary measures stipulated for confined spaces as determined in the General Safety Regulations, 2003, are complied with by any person entering any excavation;
- must, where the excavation work involves the use of explosives, appoint a competent person in the use of explosives for excavation, and must ensure that a method statement is developed by that person in accordance with the applicable explosive's legislation; and
- must cause warning signs to be positioned next to an excavation within which or where persons are working or carrying out inspections or tests.

2.35 *Demolition Work*

Not applicable to this project.

2.36 Tunnelling

No person may enter a tunnel which has a height dimension of less than 800 mm.

2.37 Scaffolding

A contractor must appoint a competent person in writing who must ensure that all scaffolding work operations are carried out under his or her supervision and that all scaffold erectors, team leaders and inspectors are competent to carry out their work as per the SANS 10085 of 2004.

A contractor using access scaffolding must ensure that such scaffolding, when in use, complies with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act and SANS 10085. Scaffold must be;

- Level and balanced upon the correct footing such as base jacks, U-Jacks, and mobile wheels
- Have the correct Ledgers and bracing methods to secure the frames and Standards
- To be fully boarded with the correct edge protection on both the 0.500m and 1 metre height per working platforms.
- Working platforms to be in accordance with the Tables 4 and 5 of the SANS 10085 for weight restrictions
- Have the correct access that is fitted within the scaffold and grants access to the working platforms and must be fitted with a trap door system.
- Secured with fastening methods such Reveal and fixed ties according to table 7 of SANS 10085. Buttresses to be used when required.
- signage must be displayed to indicate if the scaffold is safe or unsafe to use.
- Trestles to be built in accordance with section 10.16.1 of the SANS 10085 and safety requirements to be met by the scaffolding inspector and scaffold supervisors on site.

2.38 Bulk mixing plant

Not applicable to this project.

2.39 *Rope Access Work*

Not applicable to this project.

2.40 Hazardous Chemical Substances (HCS)

In addition to the requirements in the HCS Regulations, the principal contractor must provide proof in the Health and Safety Plan that:

- Material Safety Data Sheets (MSDS's) of the relevant materials / hazardous chemical substances are available prior to use by the contractor. All MSDS's shall be available for inspection by the agent at all times.
- Risk assessments are done at least once every 6 months.
- Exposure monitoring is done according to OESSM and by an Approved Inspection Authority (AIA) and that the medical surveillance programme is based on the outcomes of the exposure monitoring.
- How the relevant HCS's are being/going to be controlled by referring to:
  - Limiting the amount of HCS
  - Limiting the number of employees
  - Limiting the period of exposure
  - Substituting the HCS
  - Using engineering controls
  - Using appropriate written work procedures
- The correct PPE is being used.
- HCS are stored and transported according to SABS 072 and 0228.
- Training with regards to these regulations was given.

The Health and Safety plan should make reference to the disposal of hazardous waste on classified sites and the location thereof (where applicable).

The First Aider must be made aware of the MSDS and trained in how to treat HCS incidents appropriately.

2.41 Noise Induced Hearing Loss

Where noise is identified as a hazard the requirements of the NIHL regulations must be complied with and the following must be included / referred to in the Health and Safety Plan:

- Proof of training with regards to these regulations.
- Risk assessment done within 1 month of commencement of work.
- That monitoring carried out by an AIA and done according to SABS 083.
- Medical surveillance programme established and maintained for the necessary employees.
- Control of noise by referring to:
- Engineering methods considered
- Admin control (number of employees exposed) considered
- Personal protective equipment considered/decided on
- Describe how records are going to be kept for 40 years.

2.42 Explosives and Blasting

Not applicable to this project.

2.43 Personal Protective Equipment (PPE)

The Contractor shall carry out PPE or clothing needs analysis in accordance with his risk assessment, to determine the necessary PPE or clothing to be used during construction. The Contractor shall make provision to keep adequate quantities of appropriate, SABS approved PPE or clothing on site at all times.

The Contractor must ensure that personnel are trained in the correct use of PPE to be used.

The Contractor must ensure that lost, stolen, worn out or damaged PPE is replaced as required and receipt signed for by employees on site.

2.44 Asbestos

The Contractor shall ensure that all asbestos work is done only by registered "Asbestos Contractor" as prescribed by the Asbestos Abatement Regulations, 2020. The Contractor shall submit an Asbestos Certificate from Department of Labour which refer to the prescribed requirements. The Contractor shall notify The Client if there are any asbestos materials to be used on site.

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

"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;

Besides the requirements listed above, should asbestos be identified as a hazard at the workplace, the contractor must, as per AAR 2020, include the following in the health and safety plan/file and must be implemented on site:

- An asbestos risk assessment must be carried out, as far as is reasonably practicable, immediately by a competent person and thereafter at intervals not exceeding 24 months.
- If asbestos-containing materials are identified a written asbestos management plan for the workplace must be prepared by a competent person.
- Train Employees, visitors and persons who may have incidental asbestos exposure to asbestos.
- The Chief Director: Provincial Operations must be notified as per the Annexure 2 when asbestos work will be done, at least seven days prior to commencement of work.
- The contractor may only undertake the type of asbestos work for which they are registered by the chief inspector.
- Must appoint an occupational health and safety representative as contemplated in section 17 of the Act.

- Submit the approved plan of work to the Chief Director: Provincial Operations at least seven days prior to commencement of asbestos work.
- Appoint an asbestos removal supervisor for each asbestos work site.
- Adhere to the repair or removal methodology and associated control measures provided in the plan of work approved for that specific asbestos work.
- Ensure that the employee medical and training records are available on site for inspection and validation.
- Keep employee information for a minimum period of 50 years.
- For type 2 and type 3 asbestos work, ensure that air monitoring is in place.
- All asbestos contractor employees must be put under medical surveillance.
- Close off all asbestos containing or affected areas.
- The contractor must provide the required PPE, washing facilities and decontamination facilities as per the type of asbestos work.
- A document must be obtained from the asbestos disposal site for all asbestos waste removed from the workplace; all asbestos waste is disposed of only on sites specifically designated for this purpose
- When all asbestos is removed an inspection must be done by and approved inspection authority and an asbestos clearance certificate issued.
- Comply with the Prohibitions in regulation 24.

2.45 Pressure Equipment (Including Gas Bottles)

The Contractor shall comply with Pressure Equipment Regulations, including:

- Providing competency and awareness training to the operators;
- Providing PPE or clothing;
- Providing and maintain appropriate signage in areas where pressure equipment is used, as applicable;
- Inspect equipment regularly and keep records of inspections;
- Providing appropriate firefighting equipment (Fire Extinguishers).
- Under pressure equipment to have the following in place;
  - Service date
  - Seals on valves with no leaks and not broken
  - flash arrestors
  - Should be stored and chained together
  - Oxygen / Acetylene bottles to have clips
  - Signage to be visible

- Gauges in working condition and be visible
- Permits for use
- Pressure equip Regs 6. (1) The user shall ensure that the pressure equipment is operated and maintained within its design and operating parameters.

2.46 Fire Extinguishers and Fire Fighting Equipment

The Contractor shall provide adequate, regularly serviced fire extinguishers located at strategic points on site. The Contractor shall keep spare serviced portable fire extinguishers. The Contractor shall have adequate persons trained or competent to use the Fire Fighting Equipment.

Safety signage shall be posted up in all areas where fire extinguishers are located.

2.47 Lifting Machinery and Tackle

The Contractor shall ensure that lifting machinery and tackle is inspected before use and on a monthly basis. The Contractor shall have lifting machinery and tackle inspector who will inspect the equipment at intervals required by the Driven Machinery Regulations, taking into account that:

- All lifting machinery and tackle have a safe working load clearly indicated
- Regular inspection and servicing are carried out
- Records are kept of inspections and of service certificates
- Thorough examinations are carried out by competent personnel at the frequencies required by legislation
- There is proper supervision in terms of guiding the loads which includes a trained banks man to direct and check lifting tackle if it is safe for use
- Forklift to be inspected every year and lift plan every 2 years
- Load test certificate to be no older than 6 months
- Sufficient props to be used and max weight to be displayed
- Slings to be checked regarding integrity, chains, serial numbers, checked for tears, cuts links and all other materials
- Hooks to be oiled, not in a fixed position and closed to prevent materials from slipping/falling off
- Lifting equipment must be used for the scope of work carried out

2.48 Ladders and Ladder work

The Contractor shall ensure that all ladders are numbered and inspected regularly keeping record of inspections. It should be noted that Aluminium ladders are preferred to wooden ladders.

2.49 General Machinery

The Contractor shall comply with the Driven Machinery Regulations, which include inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE or clothing and training those that use machinery and enforce compliance.

2.50 Portable Electrical Tools

The Contractor shall ensure that use and storage of all explosive actuating fastening devices and portable electrical tools are in compliance with relevant legislation.

The Contractor shall consider that:

- A competent person undertakes routine inspections;
- Only authorised persons use the tools;
- There are safe working procedures applied;
- Awareness training is carried out and compliance is enforced at all times; and
- PPE and clothing are provided and maintained.

2.51 High Voltage Electrical Equipment

The Contractor shall ensure that, where the work is under, on or near high-voltage electrical equipment the Electrical Installation Regulations, together with safety instructions (Regulations of the Owner of the Equipment) are complied with. Such equipment includes:

- Eskom and the Local Authority equipment
- The Contractor's own power supply; and
- Electrical equipment being installed but not yet taken over from a Contractor by The Client.

2.52 Public Health and Safety

The Contractor shall ensure that each person working on or visiting a site, and the surrounding community, shall be made aware of the dangers likely to arise from onsite activities and the precautions to be observed to avoid or minimize those dangers. Appropriate health and safety signage shall be posted at all times.

2.53 Night Work

The Contractor shall not undertake any night work without prior arrangement and a written permit from the Client. The Contractor shall ensure that adequate lighting is provided for all night work and failure to do so shall result in work being stopped.

2.54 Environmental Conditions and Flora and Fauna

The Contractor must be mindful of adverse weather conditions upon the health and safety of the workforce. This includes inclement weather, strong wind, heat stress, extreme cold, etc. The Contractor's risk assessment process must take into account the risks associated with such weather conditions. The same is true when working in an environment where there is a risk to employees' health and safety from presence of poisonous flora, or wildlife (including bees, snakes, etc). The Contractor's risk assessment process must take these risks into account.

2.55 Occupational Health

Exposure of workers to occupational health hazards and risks are quite common in any work environment, especially in construction. Occupational health hazards and risks exposure is a major problem, and all Contractors are to ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards and risks.

The occupational hazards and risks may enter the body in three ways:

- Inhalation through breathing e.g., cement dust;
- Ingestion through swallowing maybe through food intake;
- Absorption through the skin (pores) e.g., painting or use of thinners.

The contractor is required to ensure that all his personnel are medically fit prior to being allowed onto the work site.

All Contractors should ensure that Occupational Hygiene surveys are conducted as per the Occupational Health and Safety Act to ensure employees are not exposed to hazards. Risk Assessments should identify areas where surveys are to be conducted.

2.56 Suspended Platforms

Not applicable to this project.

2.57 Material Hoists

Not applicable to this project.

2.58 Explosive Actuated Fastening Device

No contractor may use or permit any person to use an explosive actuated fastening device, unless-

- the user is provided with and uses suitable protective equipment;
- the user is trained in the operation, maintenance and use of such a device
- the explosive actuated fastening device is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and
- the firing mechanism is so designed that the explosive actuated fastening device, will not function unless-
- it is held against the surface with a force of at least twice its weight; and
- the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle.

A contractor must ensure that-

- only cartridges suited for the relevant explosive actuated fastening device, and the work to be performed, are used;
- an explosive actuated fastening device is cleaned and examined daily before use and as often as may be necessary for its safe operation by a competent person who has been appointed for that purpose;
- the safety devices of an explosive actuated fastening device are in good working order prior to use;
- when not in use, an explosive actuated fastening device and its cartridges are locked up in a safe place, which is inaccessible to unauthorized persons;
- an explosive actuated fastening device is not stored in a loaded condition;
- a warning notice is displayed in a conspicuous manner in the immediate vicinity wherever an explosive actuated fastening device is used; and
- the issuing and collection of cartridges and nails or studs of an explosive actuated fastening device are-
    - controlled and done in writing by a person having been appointed in writing for that purpose; and
    - recorded in a register by a competent person and that the recipient has accordingly signed for the receipt thereof as well as the returning of any spent and unspent cartridges.

2.59 Confined Spaces

Not applicable to this project.

2.60 Alcohol and drugs (GSR 2)

1. A contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a site.

2. No employee shall be under the influence of or have in his or her possession or partake of or offer any other person intoxicating liquor or drugs.

3. An employer or a user, as the case may be, shall, in the case where a person is taking medicines, only allow such person to perform duties at the site if the side effects of such medicine do not constitute a threat to the health or safety of the person concerned or other persons at such site.

2.61 COVID-19 (PLEASE NOTE THAT THIS SECTION IS CONSTANTLY UNDER REVIEW)

Disaster Management Act: Regulations: Transitional measures

Mandatory protocols when in a public place (as updated on 4 April 2022)

67. (1) For the purposes of these Regulations, a 'face mask' means a cloth face mask or a home-made item that covers the nose and mouth, or another appropriate item to cover the nose and mouth.
(2) The wearing of a face mask is mandatory for every person when in an indoor public place, excluding a child under the age of six years.
(3) No person will be allowed to-
(a) use, operate, perform any service on any form of public transport; or
(b) enter or be in a building, place or premises, including government buildings, places or premises, used by the public to obtain goods or services, if he or she is not wearing a face mask.
(4) (a) All persons in an open public space need not wear a face mask but must maintain a distance of at least one metre from another person.
(b) The school environment is excluded from the requirement of maintaining a distance of at least one metre from another person.
(5) An employer may not allow any employee to perform any duties or enter the employment premises if the employee is not wearing a face mask while performing his or her duties.

2.62 General Practices when Working at Heights

- No Home-made structures or ladders will be permitted on the project.
- Trestle tables are not to be fully extended and must be fully boarded, no drums to be used.
- Surroundings to be clear of rubble.
- Fall protection, fall prevention, and fall rescue plans to be in place and communicated to site employees.
- Ladders to be structurally sound and not broken and in accordance with GSR 13A.
- Only competent persons may be allowed to work at heights
- Correct personal protective equipment to be used (safety harness and lanyard) and edge protection / lifelines to be used.
- Anchor points to be in place and determined by an engineer. Anchor points must be pull tested prior to use.
- GSR (6) 6. No employer shall require or permit any person to work in an elevated position and no person shall work in an elevated position, unless such work is performed safely from a ladder or scaffolding, or from a position where such person has been made as safe as if they were working from scaffolding.

- Construction regulation 10 of 2014 to be implemented when working at heights and to prevent any person from falling from heights.
- Employees required to perform work at heights or from fall risk position must be medically fit to perform such work, such employee's medicals must specify "Fall Risk" or "Working at heights" in the exposure section of the annexure 3 template.

2.63 Traffic Accommodation

All traffic signs must be displayed as per the traffic management plan drawings.
Size of signs used must be as per the traffic management drawings and all signs to be visible and in good condition.

- Traffic management Plan issued per Road and Traffic act (chapter 13). Must be approved by the Traffic Chief and professional team.

- Plans for signage deployment must be in order and must be placed correctly.
- Traffic management plan must be submitted and must be suitable for the tasks being performed.
- Traffic plan must be implemented and controlled by the sites Traffic safety officer and flag persons.
- Jersey barriers, where used, to be linked.
- No signs to be obstructed.
- STOP/GO structures must be protected against being struck by vehicles (e.g., new jersey barriers)
- Road marking buggies/vehicles must be protected by escort vehicles front and rear.
- Displayed traffic signs must be maintained in a daily register to be checked morning and evenings after works have been finalised.

Night work:
- Signage, traffic accommodation and personnel must be visible (reflective / illuminated).
- Certified, competent traffic officer and flag persons to be used during night operations.

Traffic Safety Officer must check signage daily and Engineer must sign it off daily.

2.64 Ventilation and Lighting in the Workplace

Every employer shall cause every workplace in his undertaking to be lighted in accordance with the illuminance values specified in the Schedule to the General Safety Regulations:

Provided that where specialised lighting is necessary for the performance of any particular type of work, irrespective of whether that type of work is listed in the Schedule or not, the employer of those employees who perform such work shall ensure that such specialised lighting is available to and is used by such employees.

The Contractor must ensure that:
- the average illuminance at any floor level in a workplace within five meters of a task is not less than one fifth of the average illuminance on that task;
- glare in any workplace is reduced to a level that does not impair vision;
- lighting on rotating machinery in such that the hazard of stroboscopic effects is eliminated; and
- luminaires and lamps are kept clean and, when defective, are replaced or repaired forthwith.

With a view to the emergency evacuation of indoor workplaces without natural lighting or in which persons habitually work at night, every employer shall, in such workplaces, provide emergency sources of lighting which are such that, when activated, an illuminance of not less than 0.3 lux is obtained at floor level to enable employees to evacuate such workplaces: Provided that where it is necessary to stop machinery or shut down plant or processes before evacuating the workplace, or where dangerous materials are present or dangerous processes are carried out, the illuminance shall be not less than 20 lux.

The contractor must ensure that the emergency sources of lighting prescribed above:
- are capable of being activated within 15 seconds of the failure of the lighting prescribed by sub-regulation (1);
- will last long enough to ensure the safe evacuation of all indoor workplaces;
- are kept in good working order and tested for efficient operation at intervals of not more than three months; and
- where directional luminaires are installed, these are mounted at a height of not less than two meters above floor level and are not aimed between 10° above and 45° below the horizontal line on which they are installed.

The contractor must ensure that all rooms, stairways, passageways, gangways, basements, and other places where danger may exist through lack of natural light, to be lighted such that it will be safe.

The contractor must ensure that every workplace in his undertaking is ventilated either by natural or mechanical means in such a way that –

- the air breathed by employees does not endanger their safety;
- the time-weighted average concentration of carbon dioxide therein, taken over an eight-hour period, does not exceed one half per cent by volume of air;

- the carbon dioxide content thereof does not at any time exceed three per cent by volume of air;
- the prescribed exposure limits for airborne substances therein are not exceeded; and
- the concentration therein of any explosive or flammable gas, vapour or dust does not exceed the lower explosive limit of that gas, vapour, or dust.

2.65 Nuclear Density Gauge (Troxler)

The use of a Troxler on site must be in line with the SANS 3001 of March 2014. The SANS consists of 5 sections

The in-situ density of road construction materials is only determined in civil engineering using indirect methods such as the nuclear density gauge and sand replacement methods.
This method forms part of a set of methods used to operate nuclear gauges, and includes the following:
a) administration, handling, and maintenance (see SANS 3001-NG1);
b) validation of standard calibration blocks (see SANS 3001-NG2);
c) calibration of a nuclear gauge (see SANS 3001-NG3);
d) verification of a nuclear gauge (see SANS 3001-NG4):
e) in situ density determination using a nuclear gauge (see SANS 3001-NG5)

When used Troxlers must be:

- Stored in a dedicated, lockable area and must have a warning signage displayed.
- Must only be transported in a dedicated vehicle with the required signage displayed and by an authorised employee that has been appointed in writing.
- Must have a Troxler Calibration Certificate in place.
- Must have a Troxler Technician Appointment on file and signed and proof of competency within the safety file.

2.66 Ergonomics Regulation of 2019

"competent person**"** in relation to ergonomics, means a person who– *(a)* has in respect of the work or task to be performed the required knowledge, training and experience in ergonomics and, where applicable, qualifications specific to ergonomics: provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2008 (Act No. 67 of 2008), those qualifications and that training must be regarded as the required qualifications and training; and *(b)* is familiar with the Act and the applicable regulations made under the Act;

"ergonomic risk" means a characteristic or action in the workplace, workplace conditions, or a combination thereof that may impair overall system performance and human well-being;

"ergonomic risk assessment" means a programme, process, or investigation to identify, analyse, valuate and prioritise any risk from exposure to ergonomic risks associated with the workplace;

"ergonomics" means the scientific discipline concerned with the fundamental understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimise human well-being and overall system performance;

The ergonomics regulations will apply to any employer or self-employed person who carries out work at the workplace who may expose any person to an ergonomic risk in the workplace and any designer, manufacturer, importer or supplier of machinery, plant, or work systems for the work place.

An employer must, before the commencement of any work that may expose employees to ergonomic risks, have an ergonomic risk assessment performed by a competent person.

The ergonomic risk assessment must be done at intervals not exceeding two years and must include the following;

- a complete hazard identification and all persons who may be affected by the ergonomic risk.
- how employees may be affected by the ergonomic risks;
- the analysis and evaluation of the ergonomic risks;

- the prioritisation of ergonomic risks.

An employer must review the relevant ergonomic risk assessment if:
- such assessment is no longer valid;
- control measures are no longer effective;
- technological or scientific advances allow for more effective control methods;
- there has been a change in –
  - the work methods;
  - the type of work carried out; or
  - the type of equipment used to control the exposure; and
  - an incident occurs or medical surveillance reveals an adverse health effect, where ergonomic risks are identified as a contributing factor.

An employer must ensure that an employee is placed under medical surveillance, which is overseen by an occupational medicine practitioner, if–
- the ergonomic risk assessment referred to in regulation 6 indicates the need for the employee to be placed under medical surveillance; or
- an occupational health practitioner recommends that relevant employees must be under medical surveillance, in which case the employer may call upon an occupational medicine practitioner to ratify the appropriateness of such recommendation.

An employer must ensure that the medical surveillance consists of–
- in the case of a new employee, an initial health examination before the employee commences employment or within 30 days of commencement of such employment;
- a periodic health examination informed by the ergonomic risk assessment, at intervals specified by an occupational medicine practitioner, but not exceeding two years; and
- an exit health examination informed by the ergonomic risk assessment.

Both the Client and the Contractor have a duty in terms of health and safety legislation to do all that is reasonably practicable to make members of the public and others being affected by the construction processes aware of possible risks and put preventative measures in place to mitigate the risks. The public and/or visitors shall go through a brief 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.

OTHER HEALTH AND SAFETY SPECIFICATION REQUIREMENTS

The contractor must be aware of the following additional requirements:

What	When	Output
Awareness training (Toolbox Talks)	At least weekly and before hazardous work is carried out	Attendance Register
Health and Safety Committee Meetings	Monthly	Minutes signed by the employer (Contractor) covering: a) Health and Safety Representative Checklist b) Safety report from Safety Officer and Safety Agent

Health and Safety Reports	Monthly	Report covering: a) Incidents/Accidents and Investigations b) Non-conformance c) Health and Safety Training d) HIRA Updates e) Internal and External Audits
General Inspections	As per Health and Safety Specification and OHSA	Report on Health and Safety Specification and OHSA compliance: a) Scaffolding b) Lifting Machinery c) Excavation
General Inspections	Monthly	Covering: a) Firefighting Equipment b) Portable Electrical Equipment c) Ladders
Record keeping	Ongoing	Covering: a) General complaints b) Fines c) General incidents d) MSDS e) Surveillance Medicals f) Inspection Register g) Dept of Labour Notices
Permits	Before commencement with certain activities	As stipulated by the Health and Safety Specification and the OHSA / Construction Regulations

Key:

OHSA – Occupational Health and Safety Act, 1993

ANNEXURE A – REQUIREMENTS FOR THE SAFETY PLAN ASSESSMENT

The Contractor must note that the information below is pertinent to the compilation of their safety plan response to this site-specific safety specification and it would be preferred if the Safety Plan is written in the order of the assessment documented below.

No	Item	Notes
1	**Project Directory**	Please state details of Project Client, Project Manager / Principal Agent, Safety Agent, Consulting Engineer, etc. (Name, address, contact details).
2	**Contractors Directory**	Please indicate if you will be using Contractors on this project, if yes, include their details, trade, and FEM details.

No	Item	Notes
3	**Other Parties Directory**	Please indicate contact details for any services applicable (electricity, water, etc.) as well as Department of Labour and Emergency Services.
4	**Project Safety Statement**	The Project Safety Statement must be included in the Safety Plan.
5	**Health and Safety standards for the project (OHS Act, construction regulations, basic conditions of employment, etc.)**	Health and Safety standards must be included in the Safety Plan.
6	**Project Particulars**	Scope of works must be included in the Safety Plan. This is critical.
7	**Existing environment – Structures and Surroundings, Services (Electrical, Water, Sewerage, etc.), Traffic Arrangements, Parking, Access to Site, Storage of Plant and Materials**	Please include these items in the plan. The items must be Site Specific, the location of services and services that will be affected must be mentioned.
8	**Management Structure for safety on the Project**	A structured organogram with names of the responsible people must be included.
9	**Appointed Persons, Supervision**	The required appointments must be identified. A list of the appointed persons must be included in the Safety Plan.
10	**Security Procedures**	Please indicate if a security company will be appointed and include the contact information in the Safety Plan.
11	**Registers list and inspection frequency**	A list of the Inspection Registers that will be on file must be included in the Safety Plan.
12	**Design Co-ordination**	Please indicate your procedure for implementation of design changes by designer on the project, and the procedures for liaison and implementation of temporary works design on the project.
13	**Contractor Co-ordination**	Mention must be made of how Contractors will be co-ordinated on site to ensure that they work together and not adversely affected health and safety.
14	**Housekeeping, stacking and storage**	Housekeeping policies and procedures must be included in the Safety Plan.
15	**Waste Disposal Arrangements**	Waste disposal arrangements procedures must be included in the Safety Plan.

No	Item	Notes
16	**Noise and dust control**	Please indicate if any noisy operations (more than 85 decibels) will be carried out and what measures will be used to reduce noise exposure to workforce.
17	**Training Requirements**	Training requirements must be identified and recorded.
18	**Plant and Equipment**	A list of plant and equipment to be used on site must be included in the Safety Plan.
19	**Safety Monitoring Arrangements**	The name, contact details and SACPCMP registration status of the Safety Officer must be included in the Safety Plan. State how often the Safety officer will be on site (note safety specification requirement in section 1.7).
20	**Information for Contractors**	State how information will be given to Contractors on site.
21	**Consultation/communication arrangements with Employees**	State how information will be given to employees e.g., notice board.
22	**Selection of Contractors Procedures**	Principal contractor must state what health and safety procedures they will use to assess the competence and resources of their contractors on site.
23	**Activities with risk to Health and Safety (Risk Assessment)**	A Baseline Risk Assessment must be included in the Safety Plan, it must address the Risks identified in the Safety Specification as well as the risk of any other hazards that the Principal Contractor is aware of that are relevant to the site.
24	**Hazardous Substances**	Must be listed in the Safety Plan and addressed in the Risk Assessment.
25	**First Aid and Medical Procedures**	Please indicate name of first aider, position of first aid box, location of nearest medical facility and emergency numbers.
26	**Fire and Emergency Procedures**	List of emergency telephone numbers must be drawn up and included in the Safety Plan. The position of Fire Extinguishers, Assembly Point location, fire drill frequencies, numbers of fire marshals, etc.
27	**Accident and Incident Reporting and investigation**	State the Accident and Incident Reporting and investigation procedures of your company.
28	**Welfare and Site Facilities**	Elaborate on toilets and eating areas, water provision, how will workers be protected during wet weather conditions etc.
29	**Site Rules**	The Site Rules must be included in the Safety Plan.
30	**Personal Protective Equipment**	The necessity must be identified by Risk Assessments.

No	Item	Notes
31	**Health & Safety File arrangements**	Please indicate arrangements for the return of the Health and Safety File to the safety agent at the end of the project.

No	Item	Notes
32	**Method Statements/Safe System of Works**	A list of Method Statements/Safe System of Works must be included in Safety Plan for all High-risk activities
33	**Permits and wayleaves**	List of activities that Principal Contractor anticipates will require permits and wayleaves (including those stated in the safety specification) to be included.
34	**Fall Prevention and Protection Plan and Fall Rescue Plan**	A copy of the Fall Prevention and Protection Plan, fall rescue plan and fall risk assessment must be included in the Safety Plan.
35	**Demolition method statement**	A copy of the Demolition Method Statement must be included in the Safety Plan.
36	**Confined spaces**	The Principal Contractors' procedures for managing access, egress and work in confined spaces must be specified in the Safety Plan. Includes permit procedures, air monitoring, PPE, etc.
37	**Safety Representatives and Safety Committees**	When a project has more than 20 employees a designated employee must be chosen by the labourers to represent them. A safety committee must be established if 2 or more safety representatives are appointed. Please note Safety Specification requirements regarding this section (section 2.12).
38	**Have the significant hazards from the safety specification been addressed?**	See section 1.9 of the Specifications and ensure practical measures have been detailed in the safety plan.
39	**Safety File - Safety Policies in File and Signed by 16(1) CEO.**	Safety Policies must be signed and explained to employees.
40	**Safety File - A copy of the valid Letter of Good standing from FEM / Workman's Compensation must be on file.**	A copy of the valid Letter of Good standing from FEM / Workman's Compensation must be on file.
41	**Safety File - Signed copy of the 37.2 Mandatary Agreement**	A 37.2 Mandatary Agreement needs to be signed between the Client and the Principal Contractor.
42	**Safety File - Appointment letter from Client (as well as 5.1.K)**	The Client must appoint the Principal Contractor in writing.
43	**Safety File – Notification / Permit**	A copy of the Annexure 2 Notification (and proof of submission) to Department of Labour must be available. This can be in the form of a Department stamp, email, or copy of Construction Work Permit.

CONTROL MEASURES THAT MUST BE INCLUDED FOR SAFETY PLAN SUBMISSION PURPOSES:

Coordination on Site Relating to COVID-19 matters - refer to latest Regulations regarding Covid-19

Transportation to Site - Procedures for Transportation of Workers to Site – employees should be advised that if using transport, passengers must wear a cloth mask to be allowed entry into the vehicle.

Communication Procedures - Contractor to describe comprehensive induction and toolbox talk procedures to include COVID-19.

COVID-19 PPE on Site - Contractor must describe controls for wearing of PPE on site, including wearing of cloth masks on site - people working and visiting site must be instructed on the correct way of wearing cloth masks, procedure for maintenance and replacement of cloth masks. Note that some surgical masks should be kept on site to give to persons exhibiting COVID-19 symptoms prior to being tested.

NOTE:

Disaster Management Act: Regulations: Transitional measures

Mandatory protocols when in a public place (as updated on 4 April 2022)
67. (1) For the purposes of these Regulations, a 'face mask' means a cloth face mask or a home-made item that covers the nose and mouth, or another appropriate item to cover the nose and mouth.
(2) The wearing of a face mask is mandatory for every person when in an indoor public place, excluding a child under the age of six years.
(3) No person will be allowed to-
(a) use, operate, perform any service on any form of public transport; or
(b) enter or be in a building, place or premises, including government buildings, places or premises, used by the public to obtain goods or services, if he or she is not wearing a face mask.
(4) (a) All persons in an open public space need not wear a face mask but must maintain a distance of at least one metre from another person.
(b) The school environment is excluded from the requirement of maintaining a distance of at least one metre from another person.
(5) An employer may not allow any employee to perform any duties or enter the employment premises if the employee is not wearing a face mask while performing his or her duties.

ANNEXURE B – LEGAL APPOINTMENTS

The contractor shall make the following appointments, as required:

Chief Executive Officer (OSH Act 16(1)
Contract Director/Manager (OSH Act 16(2)
Construction Manager (CR 8(1)
Construction Supervisor (CR 8(7)
Assistant Construction Supervisor (CR 8(8)
Construction Safety Officer (CR 8(5)
Traffic Safety Officer
Safety Representative (where > 20 employees on site)
Construction risk assessor (CR 9(1))
Excavation Supervisor (CR13(1)(a)
Demolition Supervisor (CR14(1)
Scaffold Supervisor (CR16(1)
Construction Vehicle and Mobile Plant Operator (CR23(1)(d)(i)
Controller of Temporary Electrical Installations (CR24(c)
Stacking Supervisor (CR28(a)
Fire Extinguishing Equipment Inspector (CR29(h)
Fall Protection Plan Developer (CR 10(1)(a)
Incident Investigator (OSH Act 9(2)

ANNEXURE C - BASELINE RISK ASSESSMENT FOR PROJECT

IRRESPECTIVE OF THE RISK PRESENTED ON SITE, IT WILL BE ENSURED THAT SUFFICIENT SUPERVISION IS IN PLACE ON SITE, THAT PERSONNEL ARE TRAINED IN ACCORDANCE WITH LEGISLATION, INCLUDING THE REQUIREMENT FOR SITE SPECIFIC INDUCTIONS ON SITE TO INFORM PERSONNEL ON SITE OF THE RISKS AND HAZARDS APPLICABLE TO THE SITE. SITE SUPERVISION IS RESPONSIBLE FOR ENSURING THAT THE CONTROL MEASURES REQUIRED BELOW ARE IMPLEMENTED ON SITE.

	HAZARD	RISK	MINIMUM CONTROL MEASURES
1.	Asbestos Cement Removal	Personnel falling from height Debris falling from height Falls of equipment or tools Release of asbestos fibres	• Notice to be erected informing personnel of fragile roofs, as applicable • Ensure safe access and egress is provided • Erect physical barriers to prevent entry by unauthorised persons and falls from height, as applicable • Roof sheets to be sprayed with water to prevent fibre release, where feasible • Take extreme care to remove sheets whole. Where breakage occurs damp down exposed area to contain fibre release • Personnel involved to wear asbestos respiratory protection • Exclusion zone may be required under area of sheet removal to prevent injury from falls of material from height • Only Department of Labour registered asbestos contractors may work with asbestos, and strictly in accordance with the requirements of the Asbestos Regulations.
2.	Asphalting	Fire Burns to skin Skin disease	• Suitable fire extinguisher to be in place prior to commencement of works • Ensure competent personnel using materials and competent and trained machinery/equipment operators • Ensure there is a safe place of work at all times • Ensure all personnel wear suitable and sufficient personal protective equipment (PPE) including safety boots, reflective vests, and gloves • Health and Safety data sheet required
3.	Bricklaying	Caustic contamination with mortar Contact with sharp bladed tools	• Use only trained personnel • Safe means of access to be provided • Safe/Suitable working platform required where working at height • PPE for mortar to include gloves where practicable and goggles/ masks where there is a risk of contamination
4.	Chainsaw Use	Falling tree or branches causing injury to persons Incorrect use of chainsaw causing injury	• Person using chainsaw must be trained and competent • Use personal protective equipment (PPE) such as goggles, safety boots, ear protection, gloves, hard hat, chainsaw trousers and jacket • Chainsaw must be in good condition including guards. • Clear area below area of chainsaw use and where tree felling is taking place. • When using chainsaw at height practice safety procedures.

	HAZARD	RISK	MINIMUM CONTROL MEASURES
5.	Compacting and Filling	Contact with tipping materials Contact with moving plant Vehicles/personnel falling into excavations Contact with underground services	• Trained banksman to control vehicles movement • Only trained personnel use plant • Personal Protective Equipment to be worn • Personnel to stand clear as materials are being tipped • Use stop blocks and signs to warn vehicles of excavations, where applicable • Stand clear of plant whilst materials are being compacted • Establish position of underground services and protect services from damage •
6.	Compactor Operations	Crushing of feet	• Only trained and competent personnel to use the machine • Ensure operative wears steel toe cap shoes or boots at all times
7.	Cutting Kerbs	Saw slipping, Blade disintegrating, Noise, and Dust	• Only trained operators to use saw and change blades. • Personal Protective Equipment must be worn. Gloves, goggles, dust mask and hearing protection. • People to be kept away from the work area. • Work to cease if people have to pass. • Sparks, etc. to be directed away from people and any flammable material.
8.	Cutting Off Disc	Noise Cuts from machine Fire (particularly at refuelling) Flying debris Blade shattering Contamination by fume created or exhaust fume	• Use competent personnel. • Hot works control- fire extinguisher, fire watchman. (Permit may be required) • PPE to include gloves, eye protection, hearing protection • Solid working position. • Clear working area • Correct grade of blade must be used. • Good ventilation to be provided (forced if necessary). • Changing of wheels to be by competent persons only • Cut off discs must not be used for grinding (grinding disc thicker) • Bystanders to wear hearing protection, as applicable
9.	Electrical Commissioning	Electric shock	• Personnel to comply with permits to work issued by Client • Personal protective equipment to be worn by employees to prevent electric shock • First aid treatment to be readily available • Only competent and trained persons may decommission or commission electrical equipment
10.	Electric Tools and Electrical Installations	Electric shock Fire	• Electric tools and installations to be in good condition • Inspect electric tools before use • Do not use electric tools in wet/damp conditions • Use personal protective equipment such as insulated gloves • Electrical installations register to be maintained, inspected by competent person
11.	Excavations (Working in and around)	Toxic fumes Collapse of trench walls/trapping Falling into excavation Collapse of adjacent structures	• Deep excavations / monitor air for toxic fumes • Prevent collapse by battering back sides to a safe angle or install temporary support • Protect vehicles from falling into excavations – provide barriers, signage, etc. as necessary • Beware of undermining of other structures (e.g., buildings, scaffolds) • Record excavation inspections by competent person on daily basis • Provide suitable means of access/egress in case of emergency. • Excavations formed by explosives must be accompanied by method statement approved by Client
12.	Explosive Actuated Fastening Devices	Noise Being struck by cartridge or fixing	• Operators to be trained, competent and wear appropriate protective equipment, e.g., goggles, gloves, ear defenders, head protection.

	HAZARD	RISK	MINIMUM CONTROL MEASURES
			• Cartridge gun to be in good condition, inspected for damage and faults regularly and results entered into register • Used and unused cartridges and cartridge gun should be kept in secure place when not in use, maintain register for return and issue.
13.	Fire	Injuries to workers, pedestrians, residents, road users, damage to property through fire	• No littering on site which could become fire hazard, maintain site in clean condition. • No fires to be lit on site. Have a working fire extinguisher at hand at all times. • No smoking or naked flame near flammable substances or in unauthorised areas • Ensure proper storage/use of Petrol/diesel/flammable substances – post warning notices
14.	Flammable Liquids and Gases (Use of)	Fire Explosion	• No littering on site which could become fire hazard, maintain site in clean condition. • Have a working fire extinguisher at hand at all times. • No smoking or naked flame near flammable substances or in unauthorised areas • Ensure proper storage/use of Petrol/diesel/flammable substances – post warning notices • Equipment must be in good condition, maintained • Personnel using substances must be trained in safe use and risks
15.	Hand tools	Injuries caused by use of hand tool Impact with the tool Falls due to access problems Contamination with substance being worked	• Ensure: • Tool is correct for job • Tool is in good order and suitably sharp • Personnel must be competent/instructed in tool usage and tool safely • Lighting is sufficient • Access is safe, working platform is secure, leading edge is guarded • Operative is wearing all necessary PPE
16.	Hazardous Substances	Injuries to workers through use of hazardous substances, e.g. injuries to eyes, skin, etc.	• Use substances in accordance with data sheet, particularly reference protective clothing required (example: gloves, goggles, etc.) • Know what First Aid measures are • Have welfare facilities available for washing of hands, etc.
17.	Hot Works	Burns to eyes or other parts of the body	• Personal Protective Equipment to include eye, skin, and hearing protection • Respirator maybe be required where cutting galvanized steel or anywhere else toxic fumes and gases arise. Dust can also be a problem and forced ventilation may be required.
18.	Kerb Laying	Nips at joints Crushing by kerbs Caustic burns	• Impervious gloves and barrier cream to be used to protect hands. • Personnel should be aware of safe manual handling techniques when handling kerbs.
19.	Lifting Operations	Falling material Crushing by materials Hand injuries to the slinger Toppling crane	• Check test certificate • Check examination certificate • Check inspection have been carried out • Check certificates for lifting equipment (chains, slings, shackles, etc.) • Ensure lifting gear is rated to carry load (SWL) • Ensure materials being lifted are properly packaged and slung. • Be aware that there should be a minimum clearance of 600mm between any slewing parts of a crane and any fixed installation to prevent being trapped. • Access to the work area during lifting operations is to be restricted to those involved with and trained in the work in hand. Do not allow members of the public to gain access to the area. • Only trained banksmen to be used.

	HAZARD	RISK	MINIMUM CONTROL MEASURES
			• The crane driver and the banksman are to ensure that the signals given are clearly understood.
20.	Manual Handling of General Items	Muscular skeletal injuries if the load is too heavy or awkward Operative falling/ tripping Contamination from the substance being carried Fall of material being carried	• Personnel should be aware of safe manual handling techniques • Personnel to wear Personal Protective Equipment when carrying items, e.g. safety footwear and gloves. • Ensure good housekeeping against tripping/fall hazards. • Operative to get assistance if load too heavy- team lift if necessary. • Utilise mechanical lifting and carrying aids where possible. • Personnel to ensure access equipment, ladders will take weight of operative and load being carried. • Personnel to ensure item being carried is properly bonded or is not liable to break apart whilst being manually handled.
21.	Members of Public – Protection of	Injury to member of public and road users from site works	• Barriers and signage to be in place • Workers must warn away any members of public from the works • Footpaths and bridges which are open to public must be closed off if in area of works or otherwise made safe so that no injury occurs to members of public • Traffic turning into site – traffic management and signage as required. • Signage to be on road at site entrance warning motorists that construction traffic turning into/out of site access. Keep roads free of mud where possible • Refer to plant risk assessment for details on plant safety precautions • NOTE: SIGNAGE TO BE POSTED ON SITE TO WARN OF CONSTRUCTION TRAFFIC MOVEMENTS. SAFE MEANS OF ACCESS FOR BOTH CONSTRUCTION TRAFFIC TO SITE AND PRIVATE HOMEOWNERS MUST BE AGREED.
22.	Mobile Crane Erection and Dismantling and Use	Collapse of structure Overturning of structure Falling materials	• Ensure emergency procedures are in place and all operatives are aware of the details • Only use trained and competent operators for the erection and dismantling and use of cranes • Ensure crane driver is trained and holds certification as proof. Must have valid medical certificate of fitness. • Ensure there is safe means of access available at all times • Ensure the mobile crane driver has 360° vision if not ensure a fully trained banksman is used • Banksman to wear reflector vest to identify himself to the crane driver • Ensure all personnel wear suitable and sufficient personal protective equipment • Consider creating exclusion areas
23.	Night Work	Security Lighting	• The Contractor shall not undertake any night work without prior arrangement and a written permit from the Client. • The Contractor shall ensure that adequate lighting is provided for all night work and failure to do so shall result in work being stopped.
24.	Noise and Dust	Breathing in dust can cause long term health problems, noise can damage hearing	• Wear respiratory and hearing protection • Dampen down and minimise dust where possible.
25.	Overhead Services (Working near)	Contact with live services causing injury to personnel Damage caused to services	• Maintain safe clearance levels • Establish presence of any services via proper walk-through survey of site and/or means of service drawings • Wear personal protective clothing • Ensure height of plant/vehicles does not compromise or exceed clearance levels for overhead services

	HAZARD	RISK	MINIMUM CONTROL MEASURES
			• Obtain information on clearance levels from service provider
26.	Painting	Contact with paint	• Refer to safety data sheet for usage instructions, hazards and precautions required. • When working at height, refer to risk assessment addressing this hazard below.
27.	Paving (Laying)	Impact injuries from tile / mallet Caustic burns Sore knees Cuts from cutter	• Impervious gloves to be worn/ barrier cream to be used • Kneelers or similar to be available • Personal protective equipment to be worn – for example if saw used to cut pavers
28.	Plant or Vehicles and Equipment Operation	Workers injured by passing traffic Road users and pedestrians at risk from plant operation Noise	• Implement traffic protection measures • Trained and competent operators must be used • Check plant and vehicles on daily basis before use and record inspections. Maintain vehicles in safe condition. • Medical certificates of fitness required for construction plant. • Crossing of road by construction vehicles or machines must be limited to the practical minimum • Plant and vehicles must be fitted with amber rotating beacons and reverse alarms. • Wear appropriate protective clothing/equipment, e.g., goggles, gloves, ear defenders, etc. as appropriate.
29.	Plastering	Falling materials Fall from height Contact with materials	• Ensure standard safety procedures are followed • Ensure there is a safe working area • Ensure safe access and egress • Ensure competent personnel are used
30.	Plumbing	Falling material Falling from height Fire Burns Exposure to lead fumes	• Ensure standard safety procedures are followed at all times • Only used trained and competent personnel • Ensure there is a safe working area at all times • Ensure materials are stored neatly • Ensure there is safe access and egress at all times • Ensure all personnel wear suitable and sufficient personal protective equipment • Consider a hot works permit system prior to commencing any hot works • Make sure emergency procedures are in place and ensure all personnel are aware of where to go in case of a fire
31.	Scaffold Erection/ Dismantling	Personnel falling from a height Items of scaffold falling onto personnel Scaffold collapsing onto those below	• Ensure • scaffold is designed to take the imposed loads • scaffolding is constructed properly • scaffold is not overloaded • scaffolders are fully trained • scaffolding is regularly checked by competent person and record of inspection retained. Written inspections to be recorded on weekly basis • scaffolders must adhere to the safe systems of work. • all fall arrest equipment to be checked and certified in good working order • that ALL understand the safe system of work
32.	Site Strip	Overturning Vehicles	• Follow standard safety procedures • Only use trained and competent personnel • Ensure there is a suitable and safe means of access and egress • Ensure banksman used when required • Ensure all personnel wear suitable reflector vests as required
33.	Steel Erection	Falls from height Falling components Contact injuries from falling lifting equipment	• Adhere to all general precautions for working at height (See risk assessment below) • Barrier off / exclude area below work • All lifting appliances to be examined and inspected • Inspection register in place and up to date • All personnel to be trained and competent and wear clipped on safety harnessed when working at height

	HAZARD	RISK	MINIMUM CONTROL MEASURES
			• Ensure that lifting equipment (slings, chains, shackles) test certificates are current and on site. • Competent persons only to connect loads and direct plant
34.	Steel Fixing	Back injuries caused by manual handling Eye injuries from tie wire Trips / falls Falling form height	• PPE must include safety boots and goggles • Manual handling training may be required • Care to be taken when working near overhead lines • Use only trained personnel • Provide safe means of access • Maintain and regularly inspect all lifting appliances and equipment • Cap starter bars to prevent injuries where feasible • Construct scaffold walk ways to cross reinforcing mesh, as required
35.	Tower (Mobile Aluminium Tower) Scaffold	Overturning Falls	• Tower to be on firm level ground with wheels or feet properly supported. • Height not to exceed 3 times the base dimension. i.e., 2x3m Base Tower not exceed 6m. • Erection by competent person • Inspection before first use • Weekly record of inspection required • Guard rails and Toe boards as per normal scaffolds • Beware when moving of overhead obstructions, such as power lines • Never move in strong winds
36.	Troxler – use of	Radiation exposure Transportation and storage of nuclear equipment Working in road	Ensure • Training of Troxler gauge operators in basic radiation safety and correct operating procedure to satisfactory level of competence • An enclosed vehicle must be used for transport of the gauge • After use and before storing the gauge, a visual check to be carried out to confirm shutter is properly closed • Warning signage to be displayed at entrance to store indicating presence of radioactive material • Wear reflective vests when working in or near the road or road shoulder as well as any other required personal protective clothing.
37.	Underground Services	Striking of buried services	• Make all necessary enquiries to establish what services are in the area. Consult drawings and advice from service provider (e.g., Municipality or ESKOM) when planning work. • Assume all service to be live (Unless confirmation is received to confirm that services are isolated or otherwise made safe). Do not work near live services without authorisation from site management. • Comply with the requirements of the safe system of work for underground services. • Where available, locate services with a locator • Hand dig around services
38.	Working at Height	Personnel falling form height Falling debris Those beneath being injured	• All access equipment is properly constructed (inspections record must be maintained) • Only trained personnel construct, dismantle or control the access equipment • All access equipment must have full toe boards and guardrails - comply with SANS 10085 on erection, use and dismantling of scaffolding • No access equipment may be loaded above the level of the guardrail • No access equipment to be loaded above its safe working load • Where work involves leaning out on an open leading edge, then all personnel are to be fitted with full body harness. The harness must be connected at all times • All fall arrest equipment to be correctly maintained • Ensure if ladders are being used for access, they are either footed or tied. Also, the ladder must be set at the correct level of 1 in 4 or approximately 75°

ANNEXURE D - BASELINE RISK ASSESSMENT FOR PROJECT – COVID-19

IT MUST BE ENSURED THAT SUFFICIENT SUPERVISION IS IN PLACE ON SITE, THAT PERSONNEL ARE TRAINED IN ACCORDANCE WITH LEGISLATION, INCLUDING THE REQUIREMENT FOR SITE SPECIFIC INDUCTIONS ON SITE TO INFORM PERSONNEL ON SITE OF THE COVID 19 RISKS AND HAZARDS APPLICABLE TO THE SITE. SITE SUPERVISION IS RESPONSIBLE FOR ENSURING THAT THE CONTROL MEASURES REQUIRED BELOW ARE IMPLEMENTED ON SITE.

No.	HAZARD	MINIMUM CONTROL MEASURES
1.	COVID-19 - Contracting COVID-19, person to person transmission	• Do not share tools / equipment, crockery/cutlery/towels/bedding or anything that can facilitate the spread of the virus. • Masks have not been proven to definitively protect against every contagion. However, masks prevent a person from unconsciously touching their eyes, nose, and mouth, so they may offer a measure of protection. Masks are for single use only, not to be worn two days in a row. • Avoid touching your eyes, nose, and mouth and shaking hands with others. • Cough or sneeze into a tissue and dispose thereof safely into a bin provided. • Wash your hands frequently with soap and running water for no less than 20 seconds. If you have none available use a hand sanitizer with at least 70% alcohol. • Apply social distancing principles, stay at least 1m away from people/employees were possible. • Avoid crowds and gatherings. • Clean frequently touched objects/surfaces. • The following cleaning products can be used: ***Hypochlorite (e.g., Household Bleach)*** ***Alcohol (70%)*** ***Hydrogen Peroxide*** ***Phenolic Compounds*** ***Quaternary Ammonium Compounds***

No.	ACTIVITY	HAZARD	MINIMUM CONTROL MEASURES
2.	Occupational Health	Older workers of 60+, workers with underlying auto-immune or chronic diseases are at increased risk of infection (note that workers may be symptom free but infected with COVID-19)	• Induction, toolbox talks to be done on topics relating to COVID-19, personal hygiene, and PPE.
3.	Labour	Underlying auto-immune or chronic diseases, socio-economic status, having to use public transport to get to work	• Induction, toolbox talks to be done on topics relating to COVID-19, personal hygiene, and PPE. • Public transport must comply with government guidelines ref wearing of masks.

No.	ACTIVITY	HAZARD	MINIMUM CONTROL MEASURES
4.	Transportation (Public and on Site)	Maximum allowed capacity exceeded; No facilities for sanitising vehicles and passengers; No additional protective measures available, e.g., face masks; Unlicensed drivers and operators	• Selection and provision of transport services compliant with gazetted requirements; Policy and procedures and rules for travel, where possible to limit the use of public transport, or to arrange selective methods of transport, ongoing toolbox talks and supply of cloth masks to be worn when travelling or moving on and off site.
5.	Waste Management	Spreading of virus and contact with virus causing infection from handwashing, drying hands, cleaning equipment, disposal of contaminated waste and other related aspects	• Establish and follow protocols for disposal of potentially infected waste (receptacles). Awareness through notices (posters) regarding correct procedures of waste disposal. Competent supervision and adequate awareness training required. Provide adequate supplies of material and consumables, provision of sealable disposal containers/bags through appropriate waste removal company. Provide adequate supply of paper towels. If contractors used ensure appropriate management.
6.	Signage	Unauthorised entry to site and work areas compromising workers health (contamination). Acts and behaviour that compromises worker	• Installation of posters and signage with the site rules and protocols that need to be maintained at strategic points.
7.	Welfare Facilities	Spreading of virus and contact with virus causing infection	• Limiting of personnel on site to minimum number required to maintain control and management. Implement and maintain cleaning and disinfecting programme.
8.	Use of Personal Protective Equipment	Risk of spread of droplet infection through coughing, sneezing when in close contact with other people	• No employee/ visitor will be allowed on site without a cloth mask. Adequate training must be provided in the correct use and disposal of these masks. Cloth masks must be washed and ironed. Where possible face shields should be used to protect mouth, nose, and eyes. Regular cleaning of face shields required. • No sharing of PPE will be permitted. Adequate supervision required. COVID PPE does not replace conventional PPE.

ANNEXURE E – GUIDELINES TO HEALTH AND SAFETY BILL OF QUANTITIES

DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
				R	C
Preparation of principal contractor's site-specific health and safety plan, safety file, risk assessments, fall prevention/protection plan, Annexure 2 notification to Dept of Labour, demolition method statement, other method statements requested to be prepared for safety reasons, permits, amendments to safety plan during course of project, traffic management / accommodation plans, and any other legally required health and safety documentation	Lump sum	Lump sum			
Provision of safety documentation required of the principal contractor for Construction Work Permit application by the safety agent of Dept of Labour, if applicable (note section 2.4 of this safety specification document)	Lump sum	Lump sum			
Provision of current workman's compensation cover for employees for the project, and ensuring that contractors appointed have such cover too	Lump sum	Lump sum			
Health and safety management of principal contractor's employees, visitors, and contractors' employees on site.	Lump sum	Lump sum			
Provision of full time Construction Manager for site, provision of Alternate Construction Manager in absence of Construction Manager and provision of sufficient safety supervision on site	Lump sum	Lump sum			
Provision of full time/ part time SACPCMP registered Construction Health & Safety Officer for site (refer to safety specification for full time / part time requirement) and preparation of safety reports after each safety inspection	Lump sum	Lump sum			
Competence assessment, appointment and required competence and safety training of all principal contractor's legally required appointments for site	Lump sum	Lump sum			
Maintenance of principal contractor's plant and equipment on site so as to be in safe condition, including inspection registers, inspections by competent persons, thorough examination certificates, hand over certificates and related documentation	Lump sum	monthly			
Provision of general safety signage (e.g., first aid, firefighting, traffic safety, excavations, PPE, Assembly Point, noise zones, etc.)	Lump sum	monthly			

DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
				R	C
Provision of medical certificates of fitness for employees on site (Annexure 3)	Lump sum	Lump sum			
Provision of personal protective equipment (PPE) by principal contractor to employees and, as applicable, visitors to site, incl. • reflective vests	Lump sum	Lump sum			

• hard hats • protective footwear • hearing protection • respiratory protection • safety eyewear • gloves • overalls • Safety harnesses and lanyards • Sunblock • UV Protective clothing / hats / eye wear • Protective thermal wear (heat / wind / cold / rain) • Protective firefighting clothing • Arc flash and electrical protective clothing					
Provision of Fall Prevention and Protection Equipment including. • Rope • Lifelines & Self-Retracting Lifelines (SRL) • Anchor Points • Warning Lines & Area demarcation • Fall Arrest Accessories • Fall Rescue Equipment • Passive Fall Protection Equipment • Confined Space Rescue and Retrieval (In elevated work situations) • Etc.	Lump sum	Lump sum			
Provision of Confined Space work equipment & Training • Training • Air Monitoring Equipment • Ventilation Equipment • Entry Equipment • Personal Protective Equipment • Confined Space Rescue and Retrieval Equipment • Communication Equipment • Etc.	Lump sum	Lump sum			
Holding of safety meetings with safety representatives and safety officers on site on at least monthly basis	Lump sum	monthly			

DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
				R	C
Principal contractor construction safety management attendance at health and safety meetings called by client, professional team, or safety agent	Lump sum	monthly			
Provision of site-specific health and safety induction training for all on site	Lump sum	Lump sum			
Conducting of toolbox talks to employees on health and safety issues on a weekly basis	Lump sum	Lump sum			
Provision of sufficient First Aiders for site as per legal requirements	Lump sum	Lump sum			
Provision of First Aid Boxes for site as per legal requirements	Lump sum	Lump sum			
Provision of sufficient fire extinguishing equipment for site	Lump sum	Lump sum			
Fire drills on site at least 6-monthly basis for duration of project	Lump sum	Lump sum			
Provision of welfare facilities for site (drinking water, toilets, soap, means of drying hands, toilets paper, sheltered eating areas, etc.)	Lump sum	Lump sum			
Provision for safe disposal of waste, spill kits, safe housekeeping, and storage practices	Lump sum	Lump sum			
Provision of leading-edge protection, covers to prevent falls	Lump sum	Lump sum			
Provision of fencing at site camp and to protect excavations	Lump sum	Lump sum			
COVID-19 measures – provision of respiratory protection (as required, refer to safety specification)	Lump sum	Lump sum			
Compilation of consolidated Safety File at Close Out stage and handover of file to safety agent in hard copy or digital format	Lump sum	Lump sum			
Supply of safety caps on all exposed re-bar	Lump sum	Lump sum			
Any other compliance item in site specific safety specification issued by project client/ safety agent with potential cost implication	Lump sum	Lump sum			
• Item 1					
• Item 2					
• Item 3					
• Item 4					
• Item 5					
Principal contractor's general compliance with respect to the Occupational Health and Safety Act, Construction and other health and safety Regulations apart from other provisions in this bill.	Lump sum	Lump sum			
SUMMARY TOTAL OHS COST PROVISION					

ANNEXURE F – SAFETY SPECIFICATION AND BASELINE RISK ASSESSMENT ISSUE REGISTER

Date of Original Safety Specification Compilation	Compiled By	Issue Date
08 April 2022	John McGregor	08 April 2022

Revision Summary	Revised By	Revision Date

Acknowledgement:

I, _____representing

_____(Contractor), have satisfied myself with the content of this Health and Safety Specification and shall ensure that our employees and contractors on site comply with the requirements of this document, our safety documentation and health and safety legislation.

_____ _____

Signature of Contractor Date

Comments:

_____

_____

_____

_____

_____

_____

_____

Part C7: Drawings

PART C7: DRAWINGS 262

The Works shall be carried out in accordance with the following drawings which are included in Part C7: Drawings and form part of the contract documents:

Table 3.2.1: List of Drawings

Architectural

B.1 – Montagu_Site and roof layout
B.2 – Montagu_Ground Story layout
B.3 – Montau_Sections layout
B.4 – Montagu_Elevation layout
B.5 – Montagu_Services layout
C.1 – Bonievale_Site and roof layout
C.2 – Bonnievale_Ground Story layout

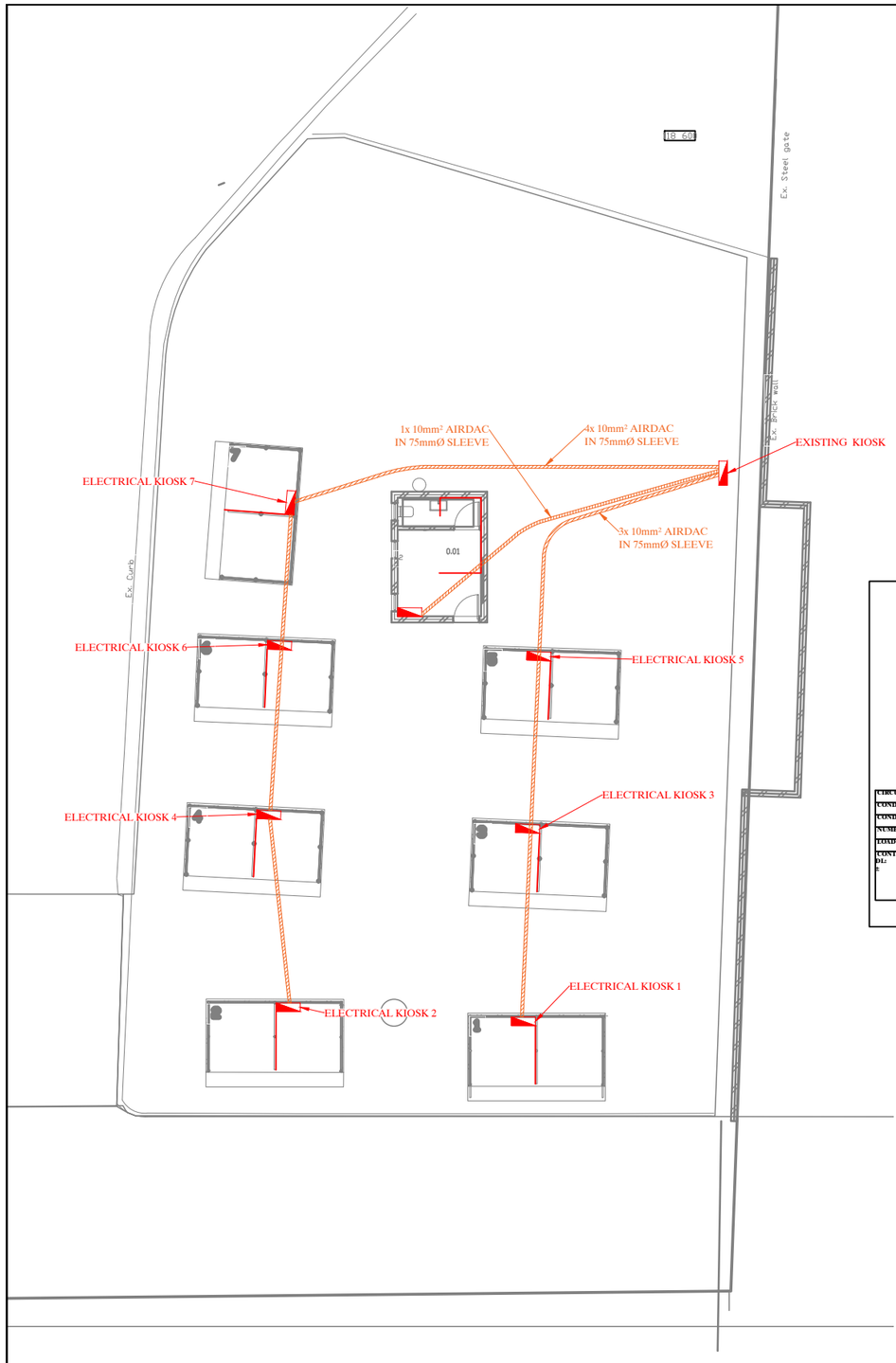
Electrical

22C069-E10 – Electrical Engineering Services: Bonnievale – LV Reticulation
22C069-E11 – Electrical Engineering Services: Bonnievale – Lighting layout
22C069-E20 – Electrical Engineering Services: Montagu – LV Reticulation
22C069-E21 – Electrical Engineering Services: Montagu – Small power and lighting

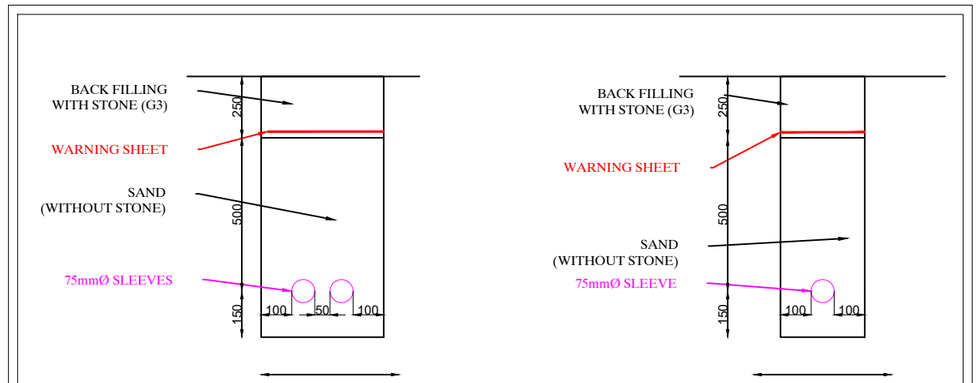
Structural and Civil

UDS543/S/01 – Bonnievale – Foundation and surface bed layout
UDS543/S/02 – Montagu – Foundation and surface bed layout
UDS543/C/01 – Bonnievale – New and existing services
UDS543/C/02 – Montagu – New and existing services
UDS543/C04 – Typical details

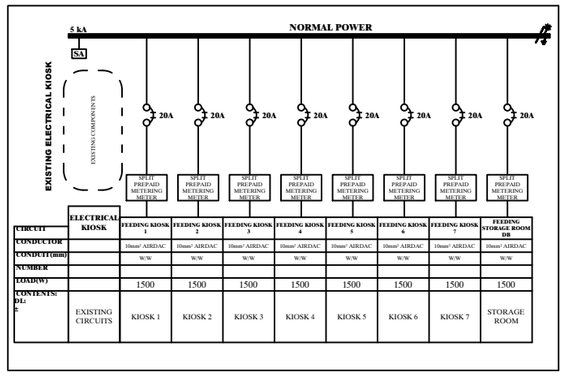
(The drawings will be made available electronically by UDS Africa to all tenderers present at the compulsory Site Clarification Meeting)



BONNIEVALE - LV RETICULATION



TYPICAL TRENCH DETAILS

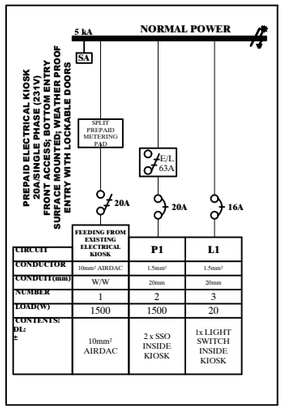


CIRCUIT	ELECTRICAL KIOSK	FEEDING KIOSK 1	FEEDING KIOSK 2	FEEDING KIOSK 3	FEEDING KIOSK 4	FEEDING KIOSK 5	FEEDING KIOSK 6	FEEDING KIOSK 7	FEEDING STORAGE ROOM DB
CONDUCTOR		10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC
CONDUIT(mm)		W/W	W/W	W/W	W/W	W/W	W/W	W/W	W/W
NUMBER									
LOAD(W)		1500	1500	1500	1500	1500	1500	1500	1500
CONTENTS: DL: P	EXISTING CIRCUITS	KIOSK 1	KIOSK 2	KIOSK 3	KIOSK 4	KIOSK 5	KIOSK 6	KIOSK 7	STORAGE ROOM

EXISTING ELECTRICAL KIOSK

CIRCUIT	FEEDING FROM EXISTING ELECTRICAL KIOSK	P10	O/L 1	L10
CONDUCTOR	10mm² AIRDAC	2.5mm²	1.5mm²	1.5mm²
CONDUIT(mm)	W/W	20mm	20mm	20mm
NUMBER	1	2	3	4
LOAD(W)	1500	1500	40	40
CONTENTS: DL: P	10mm² AIRDAC	SSO	OUTSIDE LIGHTING	LIGHTING

STORAGE ROOM DB



CIRCUIT	FEEDING FROM EXISTING ELECTRICAL KIOSK	P1	L1
CONDUCTOR	10mm² AIRDAC	1.5mm²	1.5mm²
CONDUIT(mm)	W/W	20mm	20mm
NUMBER	1	2	3
LOAD(W)	1500	1500	20
CONTENTS: DL: P	10mm² AIRDAC	2 x SSO INSIDE KIOSK	1x LIGHT SWITCH INSIDE KIOSK

TYPICAL ELECTRICAL KIOSK

LOCALITY PLAN
N.T.S



GENERAL NOTES:

- 10mm² AIRDAC (L,N,E, DATA) IN 75mmØ KABELFLEX SLEEVE @ 750mm BELOW FFL
- 20mm BOSAL CONDUIT
- 10mm² AIRDAC SUSPENDED @3000mm AFFL
- DISTRIBUTION SWITCHBOARD

NOTE: NEW ELECTRICAL KIOSKS TO CONTAIN 1x SPLIT METERING PAD, 1x RSA/EU COMBINED SWITCHED SOCKET OUTLET AS WELL AS 1x SINGLE LEVER LIGHT SWITCH.

DRAWING ISSUE:	07/04/2022		
PRELIMINARY		**TENDERS**	■
APPROVAL		**CONSTRUCTION**	
COORDINATION		**AS BUILT**	

ELECTRICAL DESIGN: M. VAN BOSCH
CAD OPERATOR/DESIGN: F.ENSLIN
APPROVED ENGINEER: D. MULLER PR. ENG
APPROVED CLIENT:

AMENDMENTS:

DATE:	NO:	DESCRIPTION:	APPROVED:

DM CONSULTING ENGINEERS www.dmce.co.za
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KLERKSDORP, 61 AMETIS STREET WILKOPPIES,PO BOX 7381, FLAMWOOD, KLERKSDORP, 2572
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ECSA

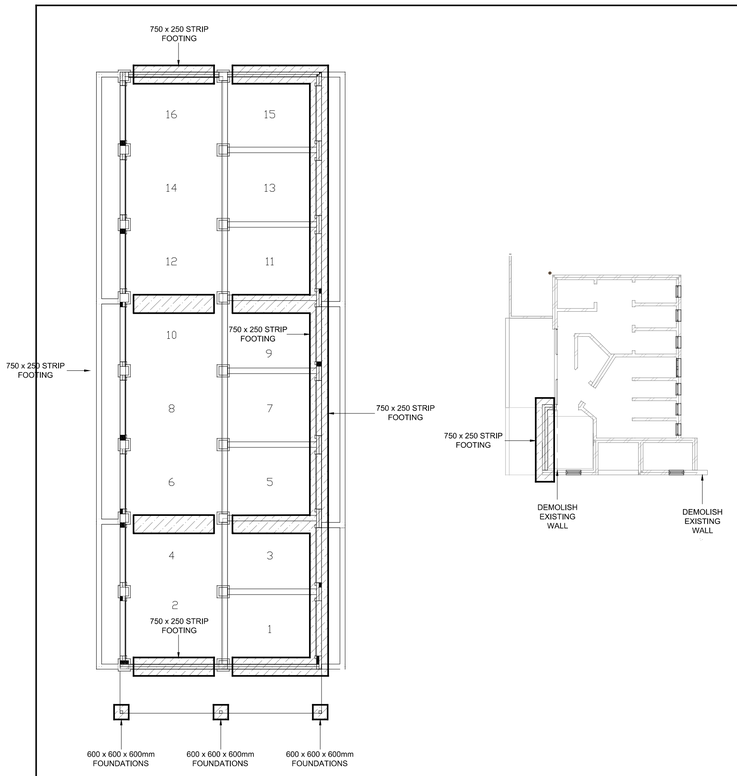
CLIENT:

PROJECT:
LANGEBERG MUNICIPALITY
TRADING STALLS

NORTH:

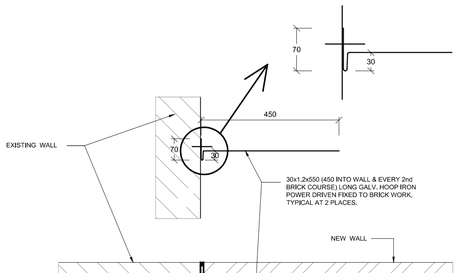
FULL DESCRIPTION OF DRAWING:
ELECTRICAL ENGINEERING SERVICES:
BONNIEVALE - LV RETICULATION

ARCHITECTS NO:	DATE:
003/MMA/22/REV0	07/04/2022
SCALE: 1:200 (A3); 1:100 (A1)	**SITE:** BONNIEVALE
DRAWING NO: 22C069-E10	**REV:** 0



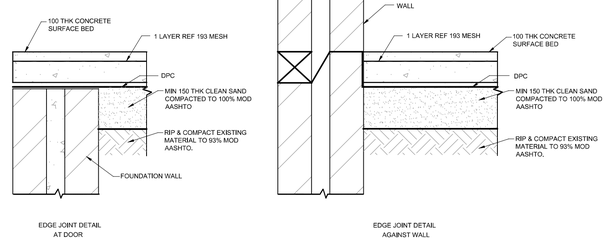
FOUNDATION LAYOUT

SCALE 1:125



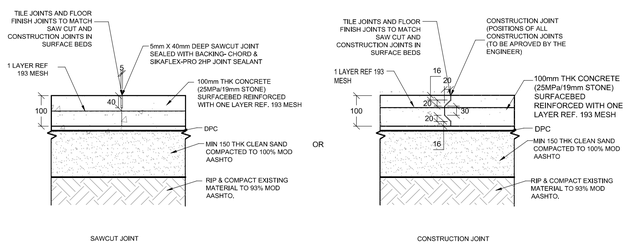
WALL JOINT

SCALE 1:10



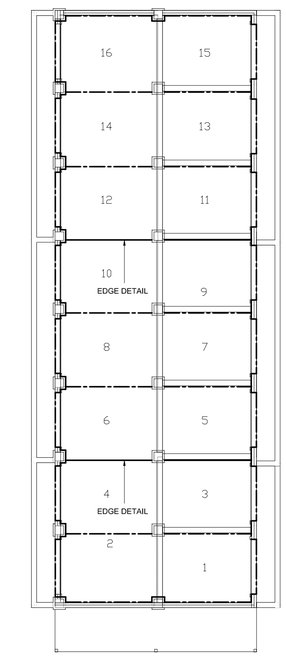
DETAIL 01

SCALE 1:10



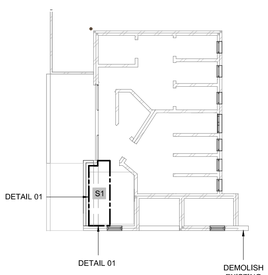
DETAIL 02

SCALE 1:10



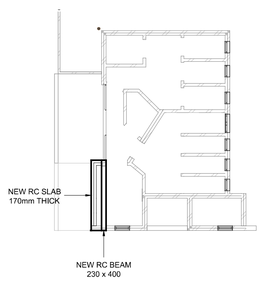
NOTE (S1):

100 THICK JOINTED 25MPa/19mm CONCRETE SURFACE BED. REINFORCED WITH ONE LAYER REF. 193 MESH (SURFACE BED TO BE PLACED ON 150 THK G7 COMPACTED TO 100% MOD AASHTO.)



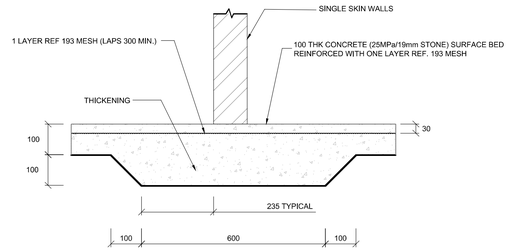
SURFACE BED LAYOUT

SCALE 1:125



BEAM & SLAB LAYOUT

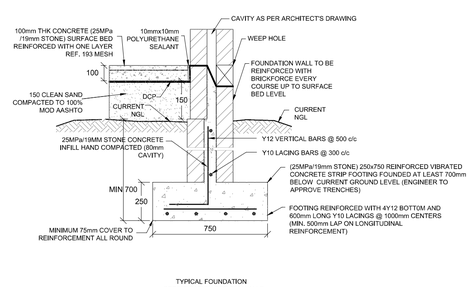
SCALE 1:125



TYPICAL SLAB THICKENING DETAIL FOR SINGLE SKIN WALLS

DETAIL 03

SCALE 1:10



TYPICAL FOUNDATION SPECIFICATION FOR 280 WALLS

DETAIL 04

SCALE 1:20

0 10 20 30 40 50 90

Oorspronklike SCALE in mm / Original scale in mm

Notas - Notes

Wysiging Amend.	Datum Date	Beskrywing - Description

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Stellenbosch 7600

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Opgemeet Surveyed	JB	**Ingenieur - Engineer**	
Ontwerp Designed	RS	**Geteken Signed**	2019300488 **Pr.Ing. Pr. Eng.**
Geteken Drawn	RS	**Datum Date**	19/04/2022
Nageslen Checked		**Kliënt - Client**	
		Geteken Signed	
		Datum Date	

Kliënt - Client

28 Main Road
Ashton
6715

Tel : (023) 615 8000

LANGEBERG MUNICIPALITY

Projek - Project

MONTAGU TRADING STALLS

Planbeskrywing - Plan Description

FOUNDATION AND SURFACE BED LAYOUT

Skaal - Scale

AS SHOWN

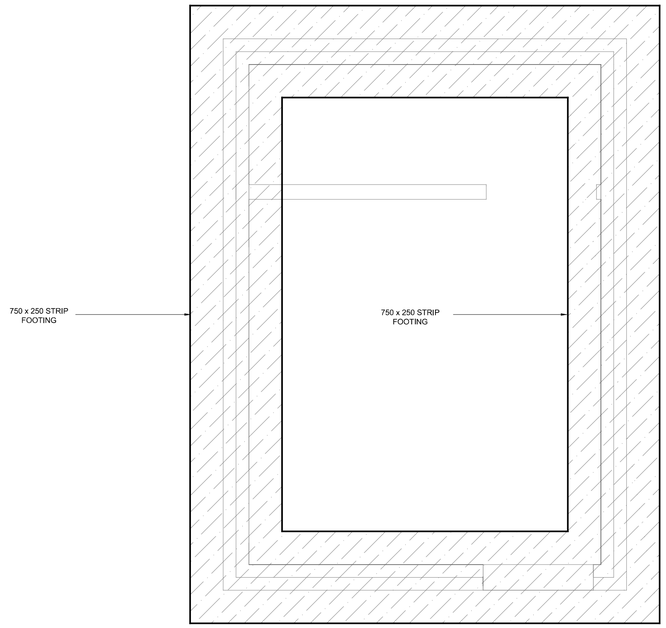
Datum - Date

APRIL 2022

Plannommer - Plan number

UDS543/S/02

Wysiging Amendment									

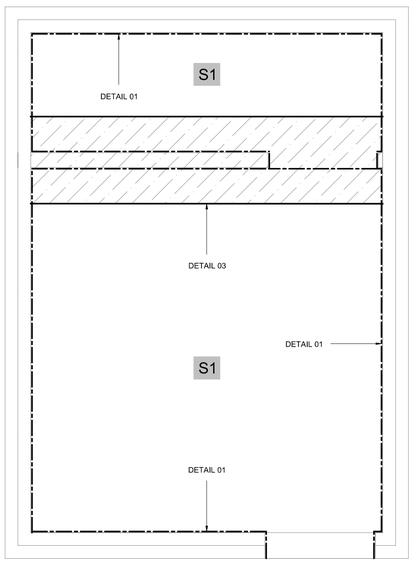


FOUNDATION LAYOUT

SCALE 1:25

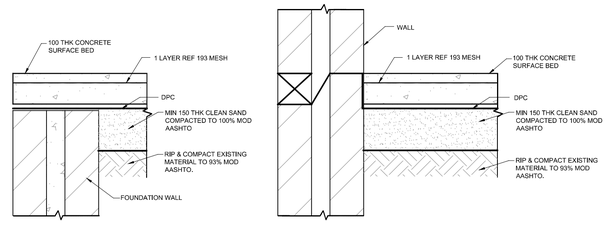
NOTE (S1):

100 THICK JOINTED 25MPa/19mm CONCRETE SURFACE BED. REINFORCED WITH ONE LAYER REF. 193 MESH (SURFACE BED TO BE PLACED ON 150 THK G7 COMPACTED TO 100% MOD AASHTO.)



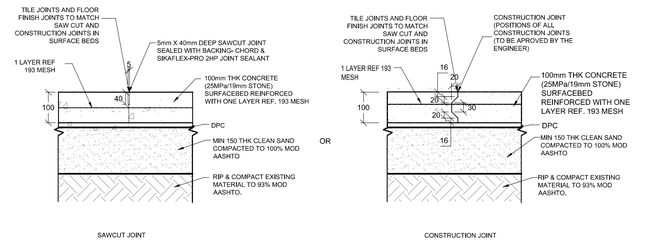
SURFACE BED LAYOUT

SCALE 1:25



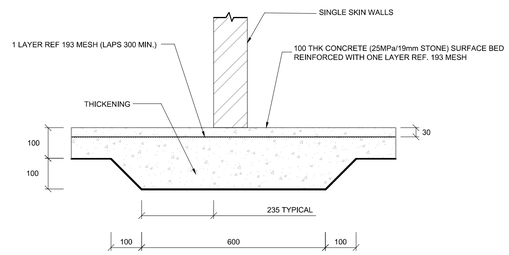
DETAIL 01

SCALE 1:10



DETAIL 02

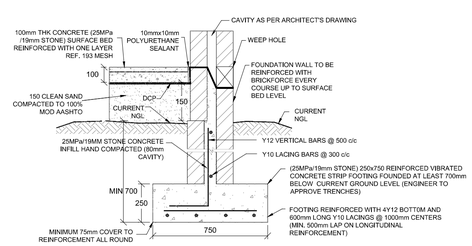
SCALE 1:10



TYPICAL SLAB THICKENING DETAIL FOR SINGLE SKIN WALLS

DETAIL 03

SCALE 1:10



TYPICAL FOUNDATION SPECIFICATION FOR 280 WALLS

DETAIL 04

SCALE 1:20

0 10 20 30 40 50 90

Oorspronklike SCALE in mm / Orlginal scale in mm

Notas - Notes

Wysiging Amend.	Datum Date	Beskrywing - Description

Posbus / PO Box 131
Stellenbosch 7599

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Opgemeet Surveyed	JB	**Ingenieur - Engineer**
Ontwerp Designed	RS	**Geteken Signed** 2019300488 **Pr.Ing. Pr. Eng.**
Geteken Drawn	RS	**Datum Date** 19/04/2022
Nagesien Checked		**Kliënt - Client** **Geteken Signed** **Datum Date**

Kliënt - Client

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Tel : (023) 615 8000

LANGEBERG MUNICIPALITY

Projek - Project

BONNIEVALE TRADING STALLS

Planbeskrywing - Plan Description

FOUNDATION AND SURFACE BED LAYOUT

Skaal - Scale

AS SHOWN

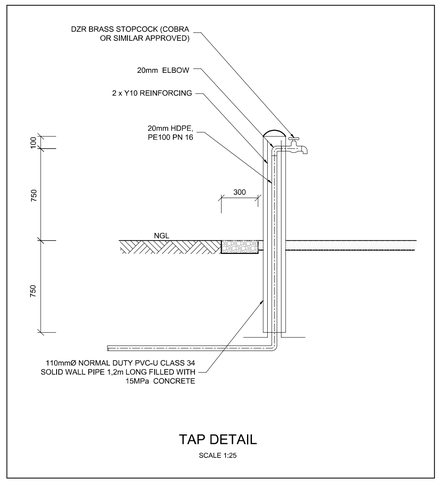
Datum - Date

APRIL 2022

Plannommer - Plan number

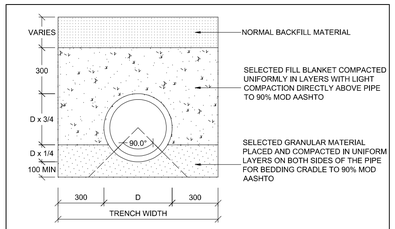
UDS543/S/01

Wysiging Amendment								



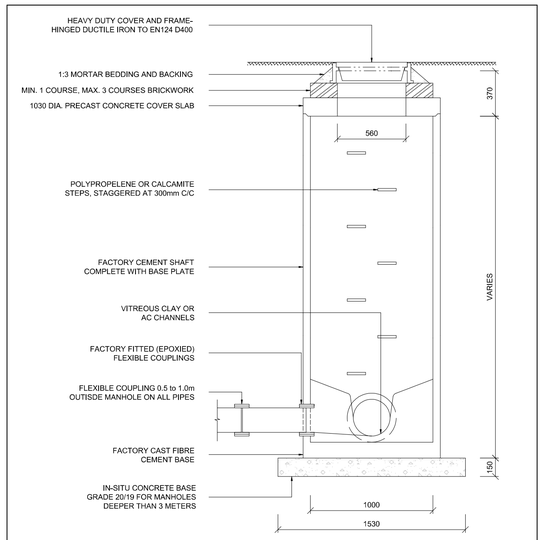
TAP DETAIL

SCALE 1:25



DETAIL FOR CLASS C BEDDING OF PIPE

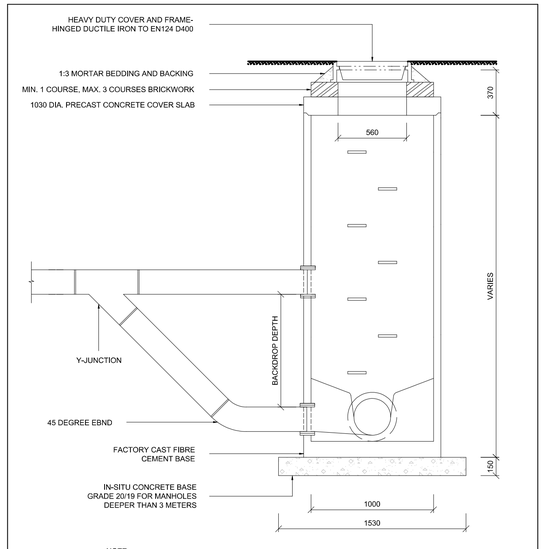
SCALE 1:20



NOTE:
1) REFER TO SABS 1200 LD FOR SPECIFICATIONS AND ITEMS NOT INDICATED

TYPICAL SEWER MANHOLE DETAIL

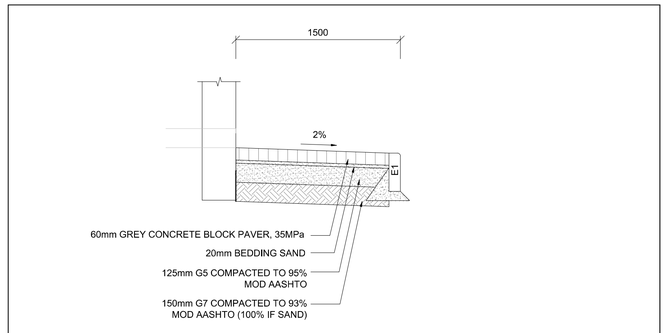
SCALE 1:25



NOTE:
1) REFER TO SABS 1200 LD FOR SPECIFICATIONS AND ITEMS NOT INDICATED

TYPICAL SEWER MANHOLE WITH EXTERNAL BACK-DROP DETAIL

SCALE 1:25



PAVED APRON DETAIL

SCALE 1:20

0 10 20 30 40 50 90

Oorspronklike SCALE in mm / Original scale in mm

Notas - Notes

Wysiging Amend.	Datum Date	Beskrywing - Description

Posbus / PO Box 131
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Opgemeet Surveyed	JB	**Ingenieur - Engineer**
Ontwerp Designed	RS	Geteken Signed 2019300488 Pr.Ing. Pr. Eng.
Geteken Drawn	RS	Datum Date 19/04/2022
Nageslen Checked		**Kliënt - Client**
		Geteken Signed
		Datum Date

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LANGEBERG MUNICIPALITY

Projek - Project

BONNIEVALE & MONTAGU TRADING STALLS

Planbeskrywing - Plan Description

TYPICAL DETAILS

Skaal - Scale

AS SHOWN

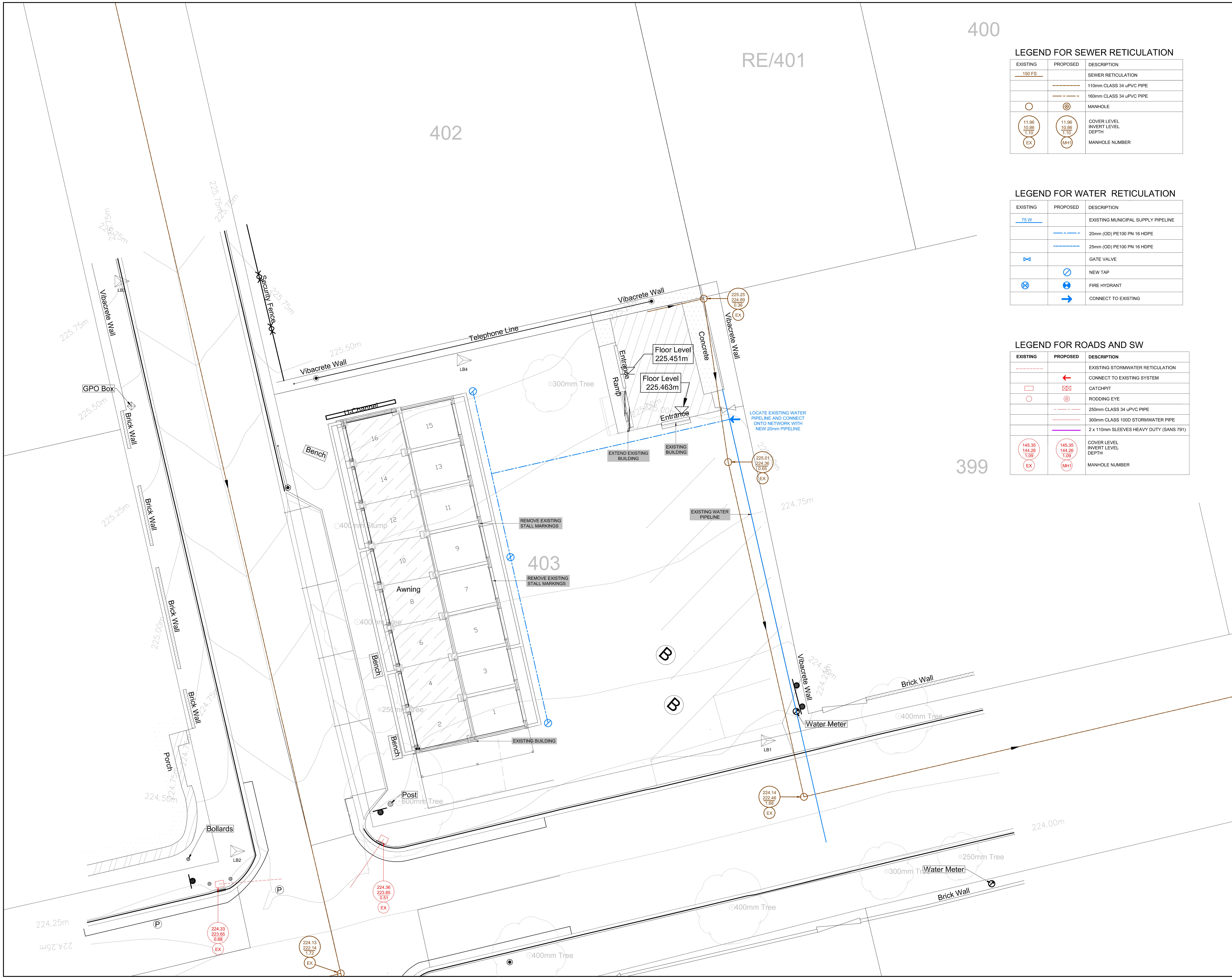
Datum - Date

MAY 2022

Plannommer - Plan number

UDS543/C/04

Wysiging Amendment



LEGEND FOR SEWER RETICULATION

EXISTING	PROPOSED	DESCRIPTION
150 FS		SEWER RETICULATION
		110mm CLASS 34 uPVC PIPE
		160mm CLASS 34 uPVC PIPE
○	◎	MANHOLE
11.96 / 10.86 / 1.10 EX	11.96 / 10.86 / 1.10 MH1	COVER LEVEL INVERT LEVEL DEPTH MANHOLE NUMBER

LEGEND FOR WATER RETICULATION

EXISTING	PROPOSED	DESCRIPTION
75 W		EXISTING MUNICIPAL SUPPLY PIPELINE
		20mm (OD) PE100 PN 16 HDPE
		25mm (OD) PE100 PN 16 HDPE
⋈		GATE VALVE
	⊘	NEW TAP
⊗		FIRE HYDRANT
	→	CONNECT TO EXISTING

LEGEND FOR ROADS AND SW

EXISTING	PROPOSED	DESCRIPTION
		EXISTING STORMWATER RETICULATION
	←	CONNECT TO EXISTING SYSTEM
▭	⊠⊠	CATCHPIT
○	◎	RODDING EYE
		250mm CLASS 34 uPVC PIPE
		300mm CLASS 100D STORMWATER PIPE
		2 x 110mm SLEEVES HEAVY DUTY (SANS 791)
145.35 / 144.26 / 1.09 EX	145.35 / 144.26 / 1.09 MH1	COVER LEVEL INVERT LEVEL DEPTH MANHOLE NUMBER

0 10 20 30 40 50 90

Oorspronklike SCALE in mm / Original scale in mm

Notas - Notes

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Ontwerp Designed	RS	Datum Date 19/04/2022
Geteken Drawn	RS	Kliënt - Client; Geteken Signed
Nagesien Checked		Datum Date

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LANGEBERG MUNICIPALITY

Projek - Project

MONTAGU TRADING STALLS

Planbeskrywing - Plan Description

NEW-AND-EXISTING SERVICES LAYOUT

Skaal - Scale

1:125

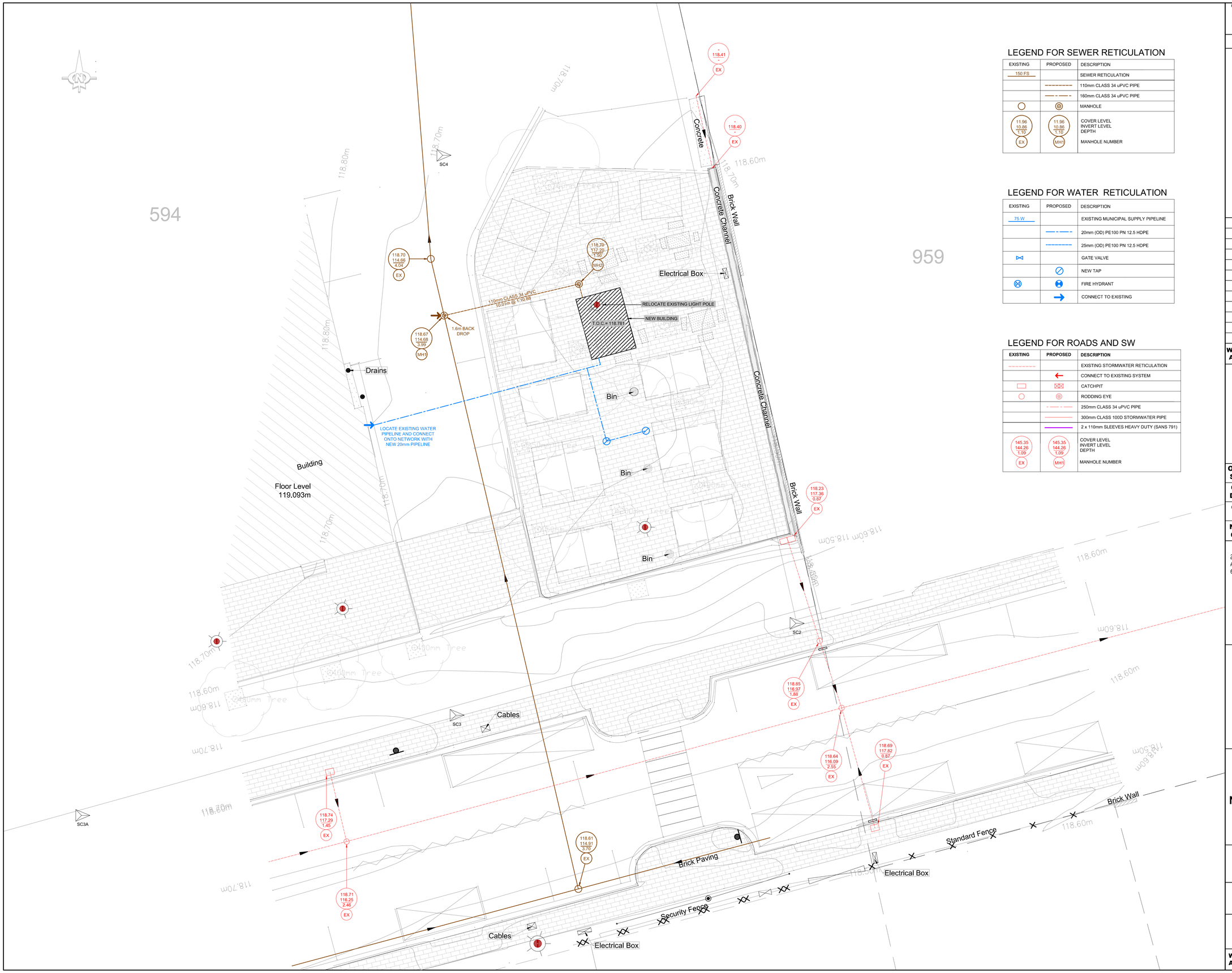
Datum - Date

APRIL 2022

Plannommer - Plan number

UDS543/C/02

Wysiging Amendment



LEGEND FOR SEWER RETICULATION

EXISTING	PROPOSED	DESCRIPTION
150 FS		SEWER RETICULATION
		110mm CLASS 34 uPVC PIPE
		160mm CLASS 34 uPVC PIPE
		MANHOLE
11.96 10.86 1.10 EX	11.96 10.86 1.10 MH1	COVER LEVEL INVERT LEVEL DEPTH MANHOLE NUMBER

LEGEND FOR WATER RETICULATION

EXISTING	PROPOSED	DESCRIPTION
75 W		EXISTING MUNICIPAL SUPPLY PIPELINE
		20mm (OD) PE100 PN 12.5 HDPE
		25mm (OD) PE100 PN 12.5 HDPE
		GATE VALVE
		NEW TAP
		FIRE HYDRANT
		CONNECT TO EXISTING

LEGEND FOR ROADS AND SW

EXISTING	PROPOSED	DESCRIPTION
		EXISTING STORMWATER RETICULATION
		CONNECT TO EXISTING SYSTEM
		CATCHPIT
		RODDING EYE
		250mm CLASS 34 uPVC PIPE
		300mm CLASS 100D STORMWATER PIPE
		2 x 110mm SLEEVES HEAVY DUTY (SANS 791)
145.35 144.26 1.09 EX	145.35 144.26 1.09 MH1	COVER LEVEL INVERT LEVEL DEPTH MANHOLE NUMBER

0 10 20 30 40 50 90

Oorspronklike SCALE in mm / Original scale in mm

Notas - Notes

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Geteken Drawn	RS	Datum Date 19/04/2022
Nagesien Checked		**Kliënt - Client** Geteken Signed / Datum Date

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LANGEBERG MUNICIPALITY

Projek - Project

BONNIEVALE TRADING STALLS

Planbeskrywing - Plan Description

NEW-AND-EXISTING SERVICES LAYOUT

Skaal - Scale

1:125

Datum - Date

APRIL 2022

Plannommer - Plan number

UDS543/C/01

Wysiging Amendment

DALVEN products

CAPE TOWN: P.O. Box 371, Eppindust 7475 Tel: 021 593 6790 Fax: 021 593 8650
JOHANNESBURG: P.O. Box 1358, Florida 1710 Tel: 011 472 4417 Fax: 011 472 1206
HEAD OFFICE: P.O. Box 26738, Hout Bay 7872 Tel: 021 790 2379 Fax: 021 790 3360
E-mail: info@dalven.co.za Website: www.dalven.co.za

ASPHALT REJUVENATOR –

BITUMEN EMULSION COMPOUND FOR SEALING OF POROUS ASPHALT

MATERIAL DESCRIPTION

ASPHALT REJUVENATOR is a mineral-filled bitumen emulsion of a refined grade of bitumen. It is ready for use. It requires no heating and should only be stirred with a flat paddle if kept in stock for a long time.

ASPHALT REJUVENATOR has the consistency of a soft paste.

A 80/100 penetration grade bitumen is used in the manufacture of the compound to ensure sufficient flexibility and ductility of the binder for road applications. The binder is further modified by the addition of mineral fillers to increase binder stiffness, reducing tackiness and the possibility of binder creep or flow.

Once applied to the road, **ASPHALT REJUVENATOR** dries to a matt black colour. The fine capillaries in the asphaltic concrete are permanently sealed leaving the macro- and micro- texture of the paving unaffected. The product will not re-emulsify in water even after prolonged periods of wet road conditions.

SURFACE PREPARATION

The asphalt surfacing must be dry and free of dust before treating with Asphalt Rejuvenator. At least two warm sunny days should be allowed after rain showers for the surfacing to dry out before treating. This will ensure that the fine capillaries are not water-logged and facilitate easy penetration of the compound into the asphalt.

ASPHALT REJUVENATOR SPECIFICATION:

Product type:	Water-based, mineral filled bitumen emulsion.
Solids content, % by mass:	58-60
Colour:	Brown when wet, black when dry
Vapour perm, 1mm film:	4,4g/m^2/24 hours at 75% R.H.
Mass per litre:	1,05 kg
Availability:	5 litre, 20 litre and 200 litre containers.

APPLICATION

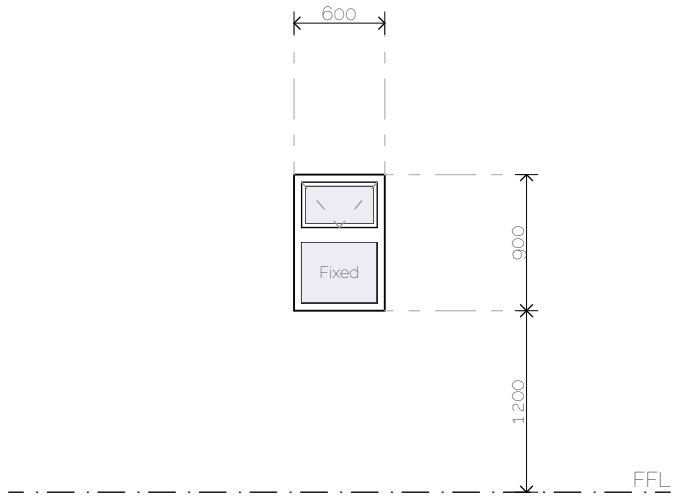
1. Asphalt Rejuvenator is diluted with water in a 1:1 ratio. This is best done by pouring a measured quantity of Asphalt Rejuvenator into a 200 litre open-ended drum, adding an equal measured amount of water and stirring by hand. The resultant product will have a free-flowing consistency.

2. The diluted Asphalt Rejuvenator can now be applied to the asphalt surface by dipping soft, domestic type brooms into the material and painting it liberally onto the surface of the road. Alternatively, it can be poured onto the road surface with a watering can and immediately painted out by means of brooms to give uniform spread. Under no circumstances should excessive quantities be poured onto the road as this will give, rise to concentrations of material in isolated areas which could lead to tackiness of the surface.
3. The application rate of the **diluted Asphalt Rejuvenator** will be between 1,0 and 0,5 litres per square metre depending on the porosity and texture of the surface.
4. Drying time will be approximately 2 to 3 hours after application during warm, sunny weather conditions. The Asphalt Rejuvenator treatment should never be applied on cloudy or humid days as curing time can be prolonged and material may even be washed out following an unexpected rain shower. Traffic can normally be allowed back on the road after the treatment has changed to a black colour, indicating that the emulsion has set completely and the binder has been deposited in the voids.
5. The efficacy of the Asphalt Rejuvenator treatment can be monitored by determining permeability before and after the treatment. Very open paving may require a second application before an acceptable limit of water permeability is obtained.
6. Surface variability may also necessitate second applications being required in isolated areas before acceptable limits of permeability are obtained.

NOTES :

a) The diluted Asphalt Rejuvenator treatment is recommended as a cost-effective method of reducing the permeability of porous premix layers that should otherwise be in a sound condition.
b) The treatment should only be applied during and following sunny weather conditions.
c) Brooms should be washed in clean water periodically during, and immediately after use; if clogged with bitumen they can be cleaned with paraffin or white spirits. These solvents should not be used for cleaning during application unless followed by thorough rinsing with water.

MONTAGU_ W0.01_A



LOCATION	0.01_New Disable Toilet	QUANTITY	1
WINDOW No	W0.01_A		

FRAME/WINDOW
FRAME: ALUMINIUM casement window frame or similar to Mount Moriah Architecture's approval.
WINDOW: ALUMINIUM Top- hung window as indicated or similar approved by Mount Moriah Architecture. Stiles to be continuous width top,bottom.

IRONMONGERY
GEAR - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

LOCK - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

HANDLE - To manufacturer's recommendations and Mount Moriah Architecture's approved sample. Colour to match frame.

GLASS
SINGLE CLEAR GLAZING to comply with Part N of SABS 10400 and AAMSA requirements.
Glass specification by specialist to be approved by the Mount Moriah Architecture.

FINISH
POWDERCOAT finish, INTERPON colour: TBC

GENERAL
All doors and windows are viewed from the outside. Exact sizes of all openings are to be confirmed on site before manufacturing commences. Where ever possible manufacturer is to advise Mount Moriah Architecture with regards to better fabrication and detailing. This drawing is to be read in conjunction with the detail drawings where noted, and with all respective schedules. ALUMINIUM: Specialist to supply Mount Moriah Architecture with various section sizes, grips and handles for sections and approval. GLAZING: All butt joints in glazing to have clear structural silicon as per specialist recommendations. But jointed corners or frameless glass should be factory pre polished with fine sand method

0

GENERAL NOTES
All relevant details, levels, dimensions, setting out positions are to be checked prior to any work commencing, details take precedent over working drawings, any discrepancies are to be brought to the attention of the Mount Moriah Architecture. **Drawings are to read in conjunction with Engineer's drawings. Contractor to keep full set of drawings on site.** Contractor and Engineer to verify all levels and dimensions on site and check same against Mount Moriah Architecture's drawings before commencing work. Mount Moriah Architecture accepts no responisibiilty for errors resulting from misinterpretation of the drawings.

Rev.	Description	Date

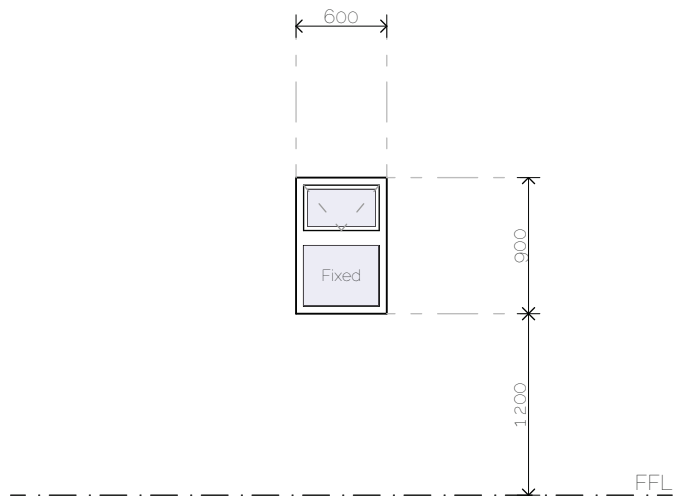
LANGEBERG MUNICIPALITY

Langeberg , CCD;, Western Cape

Window Schedule	DRAWING NUMBER	SCALE	PG SIZE	REVISION
	003 | 22|MON		A4	0
PROJECT STATUS : Stage 4		DRAWN	CHECKED	DATE
		LD	LD	2022/05/05

1st FLOOR 31 HOPE STREET P.O.BOX 45 ROBERTSON 6705
SACAP REGISTRATION NR. PAT26658884 SOLE PRACTITIONER
(082) 410 7463 studio@mountmoriah.co.za

BONNIEVALE_ W0.01_A; W0.02_A; W0.03_A



LOCATION	0.01_New Storage; 0.01_New Storage; 0.02_New WC	QUANTITY	1
WINDOW No	W0.01_A; W0.02_A; W0.03_A		

FRAME/WINDOW
FRAME: Aluminium casement window frame or similar to Mount Moriah Architecture's approval.
WINDOW: Top- hung aluminium window as indicated or similar approved by Mount Moriah Architecture. Stiles to be continuous width top,bottom.

IRONMONGERY
GEAR - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

LOCK - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

HANDLE - To manufacturer's recommendations and Mount Moriah Architecture's approved sample. Colour to match frame.

GLASS
SINGLE CLEAR GLAZING to comply with Part N of SABS 10400 and AAMSA requirements.
Glass specification by specialist to be approved by the Mount Moriah Architecture.

FINISH
POWDERCOAT finish, INTERPON colour: TBC

GENERAL
All doors and windows are viewed from the outside. Exact sizes of all openings are to be confirmed on site before manufacturing commences. Where ever possible manufacturer is to advise Mount Moriah Architecture with regards to better fabrication and detailing. This drawing is to be read in conjunction with the detail drawings where noted, and with all respective schedules. ALUMINIUM: Specialist to supply Mount Moriah Architecture with various section sizes, grips and handles for sections and approval. GLAZING: All butt joints in glazing to have clear structural silicon as per specialist recommendations. But jointed corners or frameless glass should be factory pre polished with fine sand method

0

GENERAL NOTES
All relevant details, levels, dimensions, setting out positions are to be checked prior to any work commencing, details take precedent over working drawings, any discrepancies are to be brought to the attention of the Mount Moriah Architecture. **Drawings are to read in conjunction with Engineer's drawings. Contractor to keep full set of drawings on site.** Contractor and Engineer to verify all levels and dimensions on site and check same against Mount Moriah Architecture's drawings before commencing work. Mount Moriah Architecture accepts no responisibiilty for errors resulting from misinterpretation of the drawings.

Rev.	Description	Date

LANGEBERG MUNICIPALITY

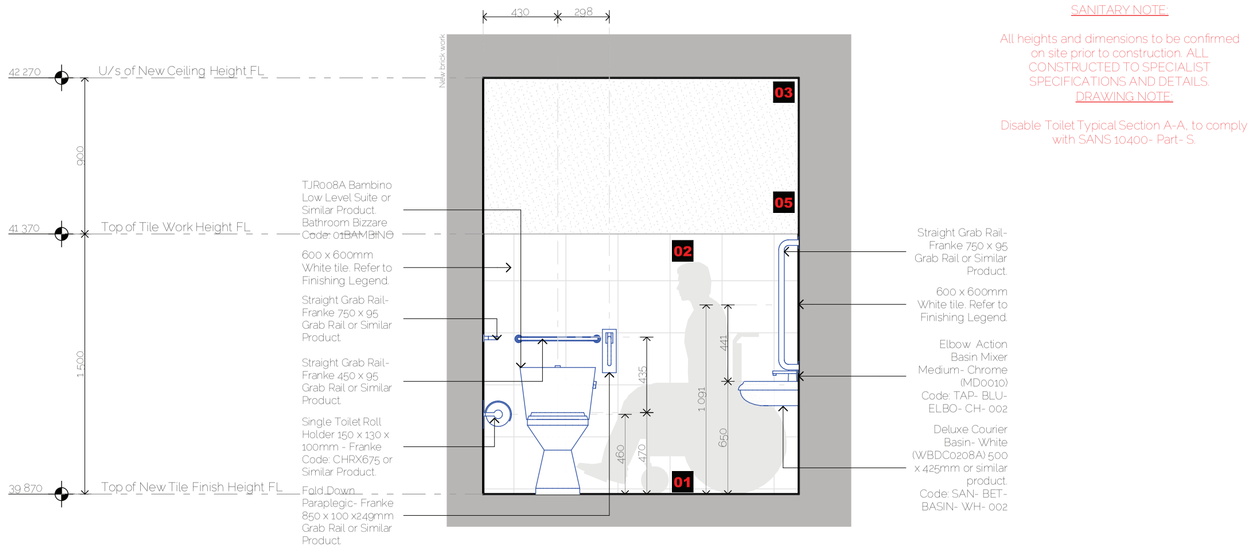
Langeberg , CCD;, Western Cape

Window Schedule	DRAWING NUMBER	SCALE	PG SIZE	REVISION
	003 | 22|BON		A4	0
PROJECT STATUS : Stage 4		DRAWN	CHECKED	DATE
		LD	LD	2022/05/05

1st FLOOR 31 HOPE STREET P.O.BOX 45 ROBERTSON 6705
SACAP REGISTRATION NR. PAT26658884 SOLE PRACTITIONER
(082) 410 7463 studio@mountmoriah.co.za

FINISHES LEGEND- Disabled Toilets, Bathrooms and New Storage		
NOTE: All materials and finishes to Architect's approval and to Architect's approved sample.		
01		TILE FLOOR 01 . COLOUR: White . MANUFACTURE: CTM Zarina White EcoTecSHiny Glazed Porcelain Floor Tile - 600 x 600mm
02		TILE WALL 02 . COLOUR: White . MANUFACTURE: CTM Zarina White EcoTecSHiny Glazed Porcelain Floor Tile - 600 x 600mm. Wall to be tiled 1500mm from FFL
03		CEILING 03. COLOUR: White Gypsum board ceiling to painted white.
04		URINAL AND WHB TILE 04 . COLOUR: White Gloss . MANUFACTURE: TILETORIA 100 x 400mm Essence White Gloss Ceramic Wall Tile
05		WALL PAINT 05 . COLOUR: White Zarina White EcoTecSHiny Glazed Porcelain Floor Tile - 600 x 600mm

SANITARY LEGEND- Bathrooms (All ex. bathrooms to be refurbished with the following)		
NOTE: All sanitary fittings to Architect's approval and to Architect's approved sample.		
WC	QTY 12	WC . COLOUR: White . MANUFACTURE: BATHROOM BIZZARE Toilet Close Couple Mila front Flus White Betta- CODE: SAN- BET- LOMB-WH- 006
WHB	3	WHB . COLOUR: White . MANUFACTURE: BATHROOM BIZZARE Deluxe Courier Basin White- WBDC0208A- 500 x 425mm- CODE: SAN- BET- BASN- WH- 002
WHB tap	3	WHB Tap . COLOUR: Chrome . MANUFACTURE: BATHROOM BIZZARE Bay Basin Mixer Standard 90mm- Chrome (BA00010) CODE: TAP- BLU- BAY- CH- 002
UR	3	URINAL . COLOUR: White . MANUFACTURE: CTM Betta Ben White Wall Mounted Urinal Incl. Installation Kit



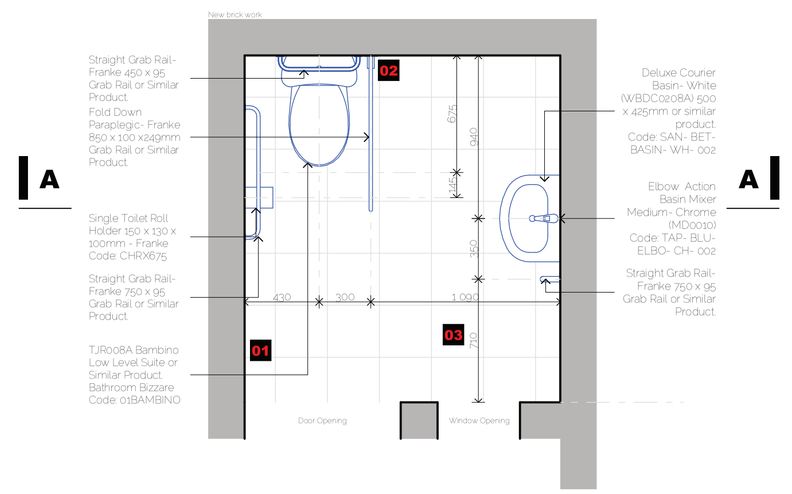
Disable Toilet Typical Section A-A
Scale 1:25

SANITARY NOTE:

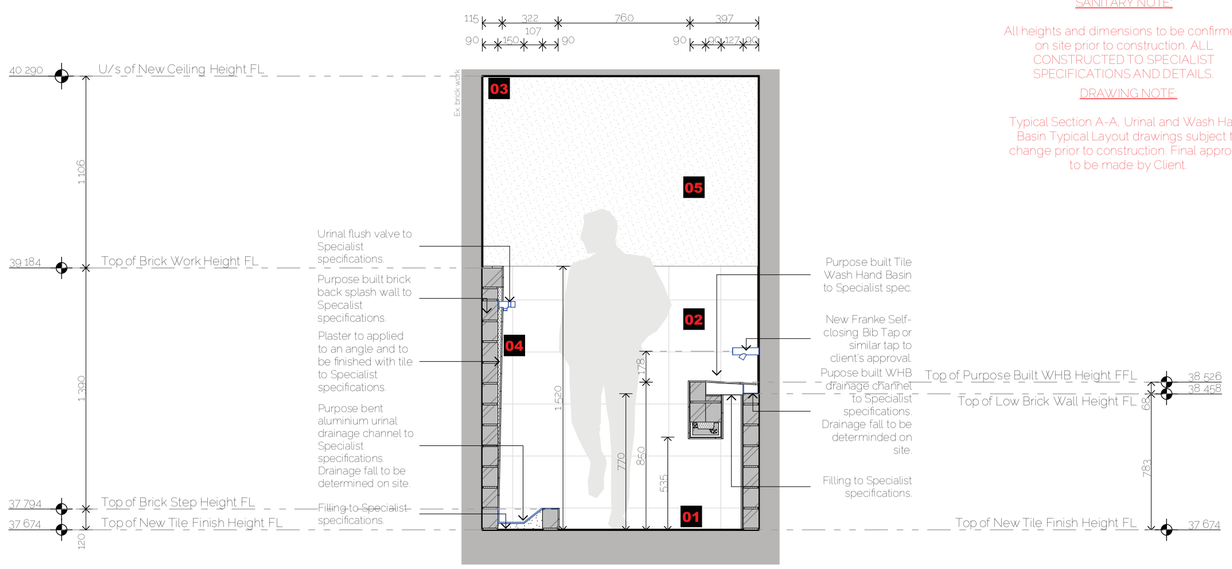
All heights and dimensions to be confirmed on site prior to construction. ALL CONSTRUCTED TO SPECIALIST SPECIFICATIONS AND DETAILS.

DRAWING NOTE:

Disable Toilet Typical Section A-A, to comply with SANS 10400- Part- S



Disable Toilet Typical Layout
Scale 1:25



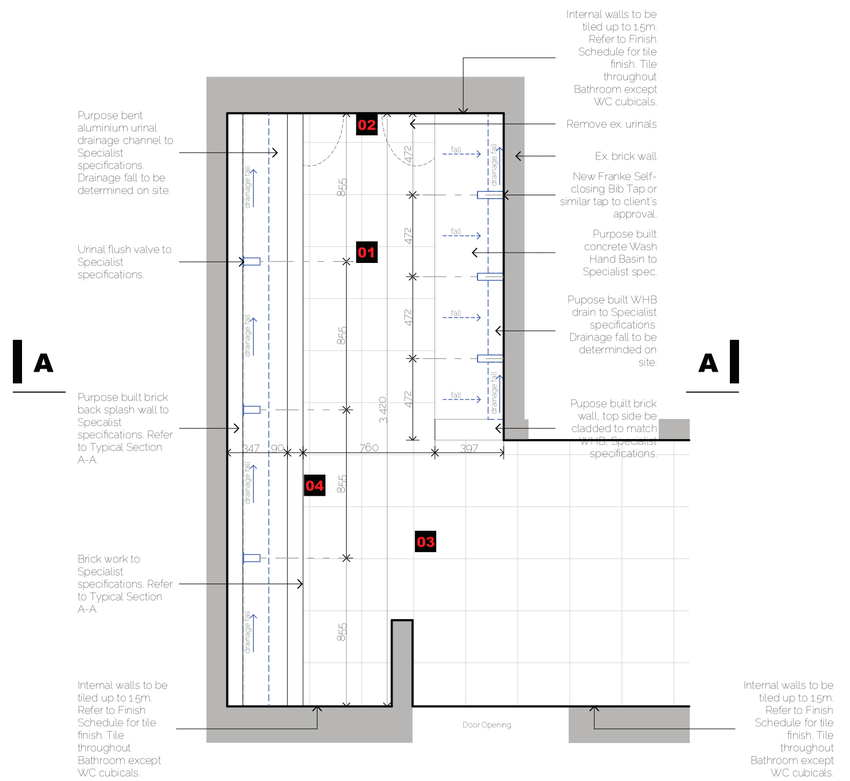
Urinal and Wash Hand Basin Typical Section A-A
Scale 1:25

SANITARY NOTE:

All heights and dimensions to be confirmed on site prior to construction. ALL CONSTRUCTED TO SPECIALIST SPECIFICATIONS AND DETAILS.

DRAWING NOTE:

Typical Section A-A, Urinal and Wash Hand Basin Typical Layout drawings subject to change prior to construction. Final approval to be made by Client.



Urinal and Wash Hand Basin Typical Layout
Scale 1:25

MOUNT MORIAH
ARCHITECTURE
PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
ACAP REG NO: ATA0000852
1ST FLOOR 31 HOOP STREET ROBERTSON 6705

LANGEBERG MUNICIPALITY
TRADING STALLS- Robertson

Note : This Drawing is not valid for construction unless stamped accordingly

CONSTRUCTION DRAWINGS

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05



Locality

Project Status Stage 4

Typical Details Layout

A.5

Project Number 003| MMA | 22

COUNCIL NOTES

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL AUTHORITY BY-LAWS AND SANS 10400 NATIONAL BUILDING REGULATIONS.

GENERAL REQUIREMENTS | SANS 10400 PART A:
All planning, Designing and Supervision of erection of the building to be undertaken by a registered professional and is subject to any laws pertaining to the Architectural Profession Act 2000(Act 4 of 2000)

All structural work to be approved and signed off by a professional Engineer in accordance with SANS 10400 part A Section A1 (3)

Building work is only to commence on approval by the relevant Building Control Officer as per SANS 10400 Part A Section A1(5)

All plans to be submitted to Local Authority in accordance with SANS 10400 Part A Section A1 and are to be aligned with SANS 10400 Part A section A5, A6, A7 and A8.

All additional information required by the Local Authority, to be submitted in accordance SANS 10400 Part A Section A13.

All building materials and tests conducted to materials are to be approved by a recognised body, certified by the SANS, and are to satisfy the requirements of building material standards set as per SANS 10400 part A Section A13

Structural systems of any building are not to be compromised at any stage of construction as per SANS 10400 Part A(a)(2), any concerns or queries to be directed to Mount Moriah Architecture or Engineer immediately.

All plumbing work to be carried out by an approved plumber in accordance with SANS 1400 Part A Section A18

Notice of intention to commence erection or demolition of a building, and notices of inspection are to be submitted to the Local Authority in accordance with SANS 1400 Part A section A23.

Whereby any persons is found to deviate form the approved plans and disregard the application of SANS 10400 shall be subject to any actions taken by the Local Authority of enforcement officer as per SANS 10400 Part A Section A25.

The appointed builder shall be a registered competent builder in accordance with the housing consumers protection act 1998, as per SANS 10400 Part A Section B4.

STRUCTURAL DESIGN | SANS 10400 PART B:
The structural design is accordance to the requirement parts of H, J, K, L, N of SANS 10400 (SANS 10400 | Part M: Stairways, does not comply to this structure) and also combined with a rational design and assessments by Competent Structural Engineer where indicated. See SANS 10400 Form 1

DIMENSIONS | SANS 10400 PART C:
All dimensions of rooms and space on complies with the requirements of SANS 10400 Part-C.

PUBLIC SAFETY | SANS 10400 PART D:
Any ramp or driveway shall be so designed that it is safe when used and is fit for the purpose for which it is intended and must comply accordance the requirements of SANS 10400 Part-D. The site is enclosed with a boundary wall higher than the required 1.2m which prohibits any direct access from the street and thus complies to the requirements of the SANS 10400 Part D.

SITE OPERATIONS | SANS 10400 PART F:
The sanitary facilities shall at all times be maintained in a clean and hygienic condition and be removed immediately once the building work has been completed.

EXCAVATIONS | SANS 10400 PART G:
Excavation on site is less than 3000mm deep and complies with Part G.

FOUNDATIONS | SANS 10400 PART H:
A geotechnical investigation has been carried out and is available for use. Foundations to be design and assess by Competent Structural Engineer.

FLOORS | SANS 10400 PART J:
Floors in Scullery, kitchen and bathrooms are in accordance with SANS 10400 Part-J. Slabs to be designed and assess by Competent Structural Engineer.

WALLS | SANS 10400 PART K:
Any wall provision shall be made to fix roof truss, rafter or beams to ensure that forces of the roof will be transmitted into walls. Walls to be designed and assessed by Competent Structural Engineer. Install brickgrip DPC to all windows and doors cills.

Unless otherwise indicated all new walls and interfaces with existing finishes to have smooth plaster skim and paint finish to Mount Moriah Architecture's detail.

ROOF | SANS 10400 PART L:
Gutters and downpipes to be in accordance with SANS 10400 Part R. All roof to be designed and specified by Engineer.

GLAZING | SANS 10400 PART N:
All glazing should be secure and durable and shall be fixed to sustain any wind action, will not allow penetration of water to the interior and be apparent, in the case of clear glazing, to any person approaching such glazing. All glazing to be clear unless otherwise specified in Mount Moriah Architecture's details and schedules. Thickness all according to following
3mm THICK max. Size of: 0.75 m²
4mm THICK max. Size of: 1.5m²
5mm THICK max. Size of: 2.1m²
6mm THICK max. Size of: 3.2m²
Glazing in doors to be 6mm laminated safety glass.

Safety glazing to be used where: glazing in doors and windows are in excess of 1m² window sills are less than 500mm above finished floor level, glazing directly above a bath/ bath enclosure or shower cubical, surface of a ramp, landing or balcony.

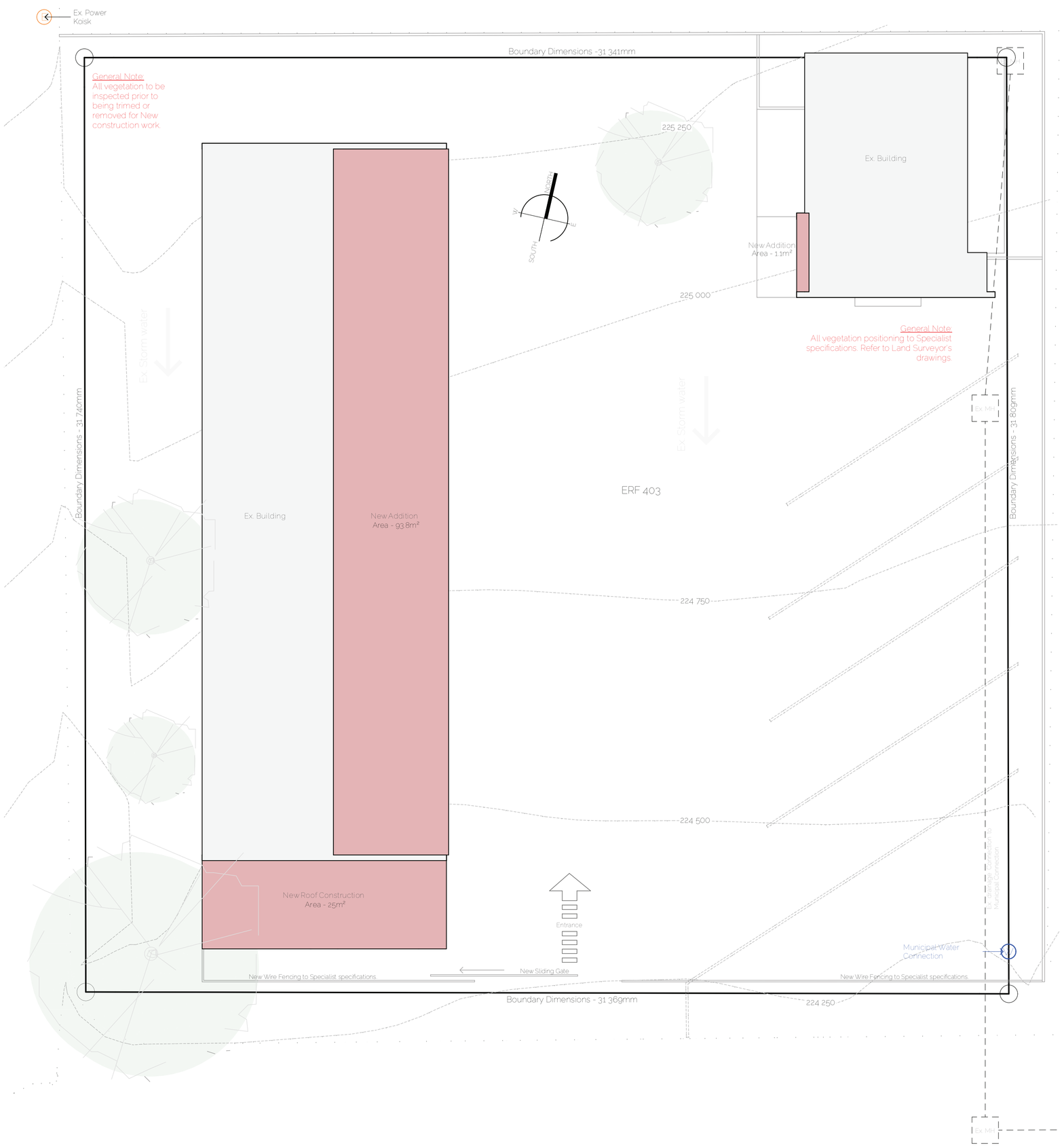
LIGHTING AND VENTILATION | SANS 10400 PART O
Dwelling to have 5% of the floor area natural lighting and 10% of the floor area in respect of other buildings, or 0.2m², whichever is the greater. Every opening in an external wall shall not have less than 5% natural ventilation of the floor area or 0.1m² in respect of category 1 buildings with an occupancy class of E&F2, H3, H4 or H5, 0.2m² in respect of other buildings, whichever is the greater.

DRAINAGE | SANS 10400 PART P
All soil and waste pipes to connect into drainage run, plumber to confirm all drainage points prior to installation. All new drainage runs are to connect to biodegradable septic tank connection. All work to be carried out and supervised by a registered drain layer in accordance with part P of the SANS 10400. A discharge stack of not more than two stories height serving no more than two sanitary groups (combination of not more than one each of a toilet pan, bath, shower and sink and either two wash hand basins or one wash hand basin and one bidet) may discharge into a stub stack. Stack vents connected to the top of discharge pipes shall not be less than 150mm above the flood level of the highest connecting sanitary fixture in the drainage system. Discharge pipes which are enclosed within walls or concrete to have a duct with an access panel for maintenance. A rodding eye or manhole may be omitted where there are no more than two bends of up to 90°, at each change in direction the bend does not exceed 45° and bends have a centre-line radius of not less than 600mm. A rodding eye or manhole shall be installed with 1.5m of the connection of the drain to the connecting sewer, as well as at the highest point of the drain and at such intervals of 25m measured from a rodding eye along the line of the drain. All drainage under slabs to be incased in minimum 100mm concrete and be laid without change in gradient or direction, with access at each point of entry or exit from the building. A waste pipe which discharges into a gully shall discharge above the surface of the water seal and not more than 100mm above the grating.

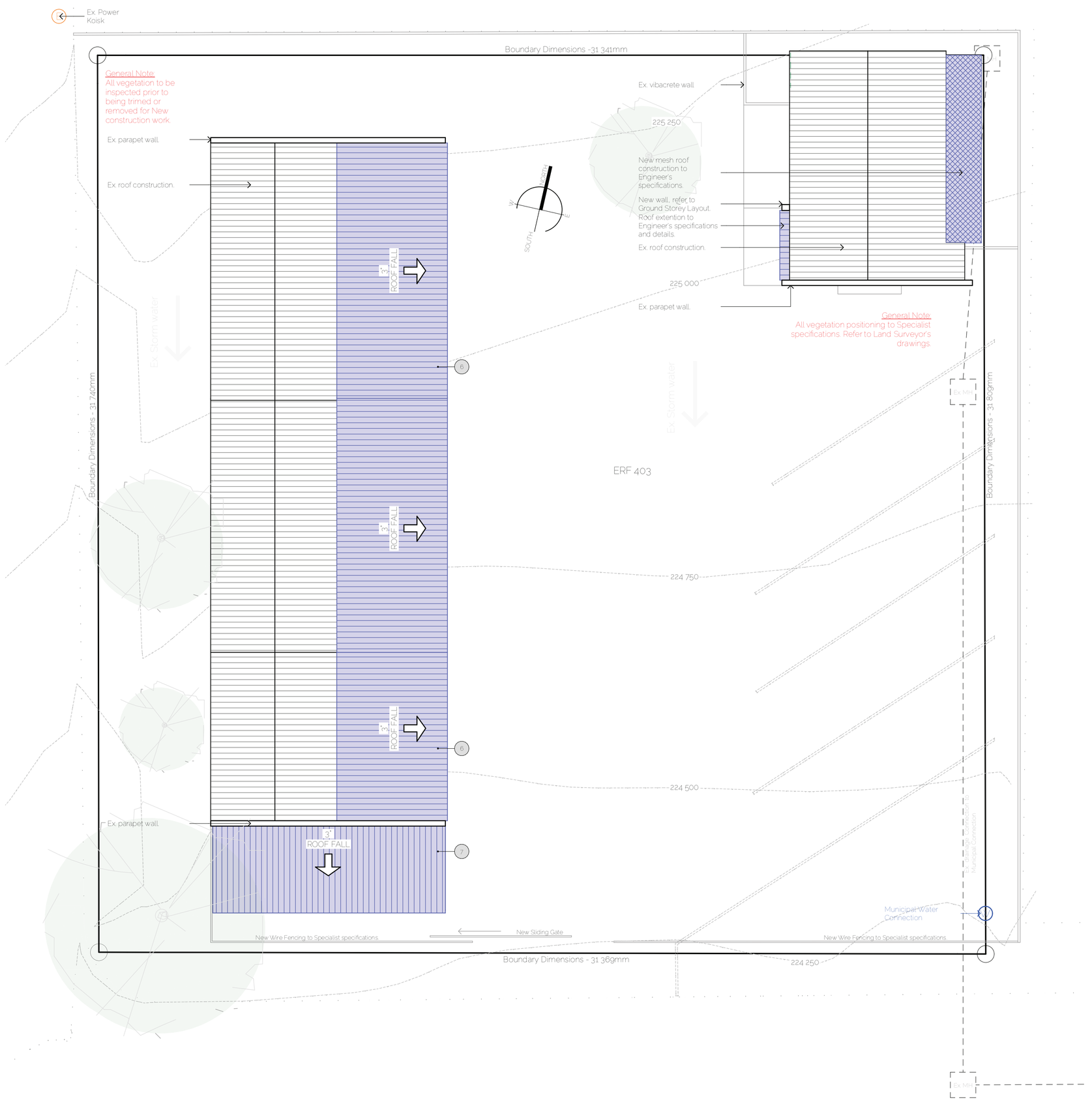
STORMWATER | SABS 0400 PART R:
All stormwater from hard surfaces as well as from downpipes from roofs are to connect to stormwater system to deviate rain water along away from the building. Backwash from swimming Pool to existing dam.

ENERGY USAGE | SANS 10400 PART XA:
The dwelling is powered natural resources. Thus make it 100% emission free from energy. Heat gain through the fenestration will be regulated and handled through natural air flow and heated and cooled by solar powered sources.

Thus complies the fenestration through using 100% natural resources for heating and cooling heat gain. . Perimeter Insulation board in foundations with R Value of at least 1. All roofs complies with R-Value with 135mm isotherm insulation. All exposed warm water pipes to be insulated with cover with a R-Value of at least 1. Gas geysers to be installed.



SITE LAYOUT
Scale 1:100



ROOF LAYOUT
Scale 1:100

MOUNT MORIAH
ARCHITECTURE
PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
CAPE TOWN | PRETORIA
1ST FLOOR 31 HOOP STREET, ROBERTSON 6706

LANGEBERG MUNICIPALITY
TRADING STALLS - Montagu

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05
SANS 10400 OCCUPATION

ZONING SCHEME

AREAS

Erf	998.2m²
Total New Coverage %	27.1%
New Addition	
New Disable Toilet	1.1m²
New Roof Construction	25m²
New Covered Stalls	93.8m²
Existing Building	
Existing Structures	157m²
TOTAL COVERED AREA	276.9m²

Note : This Drawing is not valid for construction unless stamped accordingly

CONSTRUCTION DRAWINGS

OWNER
Local Authority
Alterations to Existing Building
Montagu
6720



Locality

Project Status Stage 4

Montagu_Site and Roof Layout

B.1

Project Number 003| MMA | 22

COUNCIL NOTES

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL AUTHORITY BY-LAWS AND SANS 10400 NATIONAL BUILDING REGULATIONS.

GENERAL REQUIREMENTS | SANS 10400 PART A:
All planning, Designing and Supervision of erection of the building to be undertaken by a registered professional and is subject to any laws pertaining to the Architectural Profession Act 2000(Act 4 of 2000)

All structural work to be approved and signed off by a professional Engineer in accordance with SANS 10400 part A Section A1 (3)

Building work is only to commence on approval by the relevant Building Control Officer as per SANS 10400 Part A Section A1(5)

All plans to be submitted to Local Authority in accordance with SANS 10400 Part A Section A1 and are to be aligned with SANS 10400 Part A section A5, A6, A7 and A8.

All additional information required by the Local Authority, to be submitted in accordance SANS 10400 Part A Section A13.

All building materials and tests conducted to materials are to be approved by a recognised body, certified by the SANS, and are to satisfy the requirements of building material standards set as per SANS 10400 part A Section A13

Structural systems of any building are not to be compromised at any stage of construction as per SANS 10400 Part A(a)(2), any concerns or queries to be directed to Mount Moriah Architecture or Engineer immediately.

All plumbing work to be carried out by an approved plumber in accordance with SANS 1400 Part A Section A18

Notice of intention to commence erection or demolition of a building, and notices of inspection are to be submitted to the Local Authority in accordance with SANS 1400 Part A section A23.

Whereby any persons is found to deviate form the approved plans and disregard the application of SANS 10400 shall be subject to any actions taken by the Local Authority of enforcement officer as per SANS 10400 Part A Section A25.

The appointed builder shall be a registered competent builder in accordance with the housing consumers protection act 1998, as per SANS 10400 Part A Section B4.

STRUCTURAL DESIGN | SANS 10400 PART B:
The structural design is accordance to the requirement parts of H, J, K, L, N of SANS 10400 (SANS 10400 | Part M: Stairways, does not comply to this structure) and also combined with a rational design and assessments by Competent Structural Engineer where indicated. See SANS 10400 Form 1

DIMENSIONS | SANS 10400 PART C:
All dimensions of rooms and space on complies with the requirements of SANS 10400 Part-C

PUBLIC SAFETY | SANS 10400 PART D:
Any ramp or driveway shall be so designed that it is safe when used and is fit for the purpose for which it is intended and must comply accordance the requirements of SANS 10400 Part-D. The site is enclosed with a boundary wall higher than the required 1.2m which prohibits any direct access from the street and thus complies to the requirements of the SANS 10400 Part D.

SITE OPERATIONS | SANS 10400 PART F:
The sanitary facilities shall at all times be maintained in a clean and hygienic condition and be removed immediately once the building work has been completed.

EXCAVATIONS | SANS 10400 PART G:
Excavation on site is less than 3000mm deep and complies with Part G.

FOUNDATIONS | SANS 10400 PART H:
A geotechnical investigation has been carried out and is available for use. Foundations to be design and assess by Competent Structural Engineer.

FLOORS | SANS 10400 PART J:
Floors in Scullery, kitchen and bathrooms are in accordance with SANS 10400 Part-J. Slabs to be designed and assess by Competent Structural Engineer.

WALLS | SANS 10400 PART K:
Any wall provision shall be made to fix roof truss, rafter or beams to ensure that forces of the roof will be transmitted into walls. Walls to be designed and assessed by Competent Structural Engineer. Install brickgrip DPC to all windows and doors cills.

Unless otherwise indicated all new walls and interfaces with existing finishes to have smooth plaster skim and paint finish to Mount Moriah Architecture's detail.

ROOF | SANS 10400 PART L:
Gutters and downpipes to be in accordance with SANS 10400 Part R. All roof to be designed and specified by Engineer.

GLAZING | SANS 10400 PART N:
All glazing should be secure and durable and shall be fixed to sustain any wind action, will not allow penetration of water to the interior and be apparent, in the case of clear glazing, to any person approaching such glazing. All glazing to be clear unless otherwise specified in Mount Moriah Architecture's details and schedules. Thickness all according to following
3mm THICK max. Size of 0,75 m²
4mm THICK max. Size of 1,9m²
5mm THICK max. Size of 2.1m²
6mm THICK max. Size of 3.2m²
Glazing in doors to be 6mm laminated safety glass

Safety glazing to be used where: glazing in doors and windows are in excess of 1m² window sills are less than 500mm above finished floor level, glazing directly above a bath/ bath enclosure or shower cubical, surface of a ramp, landing or balcony.

LIGHTING AND VENTILATION | SANS 10400 PART O
Dwelling to have 5% of the floor area natural lighting and 10% of the floor area in respect of other buildings, or 0.2m², whichever is the greater. Every opening in an external wall shall not have less than 5% natural ventilation of the floor area or 0.1m² in respect of category 1 buildings with an occupancy class of E4,F2, H3, H4 or H5, 0.2m² in respect of other buildings, whichever is the greater.

DRAINAGE | SANS 10400 PART P:
All soil and waste pipes to connect into drainage run, plumber to confirm all drainage points prior to installation. All new drainage runs are to connect to biodegradable septic tank connection. All work to be carried out and supervised by a registered drain layer in accordance with part P of the SANS 10400. A discharge stack of not more than two stories height serving no more than two sanitary groups (combination of not more than one each of a toilet pan, bath, shower and sink and either two wash hand basins or one wash hand basin and one bidet) may discharge into a stub stack. Stack vents connected to the top of discharge pipes shall not be less than 150mm above the flood level of the highest connecting sanitary fixture in the drainage system. Discharge pipes which are enclosed within walls or concrete to have a duct with an access panel for maintenance. A rodding eye or manhole may be omitted where there are no more than two bends of up to 90°, at each change in direction the bend does not exceed 45° and bends have a centre-line radius of not less than 600mm. A rodding eye or manhole shall be installed with 1.6m of the connection of the drain to the connecting sewer, as well as at the highest point of the drain and at such intervals of 25m measured from a rodding eye along the line of the drain. All drainage under slabs to be incased in minimum 100mm concrete and be laid without change in gradient or direction, with access at each point of entry or exit from the building. A waste pipe which discharges into a gully shall discharge above the surface of the water seal and not more than 100mm above the grating.

STORMWATER | SABS 0400 PART R:
All stormwater from hard surfaces as well as from downpipes from roofs are to connect to stormwater system to deviate rain water along away from the building. Backwash from swimming Pool to existing dam.

ENERGY USAGE | SANS 10400 PART XA:
The dwelling is powered natural resources. Thus make it 100% emission free from energy. Heat gain through the fenestration will be regulated and handled through natural air flow and heated and cooled by solar powered sources.

Thus complies the fenestration through using 100% natural resources for heating and cooling heat gain. Perimeter Insulation board in foundations with R Value of at least 1. All roofs complies with R-Value with 135mm isothermn insulation. All exposed warm water pipes to be insulated with cover with a R-Value of at least 1. Gas geysers to be installed.

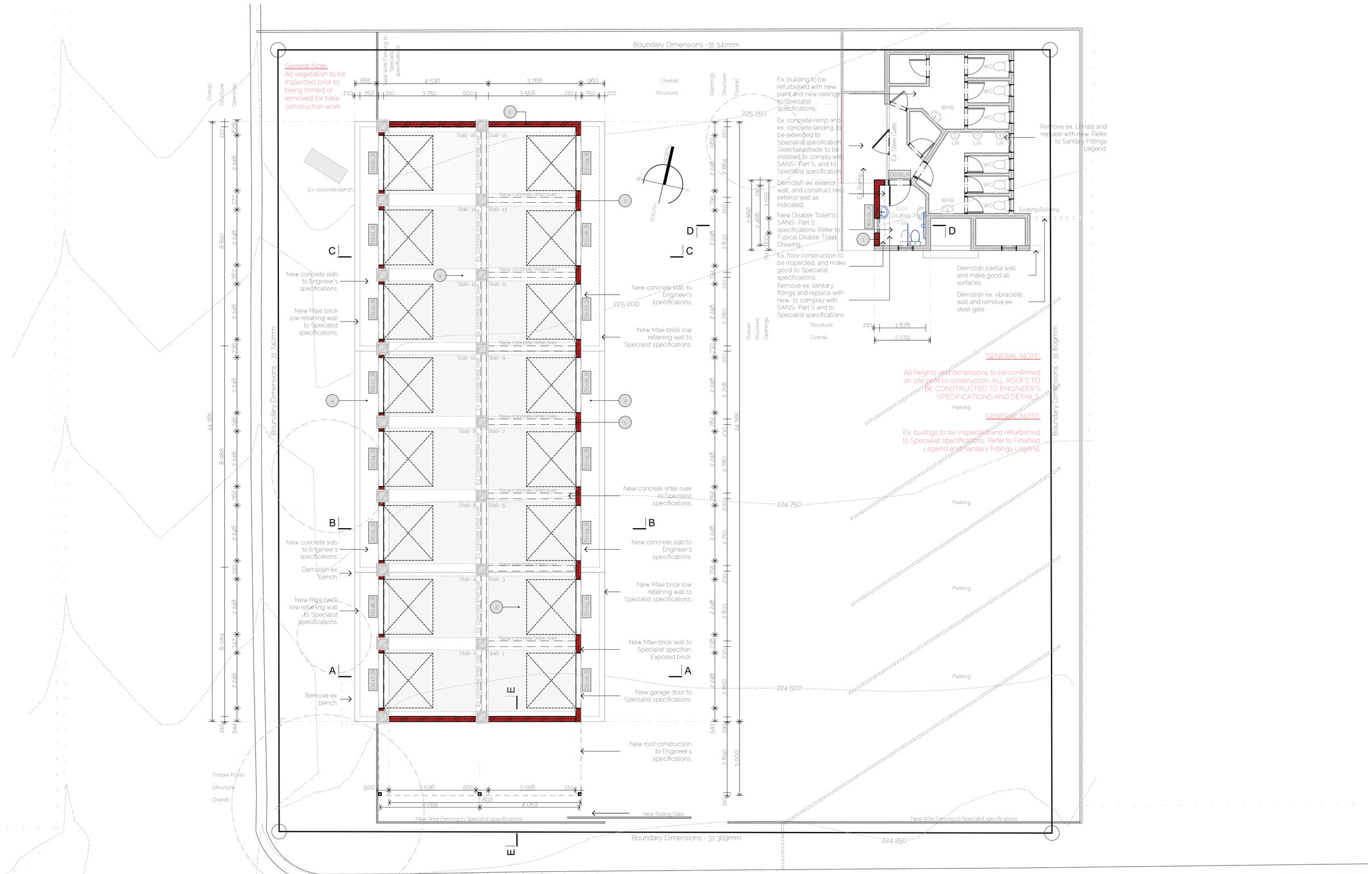
MONTAGU - DOOR AND WINDOW TABLE

GROUND STOREY | DOORS

NUMBER	LOCATION	SIZE	TYPE
D0.01_A	0.01_Disbale Toilet	900W x 2100H	Steel
D0.02_B	Stalls Building	2248W x 2000H	Garage Door
D0.03_B	Stalls Building	2248W x 2000H	Garage Door
D0.04_B	Stalls Building	2248W x 2000H	Garage Door
D0.05_B	Stalls Building	2248W x 2000H	Garage Door
D0.06_B	Stalls Building	2248W x 2000H	Garage Door
D0.07_B	Stalls Building	2248W x 2000H	Garage Door
D0.08_B	Stalls Building	2248W x 2000H	Garage Door
D0.09_B	Stalls Building	2248W x 2000H	Garage Door
D0.10_B	Stalls Building	2248W x 2000H	Garage Door
D0.11_B	Stalls Building	2248W x 2000H	Garage Door
D0.12_B	Stalls Building	2248W x 2000H	Garage Door
D0.13_B	Stalls Building	2248W x 2000H	Garage Door
D0.14_B	Stalls Building	2248W x 2000H	Garage Door
D0.15_B	Stalls Building	2248W x 2000H	Garage Door
D0.16_B	Stalls Building	2248W x 2000H	Garage Door
D0.17_B	Stalls Building	2248W x 2000H	Garage Door

GROUND STOREY | WINDOWS

NUMBER	LOCATION	SIZE	TYPE
W0.01_A	0.01_Disable Toilet	475W x 900H	Aluminium



GROUND STOREY LAYOUT
Scale 1:100

DRAWING NOTES - MONTAGU

1. 210mm Maxi Brick wall collar jointed. Exterior and interior to be plastered and painted. Exterior to be plastered and painted to at least 2 brick layers beneath NGL where applicable. Paint colour to client's specifications.
2. 120mm Maxi Brick wall collar jointed. Exterior and Interior plastered and painted to at least 2 brick layers beneath NGL on exterior, side where applicable. Paint colour to client's specifications.
3. 30mm screed on 100mm RC slab 25MPa. RC Slab panel dimensions to max. @ 2500mm. 5,6mm Diameter bars at centres of 200mm in both directions on. 250micron Damp Proof Membrane on 50mm Crusher-Dust on hard core filling, mechanicaly compacted to a density of 95Mod. Aashto in layers of not more than 150mm. All details to Engineer's specifications.
4. Tile Finish on. 100mm RC slab 25MPa. RC Slab panel dimensions to max. @ 2500mm. 5,6mm Diameter bars at centres of 200mm in both directions on. 250micron Damp Proof Membrane on 50mm Crusher-Dust on hard core filling, mechanicaly compacted to a density of 95Mod. Aashto in layers of not more than 150mm.
5. Klip- lok roofsheeting, colour to as by client specifications on. sisalation membrane on. 76x50mm SA Pine Purlins @ max 1100mm centres on. 114 x50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. Trusses to be fixed with galvanized hoop irons on 114x38mm SA Pine wallplate. Hoop irons to be at least 600mm into brick work. All details and specifications to Engineer's drawings.
6. Klip- lok roofsheeting, colour to as by client specifications on. 114 x50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. Trusses to be fixed with galvanized angle bracket. All details and specifications to Engineer's drawings.
7. Klip- lok roofsheeting, colour to as by client specifications on. 114 x 50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. 38 x 38mm Gr.7 SA Pine planed and treated battens to be added to support Corrugated roof sheeting. Trusses to be supported by 152 x 50mm Gr.7 SA Pine planed and treated Rafter. All details and specifications to Engineer's drawings.
8. 38x38mm SA Pine battens between rafters @ max 400mm centres. Fixed 9mm Gypsum ceiling board against battens. Install 130mm Insulation blanket in ceiling void.


RENDER 1
N.T.S


RENDER 2
N.T.S


RENDER 3
N.T.S

MOUNT MORIAH
ARCHITECTURE
PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
CAPACITY BUILDING SPECIALIST
1ST FLOOR 31 HOOP STREET ROBERTSON 6706

LANGEBERG MUNICIPALITY
TRADING STALLS - Montagu

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05
SANS 10400 OCCUPATION

ZONING SCHEME

AREAS

Erf	998.2m²
Total New Coverage %	27.1%
New Addition	
New Disable Toilet	1.1m²
New Roof Construction	25m²
New Covered Stalls	93.8m²
Existing Building	
Existing Structures	157m²
TOTAL COVERED AREA	276.9m²

Note - This Drawing is not valid for construction unless stamped accordingly

CONSTRUCTION DRAWINGS

OWNER
Local Authority
Alterations to Existing Building
Montagu
6720


Locality

Project Status Stage 4

Montagu_Ground Storey Layout

B.2

Project Number 003| MMA | 22

COUNCIL NOTES

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL AUTHORITY BY-LAWS AND SANS 10400 NATIONAL BUILDING REGULATIONS.

GENERAL REQUIREMENTS | SANS 10400 PART A:
All planning, Designing and Supervision of erection of the building to be undertaken by a registered professional and is subject to any laws pertaining to the Architectural Profession Act 2000(Act 4 of 2000)

All structural work to be approved and signed off by a professional Engineer in accordance with SANS 10400 part A Section A1 (3)

Building work is only to commence on approval by the relevant Building Control Officer as per SANS 10400 Part A Section A1(5)

All plans to be submitted to Local Authority in accordance with SANS 10400 Part A Section A1 and are to be aligned with SANS 10400 Part A section A5, A6, A7 and A8.

All additional information required by the Local Authority, to be submitted in accordance SANS 10400 Part A Section A13.

All building materials and tests conducted to materials are to be approved by a recognised body, certified by the SANS, and are to satisfy the requirements of building material standards set as per SANS 10400 part A Section A13

Structural systems of any building are not to be compromised at any stage of construction as per SANS 10400 Part A(a)(2), any concerns or queries to be directed to Mount Moriah Architecture or Engineer immediately.

All plumbing work to be carried out by an approved plumber in accordance with SANS 1400 Part A Section A18

Notice of intention to commence erection or demolition of a building, and notices of inspection are to be submitted to the Local Authority in accordance with SANS 1400 Part A section A23.

Whereby any persons is found to deviate form the approved plans and disregard the application of SANS 10400 shall be subject to any actions taken by the Local Authority of enforcement officer as per SANS 10400 Part A Section A25.

The appointed builder shall be a registered competent builder in accordance with the housing consumers protection act 1998, as per SANS 10400 Part A Section B4.

STRUCTURAL DESIGN | SANS 10400 PART B:
The structural design is accordance to the requirement parts of H, J, K, L, N of SANS 10400 (SANS 10400 | Part M: Stairways, does not comply to this structure) and also combined with a rational design and assessments by Competent Structural Engineer where indicated. See SANS 10400 Form 1

DIMENSIONS | SANS 10400 PART C:
All dimensions of rooms and space on complies with the requirements of SANS 10400 Part-C

PUBLIC SAFETY | SANS 10400 PART D:
Any ramp or driveway shall be so designed that it is safe when used and is fit for the purpose for which it is intended and must comply accordance the requirements of SANS 10400 Part-D. The site is enclosed with a boundary wall higher than the required 1.2m which prohibits any direct access from the street and thus complies to the requirements of the SANS 10400 Part D.

SITE OPERATIONS | SANS 10400 PART F:
The sanitary facilities shall at all times be maintained in a clean and hygienic condition and be removed immediately once the building work has been completed.

EXCAVATIONS | SANS 10400 PART G:
Excavation on site is less than 3000mm deep and complies with Part G.

FOUNDATIONS | SANS 10400 PART H:
A geotechnical investigation has been carried out and is available for use. Foundations to be design and assess by Competent Structural Engineer.

FLOORS | SANS 10400 PART J:
Floors in Scullery, kitchen and bathrooms are in accordance with SANS 10400 Part-J. Slabs to be designed and assess by Competent Structural Engineer.

WALLS | SANS 10400 PART K:
Any wall provision shall be made to fix roof truss, rafter or beams to ensure that forces of the roof will be transmitted into walls. Walls to be designed and assessed by Competent Structural Engineer. Install brickgrip DPC to all windows and doors cills.

Unless otherwise indicated all new walls and interfaces with existing finishes to have smooth plaster skim and paint finish to Mount Moriah Architecture's detail.

ROOF | SANS 10400 PART L:
Gutters and downpipes to be in accordance with SANS 10400 Part R. All roof to be designed and specified by Engineer.

GLAZING | SANS 10400 PART N:
All glazing should be secure and durable and shall be fixed to sustain any wind action, will not allow penetration of water to the interior and be apparent, in the case of clear glazing, to any person approaching such glazing. All glazing to be clear unless otherwise specified in Mount Moriah Architecture's details and schedules. Thickness all according to following
3mm THICK max. Size of 0.75 m²
4mm THICK max. Size of 1.5m²
5mm THICK max. Size of 2.1m²
6mm THICK max. Size of 3.2m²
Glazing in doors to be 6mm laminated safety glass

Safety glazing to be used where: glazing in doors and windows are in excess of 1m² window sills are less than 500mm above finished floor level, glazing directly above a bath/ bath enclosure or shower cubical, surface of a ramp, landing or balcony.

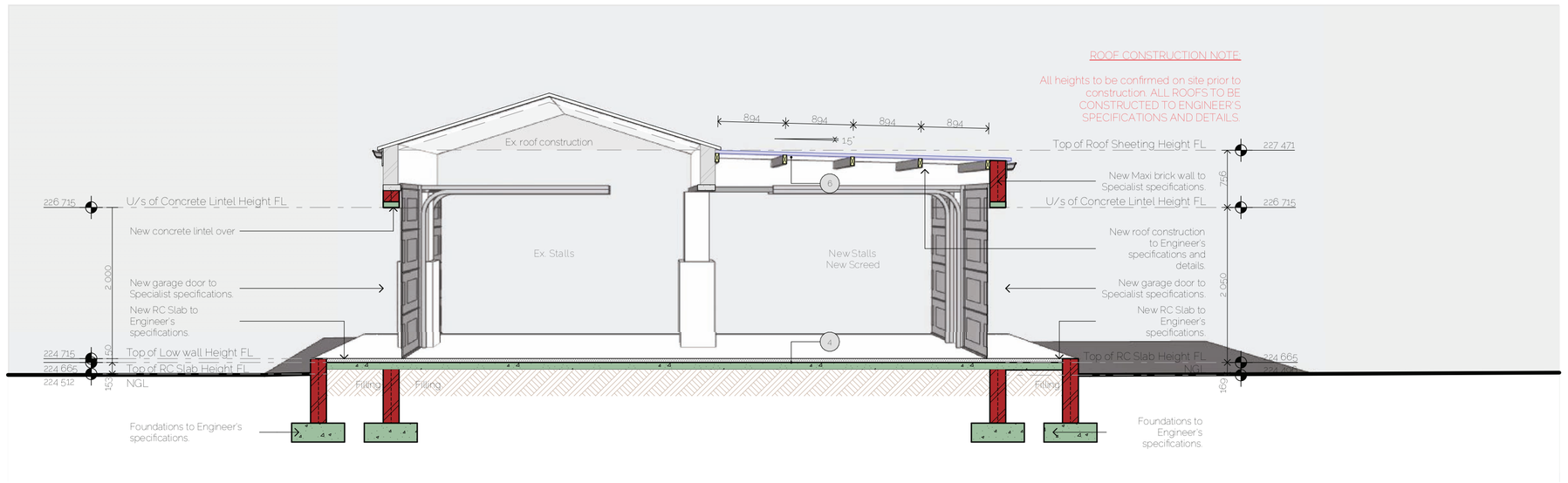
LIGHTING AND VENTILATION | SANS 10400 PART O
Dwelling to have 5% of the floor area natural lighting and 10% of the floor area in respect of other buildings, or 0.2m², whichever is the greater. Every opening in an external wall shall not have less than 5% natural ventilation of the floor area or 0.1m² in respect of category 1 buildings with an occupancy class of £4,F2, H3, H4 or H5, 0.2m² in respect of other buildings, whichever is the greater.

DRAINAGE | SANS 10400 PART P
All soil and waste pipes to connect into drainage run, plumber to confirm all drainage points prior to installation. All new drainage runs are to connect to biodegradable septic tank connection. All work to be carried out and supervised by a registered drain layer in accordance with part P of the SANS 10400. A discharge stack of not more than two stories height serving no more than two sanitary groups (combination of not more than one each of a toilet pan, bath, shower and sink and either two wash hand basins or one wash hand basin and one bidet) may discharge into a stub stack. Stack vents connected to the top of discharge pipes shall not be less than 150mm above the flood level of the highest connecting sanitary fixture in the drainage system. Discharge pipes which are enclosed within walls or concrete to have a duct with an access panel for maintenance. A rodding eye or manhole may be omitted where there are no more than two bends of up to 90°, at each change in direction the bend does not exceed 45° and bends have a centre-line radius of not less than 600mm. A rodding eye or manhole shall be installed with 1.5m of the connection of the drain to the connecting sewer, as well as at the highest point of the drain and at such intervals of 25m measured from a rodding eye along the line of the drain. All drainage under slabs to be incased in minimum 100mm concrete and be laid without change in gradient or direction, with access at each point of entry or exit from the building. A waste pipe which discharges into a gully shall discharge above the surface of the water seal and not more than 100mm above the grating.

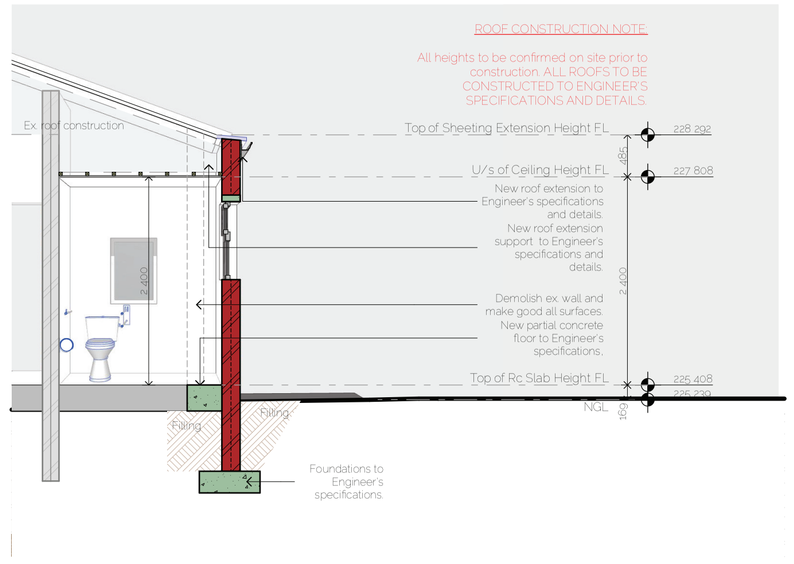
STORMWATER | SABS 0400 PART R:
All stormwater from hard surfaces as well as from downpipes from roofs are to connect to stormwater system to deviate rain water along away from the building. Backwash from swimming Pool to existing dam.

ENERGY USAGE | SANS 10400 PART XA:
The dwelling is powered natural resources. Thus make it 100% emission free from energy. Heat gain through the fenestration will be regulated and handled through natural air flow and heated and cooled by solar powered sources.

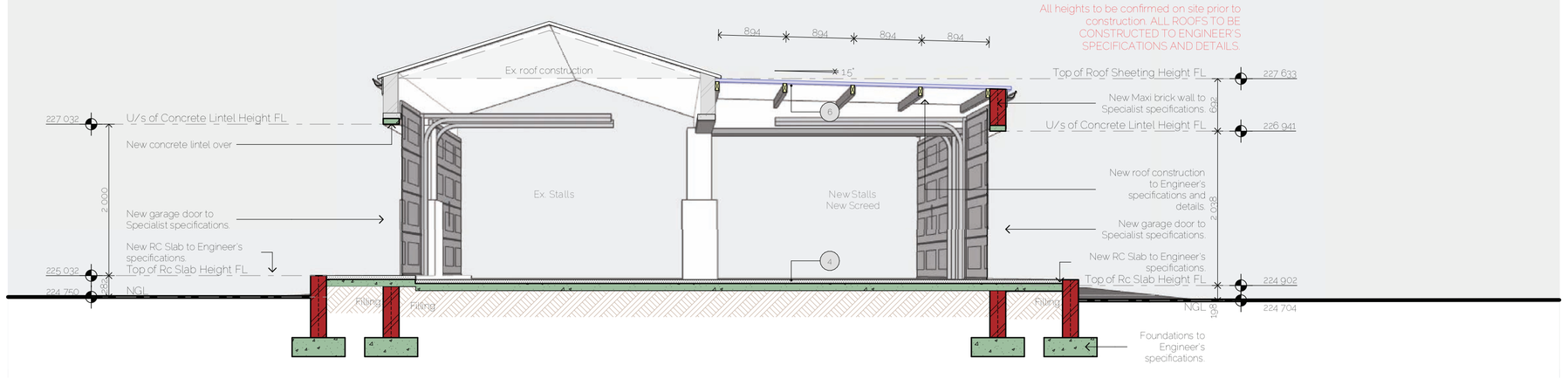
Thus complies the fenestration through using 100% natural resources for heating and cooling heat gain. Perimeter Insulation board in foundations with R Value of at least 1. All roofs complies with R-Value with 135mm isotherm insulation. All exposed warm water pipes to be insulated with cover with a R-Value of at least 1. Gas geysers to be installed.



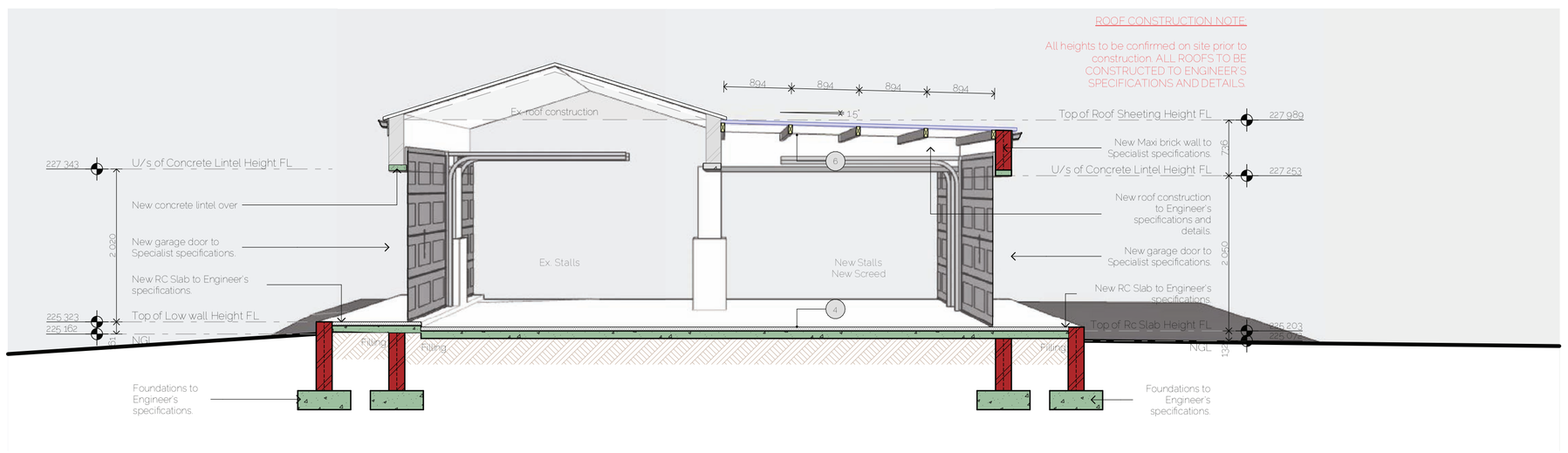
SECTION A-A
Scale 1:50



SECTION D-D
Scale 1:50



SECTION B-B
Scale 1:50



SECTION C-C
Scale 1:50

DRAWING NOTES - MONTAGU

1. 210mm Maxi Brick wall collar jointed. Exterior and interior to be plastered and painted. Exterior to be plastered and painted to at least 2 brick layers beneath NGL where applicable. Paint colour to client's specifications.
2. 120mm Maxi Brick wall collar jointed. Exterior and interior plastered and painted to at least 2 brick layers beneath NGL on exterior side where applicable. Paint colour to client's specifications.
3. 30mm screed on 100mm RC slab 25MPa. RC Slab panel dimensions to max @ 2500mm. 5.6mm Diameter bars at centres of 200mm in both directions on. 350micron Damp Proof Membrane on 50mm Crusher-Dust on hard core filling, mechanicaly compacted to a density of 95Mod. Aashto in layers of not more than 150mm. All details to Engineer's specifications.
4. Tile Finish on, 100mm RC slab 25MPa. RC Slab panel, dimensions to max @ 2500mm. 5.6mm Diameter bars at centres of 200mm in both directions on. 350micron Damp Proof Membrane on 50mm Crusher-Dust on hard core filling, mechanicaly compacted to a density of 95Mod. Aashto in layers of not more than 150mm.
5. Klip- lok roofsheeting, colour to as by client specifications on, sisalation membrane on, 76x50mm SA Pine Purlins @ max 1100mm centres on, 114 x50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. Trusses to be fixed with galvanized hoop irons on 114x38mm SA Pine wallplate. Hoop irons to be at least 600mm into brick work. All details and specifications to Engineer's drawings.
6. Klip- lok roofsheeting, colour to as by client specifications on, 114 x50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. Trusses to be fixed with galvanized angle bracket. All details and specifications to Engineer's drawings.
7. Klip- lok roofsheeting, colour to as by client specifications on, 114 x 50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. 38 x 38mm Gr.7 SA Pine planed and treated battens to be added to support Corrugated roof sheeting. Trusses to be supported by 152 x 50mm Gr.7 SA Pine planed and treated Rafter. All details and specifications to Engineer's drawings.
8. 38x38mm SA Pine battens between rafters @ max 400mm centres. Fixed 9mm Gypsum ceiling board against battens. Install 130mm Insulation blanket in ceiling void

MOUNT MORIAH
ARCHITECTURE
PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
CAPACITY REGISTRAR
1ST FLOOR 31 HOOP STREET ROBERTSON 6706

LANGEBERG MUNICIPALITY
TRADING STALLS - Montagu

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05
SANS 10400 OCCUPATION

ZONING SCHEME

AREAS

Erf	998.2m²
Total New Coverage %	27.1%
New Addition	
New Disable Toilet	1.1m²
New Roof Construction	25m²
New Covered Stalls	93.8m²
Existing Building	
Existing Structures	157m²
TOTAL COVERED AREA	276.9m²

Note : This Drawing is not valid for construction unless stamped accordingly

CONSTRUCTION DRAWINGS

OWNER
Local Authority
Alterations to Existing Building
Montagu
6720



Locality

Project Status Stage 4

Montagu_Sections Layout

B.3

Project Number 003| MMA | 22

COUNCIL NOTES

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL AUTHORITY BY-LAWS AND SANS 10400 NATIONAL BUILDING REGULATIONS.

GENERAL REQUIREMENTS | SANS 10400 PART A:
All planning, Designing and Supervision of erection of the building to be undertaken by a registered professional and is subject to any laws pertaining to the Architectural Profession Act 2000(Act 44 of 2000).

All structural work to be approved and signed off by a professional Engineer in accordance with SANS 10400 part A Section A1 (3)

Building work is only to commence on approval by the relevant Building Control Officer as per SANS 10400 Part A Section A1(6)

All plans to be submitted to Local Authority in accordance with SANS 10400 Part A Section A2 and are to be aligned with SANS 10400 Part A section A5, A6, A7 and A8.

All additional information required by the Local Authority, to be submitted in accordance SANS 10400 Part A Section A13.

All building materials and tests conducted to materials are to be approved by a recognised body, certified by the SANS, and are to satisfy the requirements of building material standards set as per SANS 10400 part A Section A13.

Structural systems of any building are not to be compromised at any stage of construction as per SANS 10400 Part A1(42), any concerns or queries to be directed to Mount Moriah Architecture or Engineer immediately.

All plumbing work to be carried out by an approved plumber in accordance with SANS 1400 Part A Section A18.

Notice of intention to commence erection or demolition of a building, and notices of inspection are to be submitted to the Local Authority in accordance with SANS 1400 Part A section A22.

Whereby any persons is found to deviate form the approved plans and disregard the application of SANS 10400 shall be subject to any actions taken by the Local Authority of enforcement officer as per SANS 10400 Part A Section A25.

The appointed builder shall be a registered competent builder in accordance with the housing consumers protection act. 1998, as per SANS 10400 Part A Section B4.

STRUCTURAL DESIGN | SANS 10400 PART B:
The structural design is accordance to the requirement parts of H, J, K, L, N of SANS 10400 (SANS 10400 | Part M: Stairways, does not comply to this structure) and also combined with a rational design and assessments by Competent Structural Engineer where indicated. See SANS 10400 Form 1

DIMENSIONS | SANS 10400 PART C:
All dimensions of rooms and space on complies with the requirements of SANS 10400 Part C.

PUBLIC SAFETY | SANS 10400 PART D:
Any ramp or driveway shall be so designed that it is safe when used and is fit for the purpose for which it is intended and must comply accordance the requirements of SANS 10400 Part D. The site is enclosed with a boundary wall higher than the required 1.2m which prohibits any direct access from the street and thus complies to the requirements of the SANS 10400 Part D.

SITE OPERATIONS | SANS 10400 PART F:
The sanitary facilities shall at all times be maintained in a clean and hygienic condition and be removed immediately once the building work has been completed.

EXCAVATIONS | SANS 10400 PART G:
Excavation on site is less than 3000mm deep and complies with Part G.

FOUNDATIONS | SANS 10400 PART H:
A geotechnical investigation has been carried out and is available for use. Foundations to be design and assess by Competent Structural Engineer.

FLOORS | SANS 10400 PART J:
Floors in Scullery, kitchen and bathrooms are in accordance with SANS 10400 Part-J. Slabs to be designed and assess by Competent Structural Engineer.

WALLS | SANS 10400 PART K:
Any wall provision shall be made to fix roof truss, rafter or beams to ensure that forces of the roof will be transmitted into walls. Walls to be designed and assessed by Competent Structural Engineer. Install brickgrip DPC to all windows and doors cills.

Unless otherwise indicated all new walls and interfaces with existing finishes to have smooth plaster skim and paint finish to Mount Moriah Architecture's detail.

ROOF | SANS 10400 PART L:
Gutters and downpipes to be in accordance with SANS 10400 Part R. All roof to be designed and specified by Engineer.

GLAZING | SANS 10400 PART N :
All glazing should be secure and durable and shall be fixed to sustain any wind action, will not allow penetration of water to the interior and be apparent, in the case of clear glazing, to any person approaching such glazing. All glazing to be clear unless otherwise specified in Mount Moriah Architecture's details and schedules. Thickness all according to following
2mm THICK max. Size of 0.75 m²
4mm THICK max. Size of 1.5m²
6mm THICK max. Size of 2.1m²
8mm THICK max. Size of 3.2m²
Glazing in doors to be 6mm laminated safety glass.

Safety glazing to be used where glazing in doors and windows are in excess of 1m². window sills are less than 500mm above finished floor level, glazing directly above a bath/ bath enclosure or shower cubical, surface of a ramp, landing or balcony.

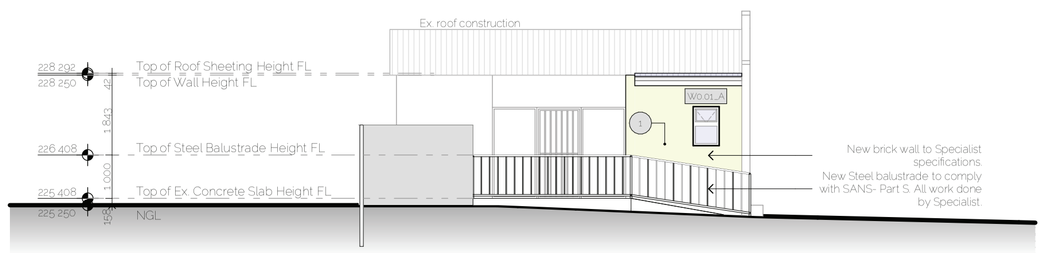
LIGHTING AND VENTILATION | SANS 10400 PART O:
Dwelling to have 6% of the floor area natural lighting and 10% of the floor area in respect of other buildings, or 0.2m², whichever is the greater. Every opening in an external wall shall not have less than 5% natural ventilation of the floor area or 0.2m² in respect of category 1 buildings with an occupancy class of: E4,F2, H3, H4 or H5. 0.2m² in respect of other buildings, whichever is the greater.

DRAINAGE | SANS 10400 PART P:
All soil and waste pipes to connect into drainage run. plumber to confirm all drainage points prior to installation. All new drainage runs are to connect to biodegradable septic tank connection. All work to be carried out and supervised by a registered drain layer in accordance with part P of the SANS 10400. A discharge stack of not more than two stories height serving no more than two sanitary groups (combination of not more than one each of a toilet pan, bath, shower and sink and either two wash hand basins or one wash hand basin and one bidet) may discharge into a stub stack. Stack vents connected to the top of discharge pipes shall not be less than 150mm above the flood level of the highest connecting sanitary fixture in the drainage system. Discharge pipes which are enclosed within walls or concrete to have a duct with an access panel for maintenance. A rodding eye or manhole may be omitted where there are no more than two bends of up to 90°, at each change in direction the bend does not exceed 45°, and bends have a centre-line radius of not less than 600mm. A rodding eye or manhole shall be installed with 1.5m of the connection of the drain to the connecting sewer, as well as at the highest point of the drain and at such intervals of 25m measured from a rodding eye along the line of the drain. All drainage under slabs to be incased in minimum 100mm concrete and be laid without change in gradient or direction, with access at each point of entry or exit from the building. A waste pipe which discharges into a gully shall discharge above the surface of the water seal and not more than 100mm above the grating.

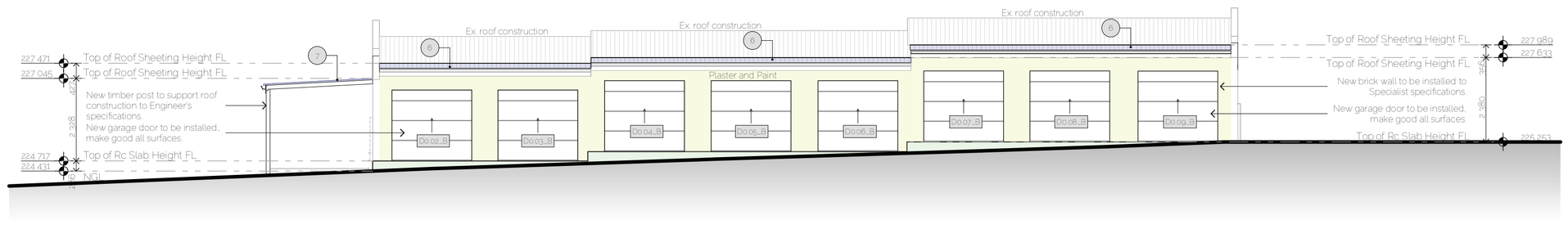
STORMWATER | SABS 0400 PART R :
All stormwater from hard surfaces as well as from downpipes from roofs are to connect to stormwater system to deviate rain water along away from the building. Backwash from swimming Pool to existing dam.

ENERGY USAGE | SANS 10400 PART XA:
The dwelling is powered natural resources. Thus make it 100% emission free from energy. Heat gain through the fenestration will be regulated and handled through natural air flow and heated and cooled by solar powered sources.

Thus complies the fenestration through using 100% natural resources for heating and cooling heat gain. Perimeter Insulation board in foundations with R Value of at least 1. All roofs complies with R-Value with 135mm Isotherm insulation. All exposed warm water pipes to be insulated with cover with a R-Value of at least 1. Gas geysers to be installed.



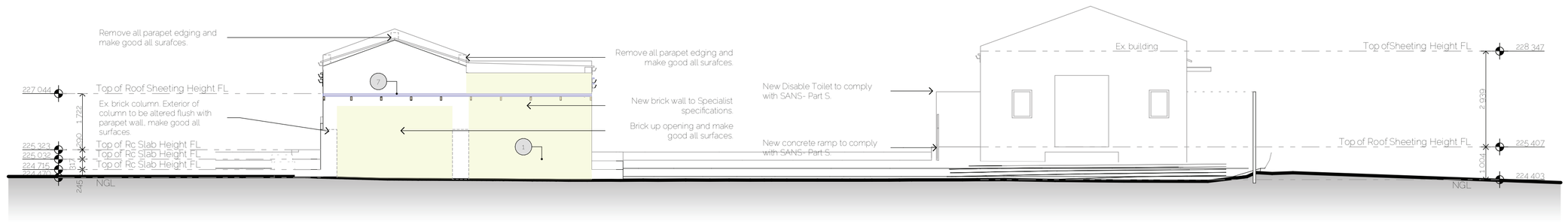
WEST ELEVATION_2
Scale 1:100



EAST ELEVATION
Scale 1:100



WEST ELEVATION
Scale 1:100



SOUTH ELEVATION
Scale 1:100

DRAWING NOTES - MONTAGU

1. 210mm Maxi Brick wall collar jointed. Exterior and interior to be plastered and painted. Exterior to be plastered and painted to at least 2 brick layers beneath NGL, where applicable. Paint colour to client's specifications.
2. 120mm Maxi Brick wall collar jointed. Exterior and Interior plastered and painted to at least 2 brick layers beneath NGL, on exterior side where applicable. Paint colour to client's specifications.
3. 30mm screed on 100mm RC slab 25MPa. RC Slab panel dimensions to max. @ 2500mm. 5.6mm Diameter bars at centres of 200mm in both directions on. 250micron Damp Proof Membrane on 50mm Crusher-Dust on hard core filling, mechanically compacted to a density of 95Mod. Aashto in layers of not more than 150mm. All details to Engineer's specifications.
4. Tile Finish on. 100mm RC slab 25MPa. RC Slab panel dimensions to max. @ 2500mm. 5.6mm Diameter bars at centres of 200mm in both directions on. 250micron Damp Proof Membrane on 50mm Crusher-Dust on hard core filling, mechanically compacted to a density of 95Mod. Aashto in layers of not more than 150mm.
5. Klip- lok roofsheeting, colour to as by client specifications on. sisalation membrane on. 76x50mm SA Pine Purlins @ max 1100mm centres on. 114 x50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. Trusses to be fixed with galvanized hoop irons on 114x38mm SA Pine wallplate. Hoop irons to be at least 600mm into brick work. All details and specifications to Engineer's drawings.
6. Klip- lok roofsheeting, colour to as by client specifications on. 114 x50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. Trusses to be fixed with galvanized angle bracket. All details and specifications to Engineer's drawings.
7. Klip- lok roofsheeting, colour to as by client specifications on. 114 x 50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. 38 x 38mm Gr.7 SA Pine planed and treated battens to be added to support Corrugated roof sheeting. Trusses to be supported by 152 x 50mm Gr.7 SA Pine planed and treated Rafter. All details and specifications to Engineer's drawings.
8. 38x38mm SA Pine battens between rafters @ max 400mm centres. Fixed 9mm Gypsum ceiling board against battens. Install 130mm Insulation blanket in ceiling void.

MOUNT MORIAH
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PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
CAN/SACAP No: 0473/2008/10
1ST FLOOR 31 HOOP STREET ROBERTSON 6705

LANGEBERG MUNICIPALITY
TRADING STALLS - Montagu

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05



Locality

Project Status Stage 4

Montagu_Elevation Layout

B.4

Project Number 003| MMA | 22

COUNCIL NOTES

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL AUTHORITY BY-LAWS AND SANS 10400 NATIONAL BUILDING REGULATIONS.

GENERAL REQUIREMENTS | SANS 10400 PART A:
All planning, Designing and Supervision of erection of the building to be undertaken by a registered professional and is subject to any laws pertaining to the Architectural Profession Act 2000(Act 4 of 2000)

All structural work to be approved and signed off by a professional Engineer in accordance with SANS 10400 part A Section A1 (3)

Building work is only to commence on approval by the relevant Building Control Officer as per SANS 10400 Part A Section A1(5)

All plans to be submitted to Local Authority in accordance with SANS 10400 Part A Section Air and are to be aligned with SANS 10400 Part A section A5, A6, A7 and A8.

All additional information required by the Local Authority, to be submitted in accordance SANS 10400 Part A Section A13.

All building materials and tests conducted to materials are to be approved by a recognised body, certified by the SANS, and are to satisfy the requirements of building material standards set as per SANS 10400 part A Section A13

Structural systems of any building are not to be compromised at any stage of construction as per SANS 10400 Part A(d)(2). any concerns or queries to be directed to Mount Moriah Architecture or Engineer immediately.

All plumbing work to be carried out by an approved plumber in accordance with SANS 1400 Part A Section A18

Notice of intention to commence erection or demolition of a building, and notices of inspection are to be submitted to the Local Authority in accordance with SANS 1400 Part A section A23.

Whereby any persons is found to deviate form the approved plans and disregard the application of SANS 10400 shall be subject to any actions taken by the Local Authority of enforcement officer as per SANS 10400 Part A Section A25.

The appointed builder shall be a registered competent builder in accordance with the housing consumers protection act 1998, as per SANS 10400 Part A Section B4.

STRUCTURAL DESIGN | SANS 10400 PART B:
The structural design is accordance to the requirement parts of H, J, K, L, N of SANS 10400 (SANS 10400 | Part M: Stairways, does not comply to this structure) and also combined with a rational design and assessments by Competent Structural Engineer where indicated. See SANS 10400 Form 1

DIMENSIONS | SANS 10400 PART C:
All dimensions of rooms and space on complies with the requirements of SANS 10400 Part-C

PUBLIC SAFETY | SANS 10400 PART D:
Any ramp or driveway shall be so designed that it is safe when used and is fit for the purpose for which it is intended and must comply accordance the requirements of SANS 10400 Part-D. The site is enclosed with a boundary wall higher than the required 1.2m which prohibits any direct access from the street and thus complies to the requirements of the SANS 10400 Part D.

SITE OPERATIONS | SANS 10400 PART F:
The sanitary facilities shall at all times be maintained in a clean and hygienic condition and be removed immediately once the building work has been completed.

EXCAVATIONS | SANS 10400 PART G:
Excavation on site is less than 3000mm deep and complies with Part G.

FOUNDATIONS | SANS 10400 PART H:
A geotechnical investigation has been carried out and is available for use. Foundations to be design and assess by Competent Structural Engineer.

FLOORS | SANS 10400 PART J:
Floors in Scullery, kitchen and bathrooms are in accordance with SANS 10400 Part-J. Slabs to be designed and assess by Competent Structural Engineer.

WALLS | SANS 10400 PART K:
Any wall provision shall be made to fix roof truss, rafter or beams to ensure that forces of the roof will be transmitted into walls. Walls to be designed and assessed by Competent Structural Engineer. Install brickgrip DPC to all windows and doors cills.

Unless otherwise indicated all new walls and interfaces with existing finishes to have smooth plaster skim and paint finish to Mount Moriah Architecture's detail.

ROOF | SANS 10400 PART L:
Gutters and downpipes to be in accordance with SANS 10400 Part R. All roof to be designed and specified by Engineer.

GLAZING | SANS 10400 PART N:
All glazing should be secure and durable and shall be fixed to sustain any wind action, will not allow penetration of water to the interior and be apparent, in the case of clear glazing, to any person approaching such glazing. All glazing to be clear unless otherwise specified in Mount Moriah Architecture's details and schedules. Thickness all according to following
3mm THICK max. Size of 0.75 m²
4mm THICK max. Size of 1.5m²
5mm THICK max. Size of 2.1m²
6mm THICK max. Size of 3.2m²
Glazing in doors to be 6mm laminated safety glass

Safety glazing to be used where: glazing in doors and windows are in excess of 1m² window sills are less than 800mm above finished floor level, glazing directly above a bath/ bath enclosure or shower cubical, surface of a ramp, landing or balcony.

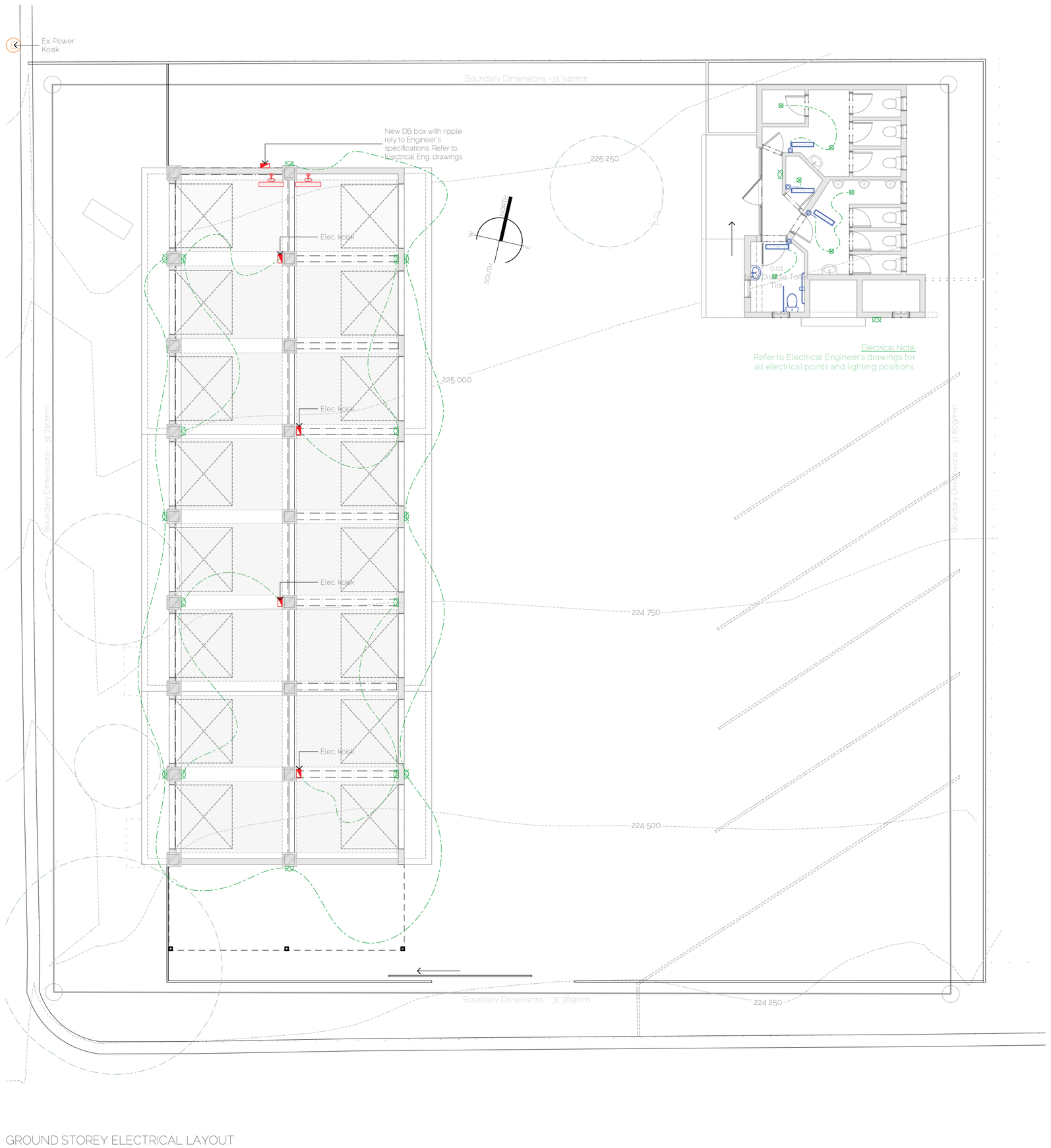
LIGHTING AND VENTILATION | SANS 10400 PART O
Dwelling to have 8% of the floor area natural lighting and 10% of the floor area in respect of other buildings, or 0.2m², whichever is the greater. Every opening in an external wall shall not have less than 5% natural ventilation of the floor area or 0.1m² in respect of category 1 buildings with an occupancy class of £4,F2, H3, H4 or H5, 0.2m² in respect of other buildings, whichever is the greater.

DRAINAGE | SANS 10400 PART P
All soil and waste pipes to connect into drainage run, plumber to confirm all drainage points prior to installation. All new drainage runs are to connect to biodegradable septic tank connection. All work to be carried out and supervised by a registered drain layer in accordance with part P of the SANS 10400. A discharge stack of not more than two stories height serving no more than two sanitary groups (combination of not more than one each of a toilet pan, bath, shower and sink and either two wash hand basins or one wash hand basin and one bidet) may discharge into a stub stack. Stack vents connected to the top of discharge pipes shall not be less than 150mm above the flood level of the highest connecting sanitary fixture in the drainage system. Discharge pipes which are enclosed within walls or concrete to have a duct with an access panel for maintenance. A rodding eye or manhole may be omitted where there are no more than two bends of up to 90°, at each change in direction the bend does not exceed 45° and bends have a centre-line radius of not less than 600mm. A rodding eye or manhole shall be installed with 1.6m of the connection of the drain to the connecting sewer, as well as at the highest point of the drain and at such intervals of 25m measured from a rodding eye along the line of the drain. All drainage under slabs to be incased in minimum 100mm concrete and be laid without change in gradient or direction, with access at each point of entry or exit from the building. A waste pipe which discharges into a gully shall discharge above the surface of the water seal and not more than 100mm above the grating.

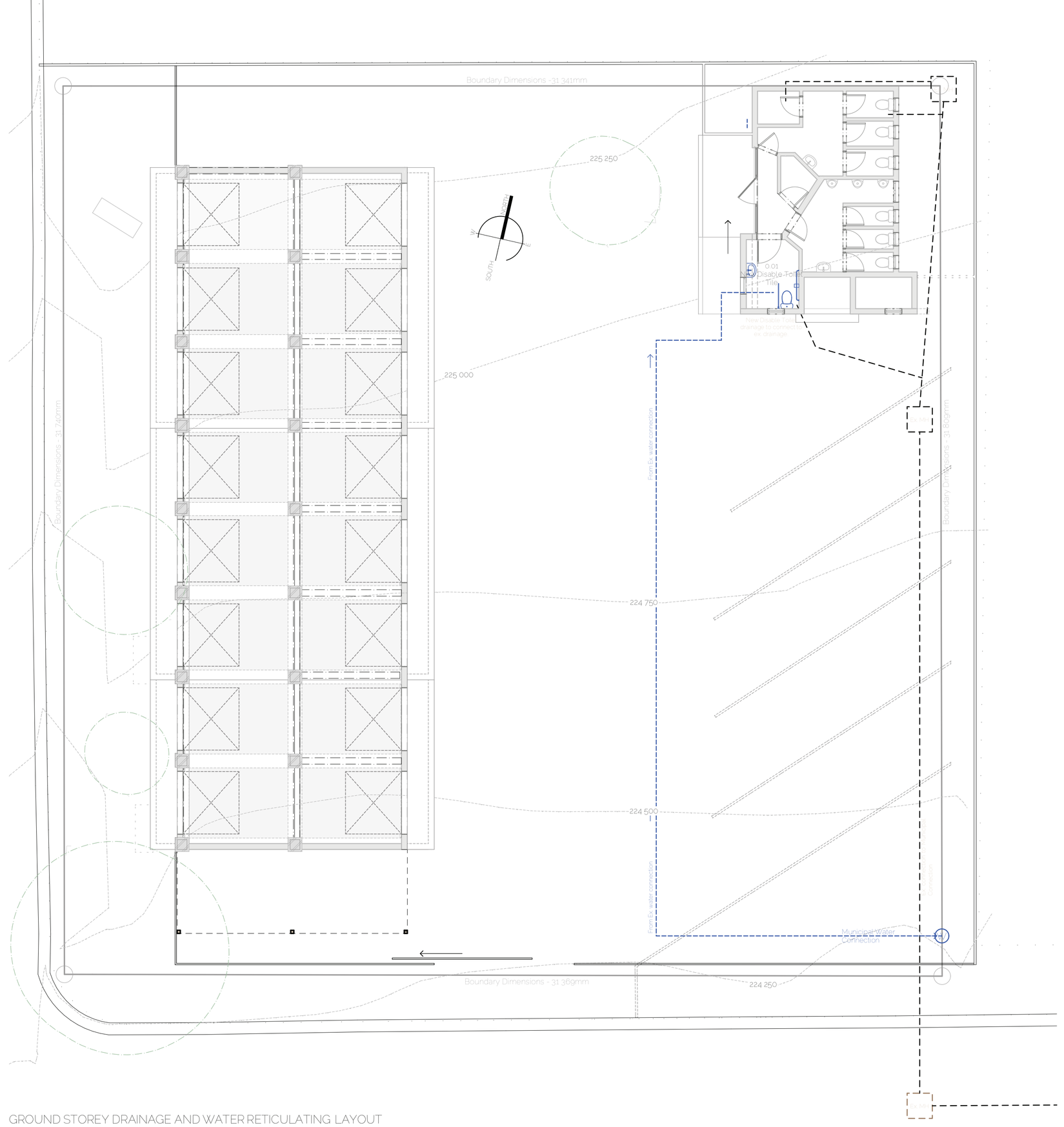
STORMWATER | SABS 0400 PART R:
All stormwater from hard surfaces as well as from downpipes from roofs are to connect to stormwater system to deviate rain water along away from the building. Backwash from swimming Pool to existing dam.

ENERGY USAGE | SANS 10400 PART XA:
The dwelling is powered natural resources. Thus make it 100% emission free from energy. Heat gain through the fenestration will be regulated and handled through natural air flow and heated and cooled by solar powered sources.

Thus complies the fenestration through using 100% natural resources for heating and cooling heat gain. Perimeter Insulation board in foundations with R Value of at least 1. All roofs complies with R-Value with 135mm isotherm insulation. All exposed warm water pipes to be insulated with cover with a R-Value of at least 1. Gas geysers to be installed.



GROUND STOREY ELECTRICAL LAYOUT
Scale 1:100



GROUND STOREY DRAINAGE AND WATER RETICULATING LAYOUT
Scale 1:100

LIGHTING SYMBOLS

	FL	80mm FLUORESCENT LIGHTING
	LP	LAMP POST FITTING
	CM	CEILING MOUNTED LIGHT FITTING
	SL	SURFACE MOUNTED FITTING
D/N	WWM	WATERPROOF WALL MOUNTED DOWNLIGHT ON DAY NIGHT SWITCH
D/N	WWM	WATERPROOF WALL MOUNTED UPLIGHT ON DAY NIGHT SWITCH
	WL	WALL MOUNTED UP AND DOWN FITTING
	PL	PENDANT LIGHT FITTING
	WSL	WATERPROOF WALL MOUNTED SPOTLIGHT

SWITCHES SYMBOLS

4 GANG	LS	LIGHT SWITCH
MS	MSS	MOTION SENSOR
DNS	DNS	DAY / NIGHT SWITCH - to be positioned out of sight confirm with architect on site
950	HGT	HEIGHT - Measured from FFL to centre line of outlet point, unless otherwise indicated.

POWER SYMBOLS

	P_SPP	SINGLE PLUG POINT
	DPP	DOUBLE PLUG POINT
350	HGT	HEIGHT - Measured from FFL to centre line of outlet point, unless otherwise indicated.
	DISM	MAIN DISTRIBUTION BOARD (RECESSED)
	GDM	GARAGE DOOR MOTOR (Remote Controlled)
	FM_PP	FLOOR MOUNTED POWER POINT
PPM	PPM	PRE PAID METER
	PS	POWER SKIRTING
	P_DISS	SUB DISTRIBUTION BOARD
	BAT	ELECTRICITY BATTERY
	DB	DRAW BOX

ELECTRICAL LEGEND

SECURITY SYMBOLS

	S_INT	INTERCOM
S/W	S_V INT	VIDEO INTERCOM
K	S_KEY	SECURITY KEYPAD/ DOOR LOCK KEYPAD
P	S_PAN	WALL-MOUNTED PANIC BUTTON (Only if requested by Client)
S	S_SRN	SIREN
M	S_CP	DOOR / WINDOW CONTACT POINT
	S_IRD	PASSIVE ALARM INFRARED DETECTOR
R	S_IRR	INFRARED REMOTE TRANSCEIVER
B	S_IRT	INFRARED BEAM TRANSCEIVER
DN	S_DNR	DAY/NIGHT RELAY
VC	SW_VC	VINGCARD REMOTE CONTROLLER
DR	SW_DR	DOOR RELEASE SWITCH
	S_AKP	ALARM KEYPAD
	S_SSR	SECURITY SYSTEM RADIO
CCTV	S_CCTV	CCTV
1500	S_HGT	HEIGHT - Measured from FFL to centre line of outlet point, unless otherwise indicated.

ANCILLARY SYMBOLS

EF	A_EXF	EXTRACTOR FAN
	A_AC	SPLIT AIR CONDITION UNIT (Outdoor/ Indoor)
	AV_SC	SPEAKER	WALL MOUNTED
	AV_VC	VOLUME CONTROL

WATER RETICULATION SYMBOLS

	W_ASV	AUTOMATIC SHUT-OFF VALVE
	W_BD	BALANCING DEVICE (HOT WATER CONTROL)
DCDBP	W_DVB	DOUBLE CHECK VALVE BACKFLOW PREVENTER
	W_FV	FLOAT VALVE
	W_FR	FLOW RESTRICTOR (CONTROLLER)
	W_G	GAUGE (PRESSURE: P, TEMPERATURE: T, LEVEL: L)
	W_GIV	GAUGE WITH ISOLATING VALVE
	W_IVSM	ISOLATING VALVE (SCREWED ENDS) (MANUEL CONTROL)
	W_LP	LAGGED PIPE
C	W_MT	MIXER (THERMOSTATICALLY CONTROLLED)
C	W_MS	MIXER (SINGLE MANUAL CONTROL)
C	W_NRV	NON-RETURN VALVE
	W_D	NORMAL DIRECTION OF FLOW
C	W_C	PIPE CARRYING COLD WATER
H	W_H	PIPE CARRYING HOT WATER
HR	W_HR	PIPE CARRYING HOT WATER RETURN
M	W_M	PIPE CARRYING MIXED TEMPERATURE WATER
C	W_PJN	PIPE JUNCTION
	W_RP	RISER PIPE (PLAN VIEW)
S	W_SF	SHOWER (FIXED)
S	W_SC	STOPCOCK
300 L	W_SWH	STORAGE WATER HEATER (DOMESTIC TYPE)
T	W_TE	TAP (EXTERNAL)
T	W_TI	TAP (INTERNAL)
	W_WM	WATER METER

MOUNT MORIAH
ARCHITECTURE
PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
CAPE PRACTICE NO: PAT0015764
1ST FLOOR 31 HOOP STREET ROBERTSON 6706

LANGEBERG MUNICIPALITY
TRADING STALLS - Montagu

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05
SANS 10400 OCCUPATION

ZONING SCHEME

AREAS

Erf	998.2m²
Total New Coverage %	27.1%
New Addition	
New Disable Toilet	1.1m²
New Roof Construction	25m²
New Covered Stalls	93.8m²
Existing Building	
Existing Structures	157m²
TOTAL COVERED AREA	276.9m²

Note : This Drawing is not valid for construction unless stamped accordingly

CONSTRUCTION DRAWINGS

OWNER
Local Authority
Alterations to Existing Building
Montagu
6720



Locality

Project Status Stage 4

Montagu_ Services Layout

B.5

Project Number 003| MMA | 22

COUNCIL NOTES

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL AUTHORITY BY-LAWS AND SANS 10400 NATIONAL BUILDING REGULATIONS.

GENERAL REQUIREMENTS | SANS 10400 PART A:
All planning, Designing and Supervision of erection of the building to be undertaken by a registered professional and is subject to any laws pertaining to the Architectural Profession Act 2000?Act 4 of 2000?

All structural work to be approved and signed off by a professional Engineer in accordance with SANS 10400 part A Section A1 (3)

Building work is only to commence on approval by the relevant Building Control Officer as per SANS 10400 Part A Section A1(6)

All plans to be submitted to Local Authority in accordance with SANS 10400 Part A Section A2 and are to be aligned with SANS 10400 Part A section A5, A6, A7 and A8.

All additional information required by the Local Authority, to be submitted in accordance SANS10400 Part A Section A13.

All building materials and tests conducted to materials are to be approved by a recognised body, certified by the SANS, and are to satisfy the requirements of building material standards set as per SANS 10400 part A Section A13

Structural systems of any building are not to be compromised at any stage of construction as per SANS 10400 Part A1a(2), any concerns or queries to be directed to Mount Moriah Architecture or Engineer immediately.

All plumbing work to be carried out by an approved plumber in accordance with SANS 1400 Part A Section A18

Notice of intention to commence erection or demolition of a building, and notices of inspection are to be submitted to the Local Authority in accordance with SANS 1400 Part A section A22.

Whereby any persons is found to deviate form the approved plans and disregard the application of SANS 10400 shall be subject to any actions taken by the Local Authority of enforcement officer as per SANS 10400 Part A Section A25.

The appointed builder shall be a registered competent builder in accordance with the housing consumers protection act 1998, as per SANS 10400 Part A Section B4.

STRUCTURAL DESIGN | SANS 10400 PART B:
The structural design is accordance to the requirement parts of H, J, K, L, N of SANS 10400 (SANS 10400) Part M: Stairways, does not comply to this structure) and also combined with a rational design and assessments by Competent Structural Engineer where indicated. See SANS 10400 Form 1

DIMENSIONS | SANS 10400 PART C:
All dimensions of rooms and space on complies with the requirements of SANS 10400 Part-C.

PUBLIC SAFETY | SANS 10400 PART D:
Any ramp or driveway shall be so designed that it is safe when used and is fit for the purpose for which it is intended and must comply accordance the requirements of SANS 10400 Part-D. The site is enclosed with a boundary wall higher than the required 1.2m which prohibits any direct access from the street and thus complies to the requirements of the SANS 10400 Part D.

SITE OPERATIONS | SANS 10400 PART F:
The sanitary facilities shall at all times be maintained in a clean and hygienic condition and be removed immediately once the building work has been completed.

EXCAVATIONS | SANS 10400 PART G:
Excavation on site is less than 3000mm deep and complies with Part G.

FOUNDATIONS | SANS 10400 PART H:
A geotechnical investigation has been carried out and is available for use. Foundations to be design and assess by Competent Structural Engineer.

FLOORS | SANS 10400 PART J:
Floors in Scullery, kitchen and bathrooms are in accordance with SANS 10400 Part-J. Slabs to be designed and assess by Competent Structural Engineer.

WALLS | SANS 10400 PART K :
Any wall provision shall be made to fix roof truss, rafter or beams to ensure that forces of the roof will be transmitted into walls. Walls to be designed and assessed by Competent Structural Engineer. Install brickgrip DPC to all windows and doors cills.

Unless otherwise indicated all new walls and interfaces with existing finishes to have smooth plaster skim and paint finish to Mount Moriah Architecture's detail.

ROOF | SANS 10400 PART L:
Gutters and downpipes to be in accordance with SANS 10400 Part R. All roof to be designed and specified by Engineer.

GLAZING | SANS 10400 PART N :
All glazing should be secure and durable and shall be fixed to sustain any wind action, will not allow penetration of water to the interior and be apparent, in the case of clear glazing, to any person approaching such glazing. All glazing to be clear unless otherwise specified in Mount Moriah Architecture's details and schedules. Thickness as according to following
3mm THICK max Size of 0,75 m²
4mm THICK max Size of 1,5m²
6mm THICK max Size of 2.1m²
6mm THICK max Size of 3.2m²
Glazing in doors to be 6mm laminated safety glass

Safety glazing to be used where: glazing in doors and windows are in excess of 1m² window sills are less than 500mm above finished floor level, glazing directly above a bath/ bath enclosure or shower cubical, glazing of a ramp, landing or balcony.

LIGHTING AND VENTILATION | SANS 10400 PART O:
Dwelling to have 5% of the floor area natural lighting and 10% of the floor area in respect of other buildings, or 0.2m², whichever is the greater. Every opening in an external wall shall not have less than 5% natural ventilation of the floor area or 0.1m² in respect of category 1 buildings with an occupancy class of 6,4,7,8, H3, H4 or H5, 0.2m² in respect of other buildings, whichever is the greater.

DRAINAGE | SANS 10400 PART P:
All soil and waste pipes to connect into drainage run, plumber to confirm all drainage points prior to installation. All new drainage runs are to connect to biodegradable septic tank connection. All work to be carried out and supervised by a registered drain layer in accordance with part P of the SANS 10400. A discharge stack of not more than two stories height serving no more than two sanitary groups (combination of not more than one each of a toilet pan, bath, shower and sink and either two wash hand basins or one wash hand basin and one bidet) may discharge into a stub stack. Stack vents connected to the top of discharge pipes shall not be less than 150mm above the flood level of the highest connecting sanitary fixture in the drainage system. Discharge pipes which are enclosed within walls or concrete to have a duct with an access panel for maintenance. A rodding eye or manhole shall be installed with 1.5m of the connection of the drain to the connecting sewer, as well as at the highest point of the drain and at such intervals of 25m measured from a rodding eye along the line of the drain. All drainage under slabs to be incased in minimum 100mm concrete and be laid without change in gradient or direction, with access at each point of entry or exit from the building. A waste pipe which discharges into a gully shall discharge above the surface of the water seal and not more than 100mm above the grating.

STORMWATER | SABS 0400 PART R :
All stormwater from hard surfaces as well as from downpipes from roofs are to connect to stormwater system to dissipate rain water along away from the building. Backwash from swimming Pool to existing dam.

ENERGY USAGE | SANS 10400 PART XA:
The dwelling is powered natural resources. Thus make it 100% emission free from energy. Heat gain through the fenestration will be regulated and handled through natural air flow and heated and cooled by solar powered sources.

Thus complies the fenestration through using 100% natural resources for heating and cooling heat gain . Perimeter Insulation board in foundations with R Value of at least 1. All roofs complies with R-Value with 135mm isotherm insulation. All exposed warm water pipes to be insulated with cover with a R-Value of at least 1. Gas geysers to be installed.

LIGHTING SYMBOLS

	FL	80omm FLUORESCENT LIGHTING
	LP	LAMP POST FITTING
	CM	CEILING MOUNTED LIGHT FITTING
	SL	SURFACE MOUNTED FITTING
DN	WWM	WATERPROOF WALL MOUNTED DOWNLIGHT ON DAY NIGHT SWITCH
DN	WWM	WATERPROOF WALL MOUNTED UPLIGHT ON DAY NIGHT SWITCH
	WL	WALL MOUNTED UP AND DOWN FITTING
	PL	PENDANT LIGHT FITTING
	WSL	WATERPROOF WALL MOUNTED SPOTLIGHT

SWITCHES SYMBOLS

4 GANG	LS	LIGHT SWITCH
MS	MSS	MOTION SENSOR
DNS	DNS	DAY / NIGHT SWITCH - to be positioned out of sight confirm with architect on site
950	HGT	HEIGHT - Measured from FFL to centre line of outlet point, unless otherwise indicated.

POWER SYMBOLS

	P_SPP	SINGLE PLUG POINT
	DPP	DOUBLE PLUG POINT
350	HGT	HEIGHT - Measured from FFL to centre line of outlet point, unless otherwise indicated.
	DISM	MAIN DISTRIBUTION BOARD (RECESSED)

GDM	GARAGE DOOR MOTOR (Remote Controlled)	
FM_PP	FLOOR MOUNTED POWER POINT	
PPM	PRE PAID METER	
PS	POWER SKIRTING	
P_DISS	SUB DISTRIBUTION BOARD	
BAT	ELECTRICITY BATTERY	
DB	DRAW BOX	

ELECTRICAL LEGEND

SECURITY SYMBOLS

	S_INT	INTERCOM
	S_V/ INT	VIDEO INTERCOM
	S_KEY	SECURITY KEYPAD/ DOOR LOCK KEYPAD
	S_PAN	WALL MOUNTED PANIC BUTTON (Only if requested by Client)
	S_SRN	SIREN
	S_CP	DOOR / WINDOW CONTACT POINT
	S_IRD	PASSIVE ALARM INFRARED DETECTOR
	S_IRR	INFRARED REMOTE TRANSCEIVER
	S_IRT	INFRARED BEAM TRANSCEIVER
	S_DNR	DAY/NIGHT RELAY
	SW_VC	VINGCARD REMOTE CONTROLLER
	SW_DR	DOOR RELEASE SWITCH
	S_AKP	ALARM KEYPAD
	S_SSR	SECURITY SYSTEM RADIO

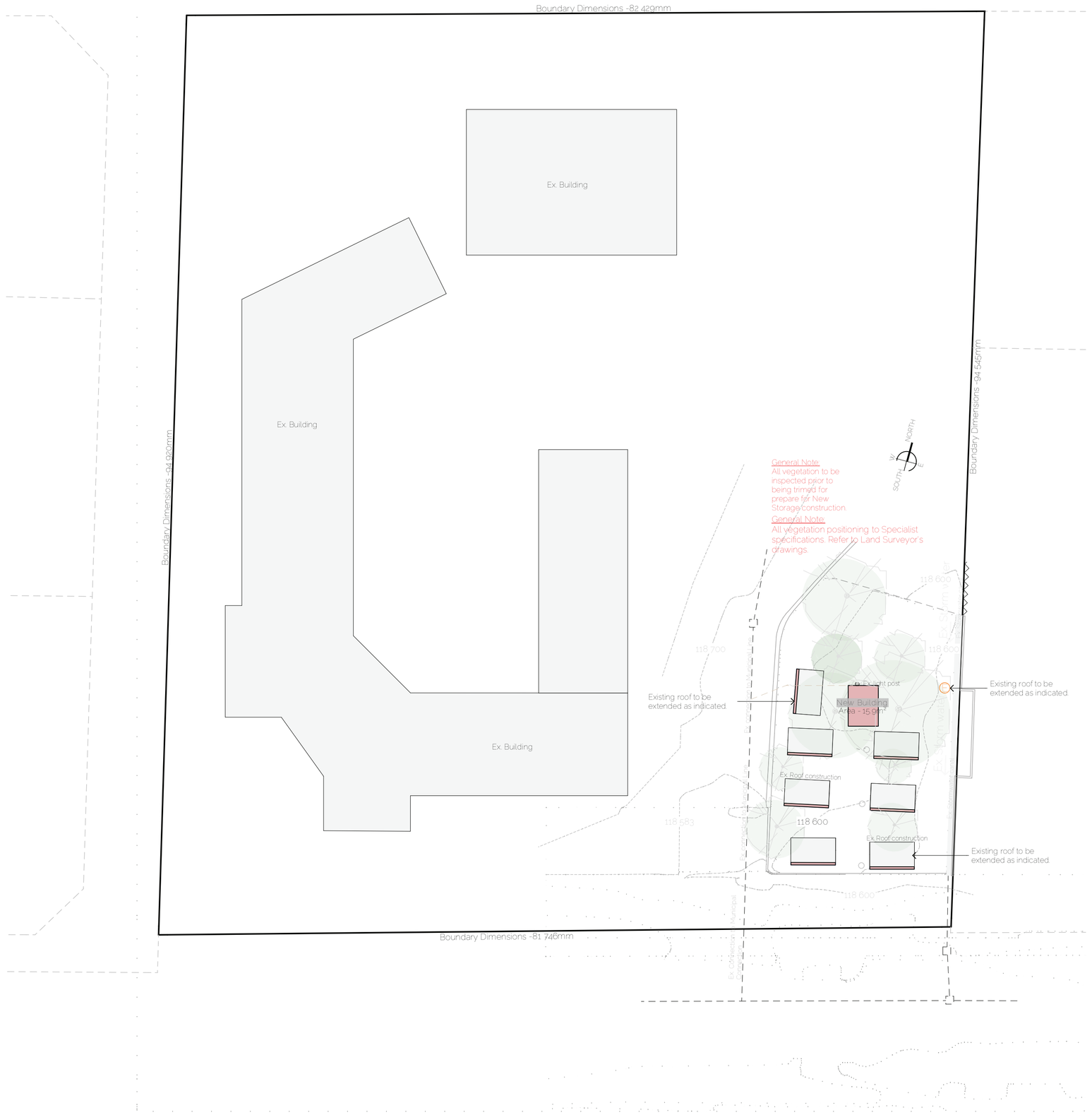
CCTV	S_CCTV	CCTV
1200	S_HGT	HEIGHT - Measured from FFL to centre line of outlet point, unless otherwise indicated.

ANCILLARY SYMBOLS

EF	A_EXF	EXTRACTOR FAN
	A_AC	SPLIT AIR CONDITION UNIT (Outdoor/ Indoor)
	AV_SC	SPEAKER	WALL MOUNTED
	AV_VC	VOLUME CONTROL

WATER RETICULATION SYMBOLS

	W_ASV	AUTOMATIC SHUT-OFF VALVE
	W_BD	BALANCING DEVICE (HOT WATER CONTROL)
DCDP	W_DVB	DOUBLE CHECK VALVE BACKFLOW PREVENTER
	W_FV	FLOAT VALVE
	W_FR	FLOW RESTRICTOR (CONTROLLER)
	W_G	GAUGE (PRESSURE: P, TEMPERATURE: T, LEVEL: L)
	W_GIV	GAUGE WITH ISOLATING VALVE
	W_IVSM	ISOLATING VALVE(SCREWED ENDS) (MANUEL CONTROL)
	W_LP	LAGGED PIPE
	W_MT	MIXER (THERMOSTATICALLY CONTROLLED)
	W_MS	MIXER (SINGLE MANUAL CONTROL)
	W_NRV	NON-RETURN VALVE
	W_D	NORMAL DIRECTION OF FLOW
C	W_C	PIPE CARRYING COLD WATER
H	W_H	PIPE CARRYING HOT WATER
HR	W_HR	PIPE CARRYING HOT WATER RETURN
M	W_M	PIPE CARRYING MIXED TEMPERATURE WATER
P	W_PJN	PIPE JUNCTION
	W_RP	RISER PIPE (PLAN VIEW)
	W_SF	SHOWER (FIXED)
	W_SC	STOPCOCK
SWH	W_SWH	STORAGE WATER HEATER (DOMESTIC TYPE)
TE	W_TE	TAP (EXTERNAL)
TI	W_TI	TAP (INTERNAL)
WM	W_WM	WATERMETER



SITE LAYOUT
Scale 1:350



ROOF LAYOUT
Scale 1:100

MOUNT MORIAH
ARCHITECTURE
PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
SACAP REG NO: APT0076
1ST FLOOR 31 HOOP STREET ROBERTSON 6706

LANGEBERG MUNICIPALITY
TRADING STALLS – Bonnievale

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05
SANS 10400 OCCUPATION

ZONING SCHEME

AREAS

Erf	7785m²
Total New Coverage %	t.b.c%
New Addition	
New Storage	15.9m²
Ex. Buildings	t.b.c
TOTAL COVERED AREA	t.b.c

Note : This Drawing is not valid for construction unless stamped accordingly

CONSTRUCTION DRAWINGS

OWNER
Local Authority
Alterations to Existing Building
Bonnievale
6730



Locality

Project Status Stage 4

Bonnievale_Site and Roof Layout

C.1

Project Number 003| MMA | 22

COUNCIL NOTES

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL AUTHORITY BY-LAWS AND SANS 10400 NATIONAL BUILDING REGULATIONS

GENERAL REQUIREMENTS | SANS 10400 PART A: All planning, Designing and Supervision of erection of the building to be undertaken by a registered professional and is subject to any laws pertaining to the Architectural Profession Act 2000(Act 4 of 2000)

All structural work to be approved and signed off by a professional Engineer in accordance with SANS 10400 part A Section A1 (3)

Building work is only to commence on approval by the relevant Building Control Officer as per SANS 10400 Part A Section A1(5)

All plans to be submitted to Local Authority in accordance with SANS 10400 Part A Section A2 and are to be aligned with SANS 10400 Part A section A5, A6, A7 and A8.

All additional information required by the Local Authority, to be submitted in accordance SANS 10400 Part A Section A13.

All building materials and tests conducted to materials are to be approved by a recognised body, certified by the SANS, and are to satisfy the requirements of building material standards set as per SANS 10400 part A Section A13.

Structural systems of any building are not to be compromised at any stage of construction as per SANS 10400 Part A14(2), any concerns or queries to be directed to Mount Moriah Architecture or Engineer immediately.

All plumbing work to be carried out by an approved plumber in accordance with SANS1400 Part A Section A18

Notice of intention to commence erection or demolition of a building, and notices of inspection are to be submitted to the Local Authority in accordance with SANS 1400 Part A section A22.

Whereby any persons is found to deviate form the approved plans and disregard the application of SANS 10400 shall be subject to any actions taken by the Local Authority of enforcement officer as per SANS 10400 Part A Section A25.

The appointed builder shall be a registered competent builder in accordance with the housing consumers protection act 1998, as per SANS 10400 Part A Section B4

STRUCTURAL DESIGN | SANS 10400 PART B: The structural design is accordance to the requirement parts of H, J, K, L, N of SANS 10400 (SANS 10400 | Part M, Stairways, does not comply to this structure) and also combined with a rational design and assessments by Competent Structural Engineer where indicated. See SANS 10400 Form 1

DIMENSIONS | SANS 10400 PART C: All dimensions of rooms and space on complies with the requirements of SANS 10400 Part-C.

PUBLIC SAFETY | SANS 10400 PART D: Any ramp or driveway shall be so designed that it is safe when used and is fit for the purpose for which it is intended and must comply accordance the requirements of SANS 10400 Part-D. The site is enclosed with a boundary wall higher than the required 1.2m which prohibits any direct access from the street and thus complies to the requirements of the SANS 10400 Part D.

SITE OPERATIONS | SANS 10400 PART F: The sanitary facilities shall at all times be maintained in a clean and hygienic condition and be removed immediately once the building work has been completed.

EXCAVATIONS | SANS 10400 PART G: Excavation on site is less than 3000mm deep and complies with Part G.

FOUNDATIONS | SANS 10400 PART H: A geotechnical investigation has been carried out and is available for use. Foundations to be design and assess by Competent Structural Engineer.

FLOORS | SANS 10400 PART J: Floors in Scullery, kitchen and bathrooms are in accordance with SANS 10400 Part-J. Slabs to be designed and assess by Competent Structural Engineer.

WALLS | SANS 10400 PART K: Any wall provision shall be made to fix roof truss, rafter or beams to ensure that forces of the roof will be transmitted into walls. Walls to be designed and assessed by Competent Structural Engineer. Install brickgrip DPC to all windows and doors cills.

Unless otherwise indicated all new walls and interfaces with existing finishes to have smooth plaster skim and paint finish to Mount Moriah Architecture's detail.

ROOF | SANS 10400 PART L: Gutters and downpipes to be in accordance with SANS 10400 Part R. All roof to be designed and specified by Engineer.

GLAZING | SANS 10400 PART N: All glazing should be secure and durable and shall be fixed to sustain any wind action, will not allow penetration of water to the interior and be apparent, in the case of clear glazing, to any person approaching such glazing. All glazing to be clear unless otherwise specified in Mount Moriah Architecture's details and schedules. Thickness all according to following:
3mm THICK max. Size of 0,75 m²
4mm THICK max. Size of 1,5m²
5mm THICK max. Size of 2,1m²
6mm THICK max. Size of 3,2m²
Glazing in doors to be 6mm laminated safety glass.

Safety glazing to be used where glazing in doors and windows are in excess of 1m², window sills are less than 500mm above finished floor level, glazing directly above a bath/ bath enclosure or shower cubical, surface of a ramp, landing or balcony.

LIGHTING AND VENTILATION | SANS 10400 PART O: Dwelling to have 5% of the floor area natural lighting and 10% of the floor area in respect of other buildings, or 0,2m², whichever is the greater. Every opening in an external wall shall not have less than 5% natural ventilation of the floor area or 0,1m² in respect of category 1 buildings with an occupancy class of E4,F2, H3, H4 or H5 0,2m² in respect of other buildings, whichever is the greater.

DRAINAGE | SANS 10400 PART P: All soil and waste pipes to connect into drainage run, plumber to confirm all drainage points prior to installation. All new drainage runs are to connect to biodegradable septic tank connection. All work to be carried out and supervised by a registered drain layer in accordance with part P of the SANS 10400. A discharge stack of not more than two stories height serving no more than two sanitary groups (combination of not more than one each of a toilet pan, bath, shower and sink and either two wash hand basins or one wash hand basin and one bidet) may discharge into a stub stack. Stack vents connected to the top of discharge pipes shall not be less than 150mm above the flood level of the highest connecting sanitary fixture in the drainage system. Discharge pipes which are enclosed within walls or concrete to have a duct with an access panel for maintenance. A rodding eye or manhole may be omitted where there are no more than two bends of up to 90°, at each change in direction the bend does not exceed 45° and bends have a centre-line radius of not less than 600mm. A rodding eye or manhole shall be installed with 1.5m of the connection of the drain to the connecting sewer, as well as at the highest point of the drain and at such intervals of 25m measured from a rodding eye along the line of the drain. All drainage under slabs to be incased in minimum 100mm concrete and be laid without change in gradient or direction, with access at each point of entry or exit from the building. A waste pipe which discharges into a gully shall discharge above the surface of the water seal and not more than 100mm above the grating.

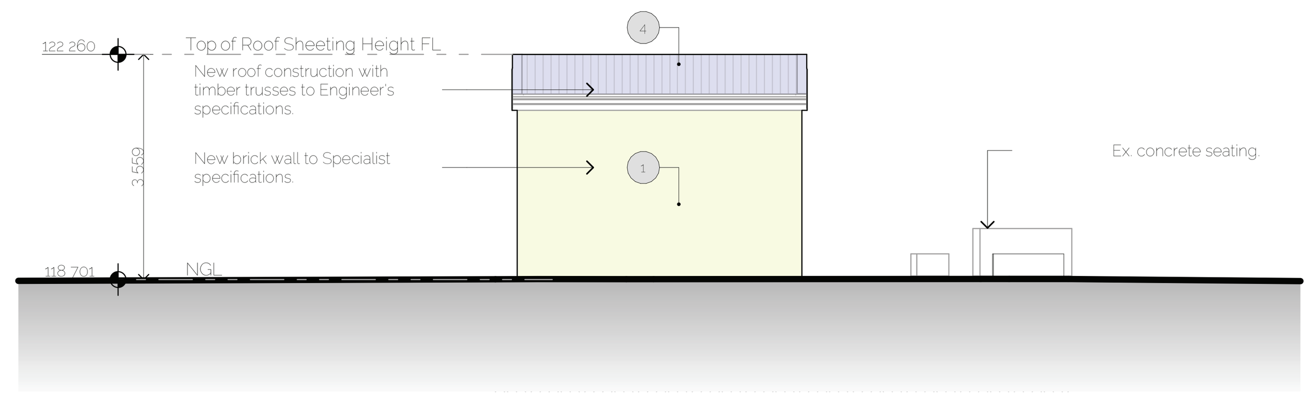
STORMWATER | SABS 0400 PART R: All stormwater from hard surfaces as well as from downpipes from roofs are to connect to stormwater system to deviate rain water along away from the building. Backwash from swimming Pool to existing dam.

ENERGY USAGE | SANS 10400 PART XA: The dwelling is powered natural resources. Thus make it 100% emission free from energy. Heat gain through the fenestration will be regulated and handled through natural air flow and heated and cooled by solar powered sources.

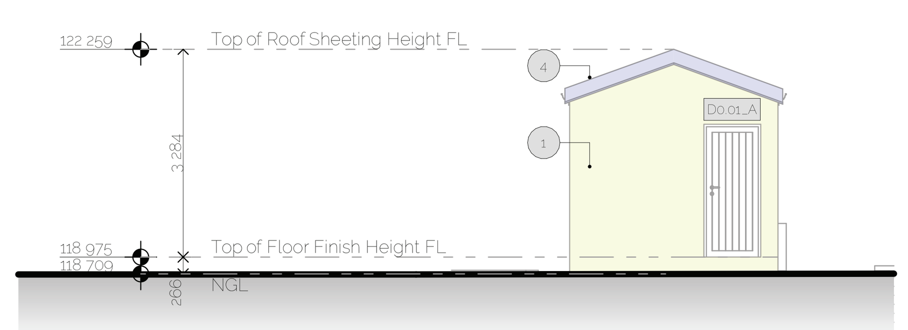
Thus complies the fenestration through using 100% natural resources for heating and cooling heat gain. Perimeter Insulation board in foundations with R Value of at least 1. All roofs complies with R-Value with 135mm isotherm insulation. All exposed warm water pipes to be insulated with cover with a R-Value of at least 1. Gas geysers to be installed.



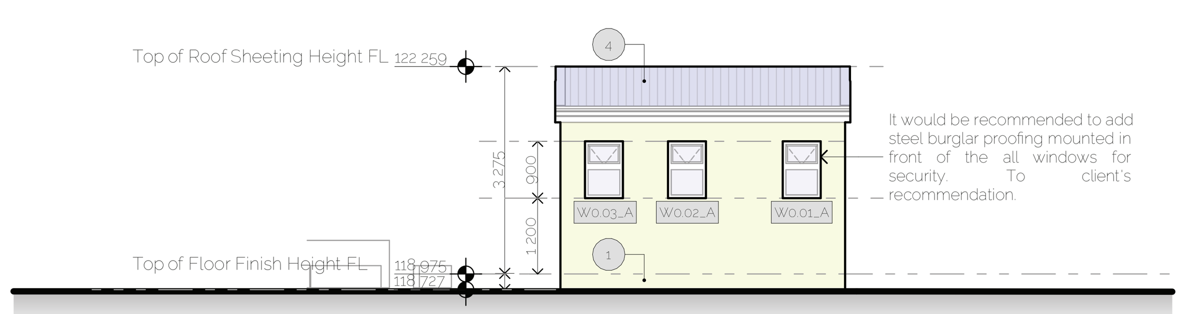
GROUND STOREY LAYOUT
Scale 1:100



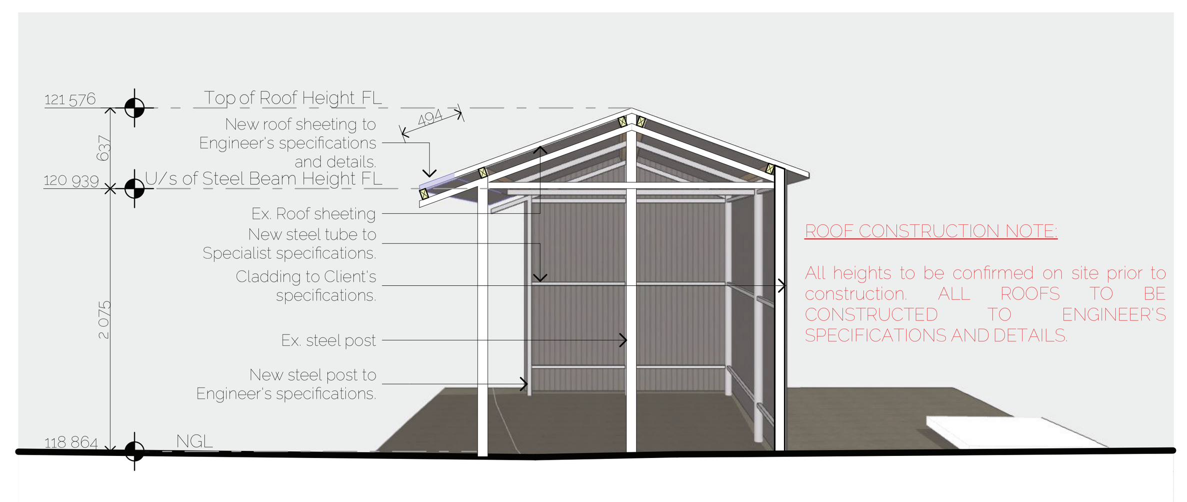
EAST ELEVATION
Scale 1:100



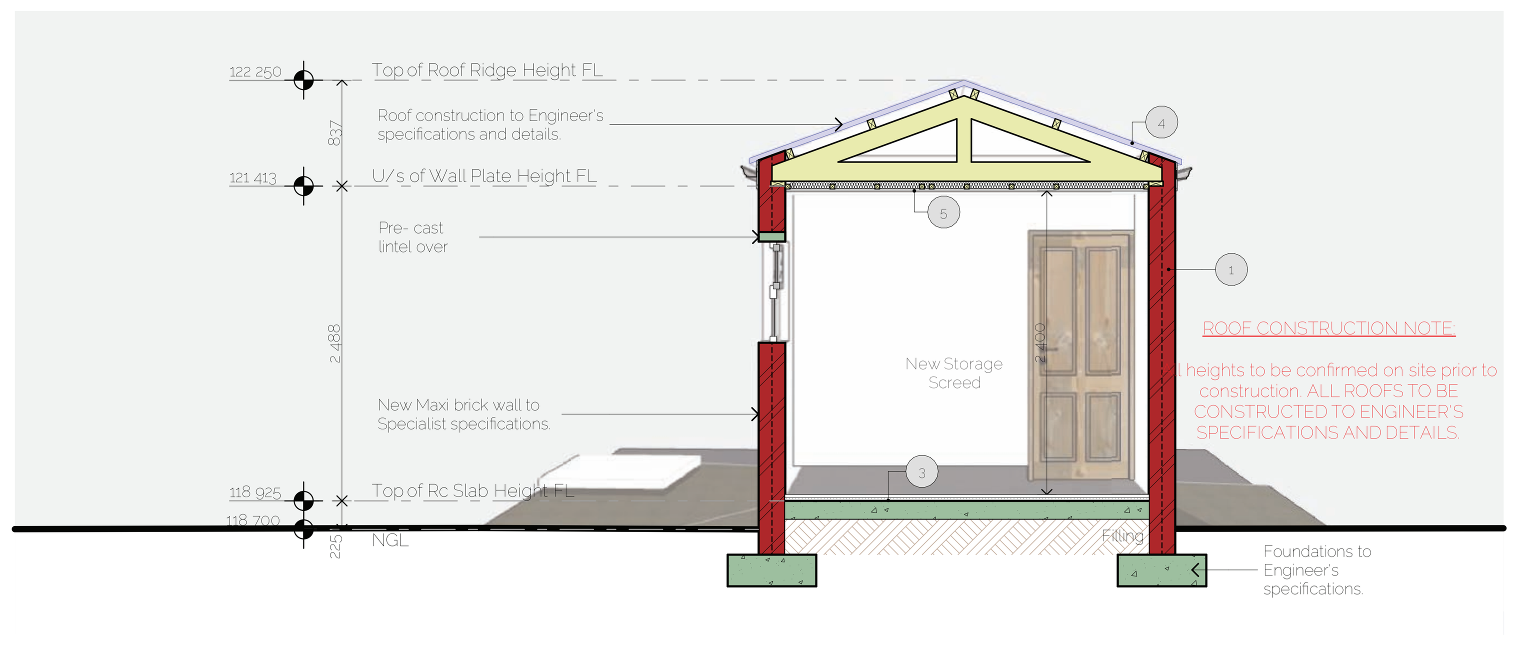
SOUTH ELEVATION
Scale 1:100



WEST ELEVATION
Scale 1:100



SECTION A-A
Scale 1:50



SECTION B-B
Scale 1:50

DRAWING NOTES - BONNIEVALE

1. 210mm Maxi Brick wall collar jointed. Exterior and interior to be plastered and painted. Exterior to be plastered and painted to at least 2 brick layers beneath NGL where applicable. Paint colour to client's specifications.
2. 120mm Maxi Brick wall collar jointed. Exterior and Interior plastered and painted to at least 2 brick layers beneath NGL on exterior side where applicable. Paint colour to client's specifications.
3. 30mm screed on 100mm RC slab 25MPa. RC Slab panel dimensions to max. @ 2500mm. 5,6mm Diameter bars at centres of 200mm in both directions on, 250micron Damp Proof Membrane on 50mm Crusher-Dust on hard core filling, mechanicaly compacted to a density of 95Mod. Aashto in layers of not more than 150mm. All details to Engineer's specifications.
4. Klip- lok roofsheeting, colour to as by client specifications on, sisalation membrane on, 76x50mm SA Pine Purlins @ max 1100mm centres on, 152 x50mm Gr.7 SA Pine planed and treated Trusses to max. 1000mm centres. Trusses to be fixed with galvanized hoop irons on 114x38mm SA Pine wallplate. Hoop irons to be at least 600mm into brick work. All details and specifications to Engineer's drawings.
5. 38x38mm SA Pine battens between rafters @ max 400mm centres. Fixed 9mm Gypsum ceiling board against battens. Install 130mm Insulation blanket in ceiling void.

BONNIEVALE - DOOR AND WINDOW TABLE

GROUND STOREY | DOORS

NUMBER	LOCATION	SIZE	TYPE
D0.01_A	0.01_New Storage	900W x 2100H	Timber
D0.02_A	0.02_New WC	900W x 2100H	Timber

GROUND STOREY | WINDOWS

NUMBER	LOCATION	SIZE	TYPE
W0.01_A	0.01_New Storage	600W x 800H	Aluminium
W0.02_A	0.01_New Storage	600W x 800H	Aluminium
W0.03_A	0.02_New WC	600W x 800H	Aluminium



RENDER 1
N.T.S



RENDER 2
N.T.S



RENDER 3
N.T.S

MOUNT MORIAH
ARCHITECTURE
PROFESSIONAL ARCHITECTURAL TECHNOLOGIST
SACAP REG: PAT 26698884
1ST FLOOR 31 HOOP STREET ROBERTSON 6705

LANGEBERG MUNICIPALITY
TRADING STALLS - Bonnievale

REVISIONS

Rev.	Description
STAGE 4	
Rev.0	Detailed Documentation

Issued 2022/05/05
SANS 10400 OCCUPATION

ZONING SCHEME

AREAS

Erf	7785m²
Total New Coverage %	t.b.c%
New Addition	
New Storage	15.9m²
Ex. Buildings	t.b.c
TOTAL COVERED AREA	t.b.c

Note: This Drawing is not valid for construction unless stamped accordingly

CONSTRUCTION DRAWINGS

OWNER
Local Authority
Alterations to Existing Building
Bonnievale
6730



Locality

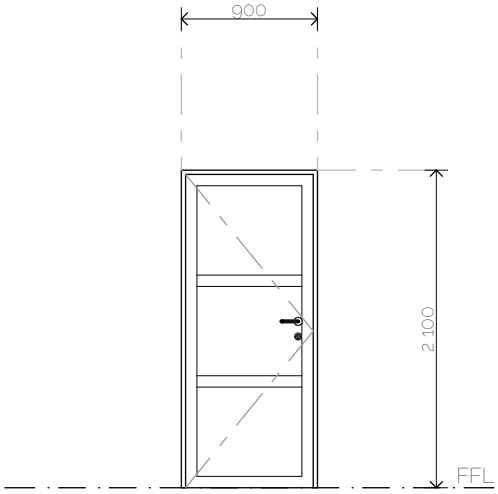
Project Status Stage 4

Bonnievale_Ground Storey Layout

C.2

Project Number 003| MMA | 22

MONTAGU_D0.01_A



LOCATION	0.01_New Disable Toilet	QUANTITY	1
DOOR No	D0.01_A		

FRAME/DOOR
FRAME: STEEL door frame or similar to Mount Moriah Architecture's approval.
DOOR: STEEL Hinge Door with self- closing mechanism to Mount Moriah's Approval. Dimensions to be confirmed on site.

IRONMONGERY
GEAR - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

LOCK - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

HANDLE - Self- closing mechanism to client and Mount Moriah Architecture's approved sample. Colour TBC

GLASS
Na

FINISH
To client and Mount Moriah Architecture's approved sample. Colour TBC

GENERAL
All doors and windows are viewed from the outside. Exact sizes of all openings are to be confirmed on site before manufacturing commences. Where ever possible manufacturer is to advise Mount Moriah Architecture with regards to better fabrication and detailing. This drawing is to be read in conjunction with the detail drawings where noted, and with all respective schedules. ALUMINIUM: Specialist to supply Mount Moriah Architecture with various section sizes, grips and handles for sections and approval. GLAZING: All butt joints in glazing to have clear structural silicon as per specialist recommendations. But jointed corners or frameless glass should be factory pre polished with fine sand method

0

GENERAL NOTES
All relevant details, levels, dimensions, setting out positions are to be checked prior to any work commencing, details take precedent over working drawings, any discrepancies are to be brought to the attention of the Mount Moriah Architecture. **Drawings are to read in conjunction with Engineer's drawings. Contractor to keep full set of drawings on site.** Contractor and Engineer to verify all levels and dimensions on site and check same against Mount Moriah Architecture's drawings before commencing work. Mount Moriah Architecture accepts no responisibiilty for errors resulting from misinterpretation of the drawings.

Rev.	Description	Date

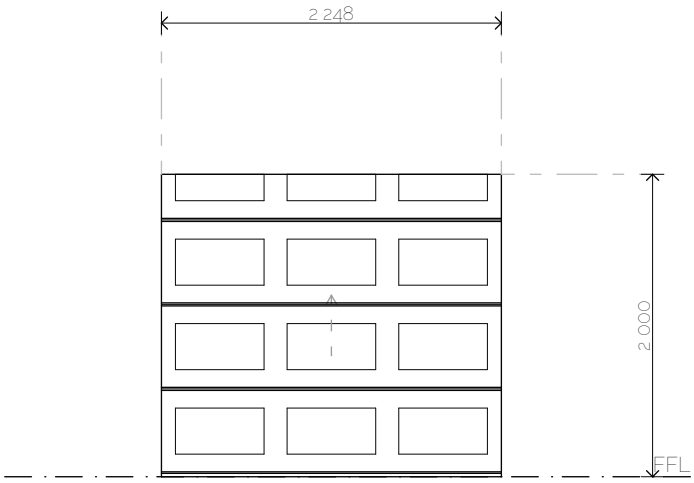
LANGEBERG MUNICIPALITY

Langeberg , CCD;, Western Cape

Door Schedule_Page 1	DRAWING NUMBER	SCALE	PG SIZE	REVISION	
PROJECT STATUS : Stage 4	003 | 22|MON		A4	0	
		DRAWN	CHECKED	DATE	
		LD	LD	2022/05/05	

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SACAP REGISTRATION NR. PAT26658884 SOLE PRACTITIONER
(082) 410 7463 studio@mountmoriah.co.za

MONTAGU_D0.02_B



LOCATION	Stalls 1-16	QUANTITY	16
DOOR No	D0.02_B;D0.03_B;D0.04_B;D0.05_B;D0.06_B;D0.07_B;D0.08_B D0.09_B;D0.10_B;D0.11_B;D0.12_B;D0.13_B;D0.14_B;D0.15_B;D0.16_B;D0.17_B;		

FRAME/DOOR
FRAME: ALUMINIUM door frame or similar to Mount Moriah Architecture's approval.
DOOR: ALUMINIUM Garage Door to Mount Moriah's Approval. Dimensions to be confirmed on site.

IRONMONGERY
GEAR - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

LOCK - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

HANDLE - Self- closing mechanism to client and Mount Moriah Architecture's approved sample. Colour TBC

GLASS
Na

FINISH
To client and Mount Moriah Architecture's approved sample. Colour TBC

GENERAL
All doors and windows are viewed from the outside. Exact sizes of all openings are to be confirmed on site before manufacturing commences. Where ever possible manufacturer is to advise Mount Moriah Architecture with regards to better fabrication and detailing. This drawing is to be read in conjunction with the detail drawings where noted, and with all respective schedules. ALUMINIUM: Specialist to supply Mount Moriah Architecture with various section sizes, grips and handles for sections and approval. GLAZING: All butt joints in glazing to have clear structural silicon as per specialist recommendations. But jointed corners or frameless glass should be factory pre polished with fine sand method

0

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Rev.	Description	Date

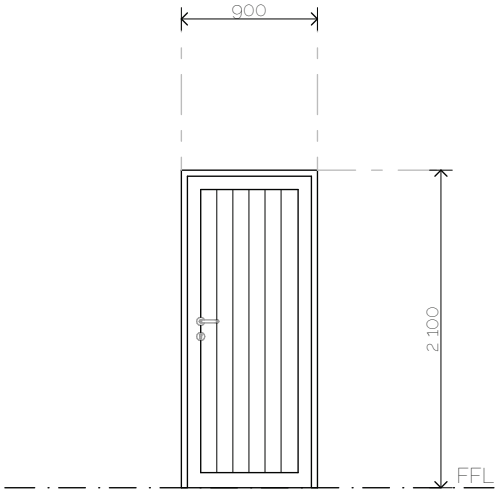
LANGEBERG MUNICIPALITY

Langeberg , CCD;, Western Cape

Door Schedule_Page 2	DRAWING NUMBER	SCALE	PG SIZE	REVISION
	003 | 22|MON		A4	0
PROJECT STATUS : Stage 4		DRAWN	CHECKED	DATE
		LD	LD	2022/05/05

1st FLOOR 31 HOPE STREET P.O.BOX 45 ROBERTSON 6705
SACAP REGISTRATION NR. PAT26658884 SOLE PRACTITIONER
(082) 410 7463 studio@mountmoriah.co.za

BONNIEVALE_D0.01_A; D0.02_A



LOCATION	0.01_New Storage; 0.02_New WC	QUANTITY	1
DOOR No	D0.01_A; D0.02_A		

FRAME/DOOR
FRAME: SWARTLAND TIMBER door frame or similar to Mount Moriah Architecture's approval.
DOOR: SWARTLAND TIMBER (CODE: SD2/OB/BR) Hinge Door with self- closing mechanism to Mount Moriah's Approval. Dimensions to be confirmed on site.

IRONMONGERY
GEAR - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

LOCK - To manufacturer's recommendations and Mount Moriah Architecture's approved sample.

HANDLE - Self- closing mechanism to client and Mount Moriah Architecture's approved sample. Colour TBC

GLASS
Na

FINISH
To client and Mount Moriah Architecture's approved sample. Colour TBC

GENERAL
All doors and windows are viewed from the outside. Exact sizes of all openings are to be confirmed on site before manufacturing commences. Where ever possible manufacturer is to advise Mount Moriah Architecture with regards to better fabrication and detailing. This drawing is to be read in conjunction with the detail drawings where noted, and with all respective schedules. ALUMINIUM: Specialist to supply Mount Moriah Architecture with various section sizes, grips and handles for sections and approval. GLAZING: All butt joints in glazing to have clear structural silicon as per specialist recommendations. But jointed corners or frameless glass should be factory pre polished with fine sand method

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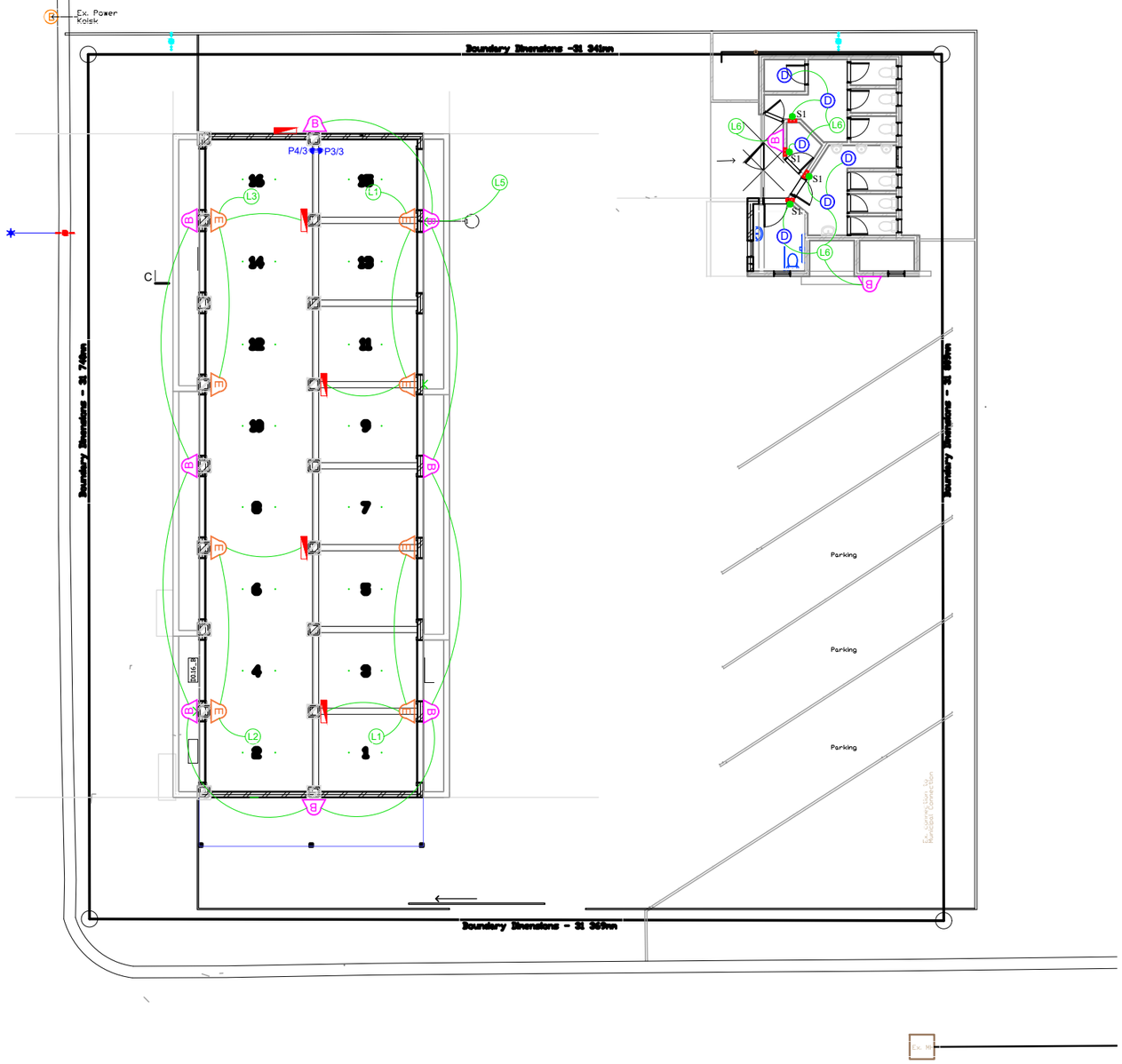
Rev.	Description	Date

LANGEBERG MUNICIPALITY

Langeberg , CCD;, Western Cape

Door Schedule_Page 1	DRAWING NUMBER	SCALE	PG SIZE	REVISION
	003 | 22|BON		A4	0
PROJECT STATUS : Stage 4		DRAWN	CHECKED	DATE
		LD	LD	2022/05/05

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TYPE B - BEKA SERIES 30; 13W; 4000K; BLACK



TYPE D - 14W LED BULB IN BALL CEILING FITTING



TYPE E - SQUARE BULKHEAD WITH LED BULB

MONTAGU - SMALL POWER & LIGHTING

GENERAL NOTES:

- 250V 16A 4x4 RSA/EU SWITCHED SOCKET OUTLET; WHITE; SURFACE MOUNTED IN WEATHERPROOF BOX; 2000mm AFFL OR AS INDICATED
- TYPE B - BEKA SERIES 30 13W; 4000K; BLACK; HELICOIL; MOUNTED @ 2000mm AFFL
- TYPE D - 14W LED BULB IN BALL CEILING FITTING
- TYPE E - SQUARE BULKHEAD WITH LED BULB; MOUNTED @ 2000mm AFFL
- S1 - SINGLE LEVER ONE WAY LIGHT SWITCH @1200mm AFFL OR AS INDICATED

NOTE:
NEW ELECTRICAL KIOSK TO CONTAIN CIRCUITRY AS DESCRIBED BY TYPICAL SINGLE LINE DIAGRAM AS WELL AS 2 SWITCHED SOCKET OUTLETS AND A SINGLE LEVER LIGHT SWITCH

DRAWING ISSUE:	08/04/2022		
PRELIMINARY		**TENDERS**	■
APPROVAL		**CONSTRUCTION**	
COORDINATION		**AS BUILT**	

ELECTRICAL DESIGN: M. VAN BOSCH
CAD OPERATOR/DESIGN: F.ENSLIN
APPROVED ENGINEER: D. MULLER PR. ENG
APPROVED CLIENT:

AMENDMENTS:

DATE:	NO:	DESCRIPTION:	APPROVED:

DM CONSULTING ENGINEERS www.dmce.co.za

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ECSA

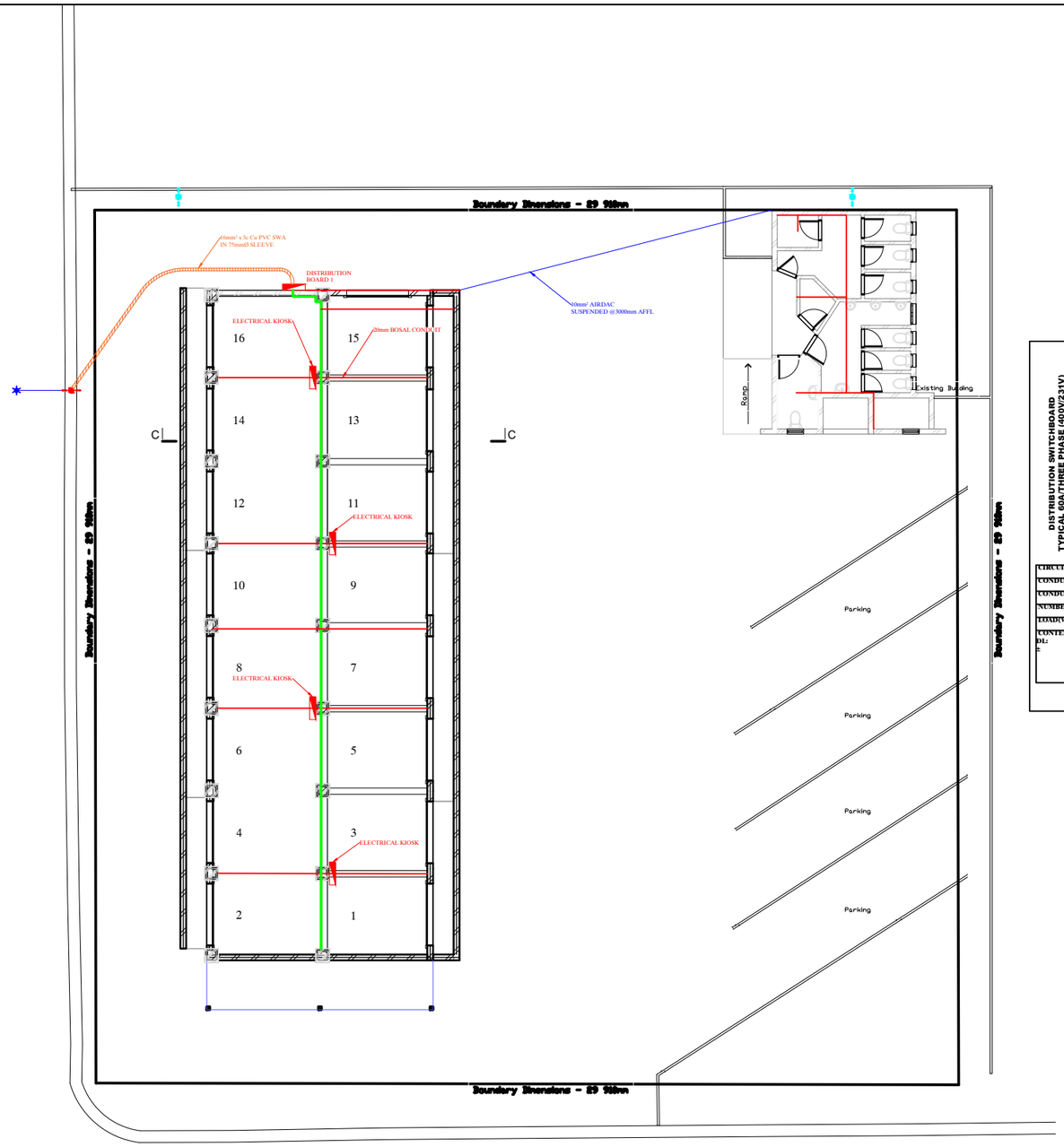
CLIENT:

PROJECT:
LANGEBERG MUNICIPALITY
TRADING STALLS

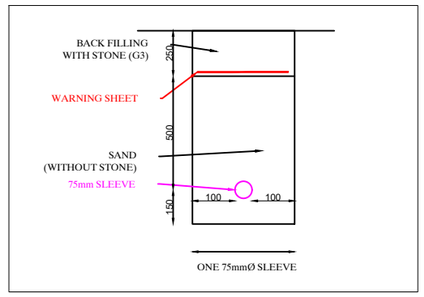
NORTH:

FULL DESCRIPTION OF DRAWING:
ELECTRICAL ENGINEERING SERVICES:
MONTAGU - SMALL POWER & LIGHTING

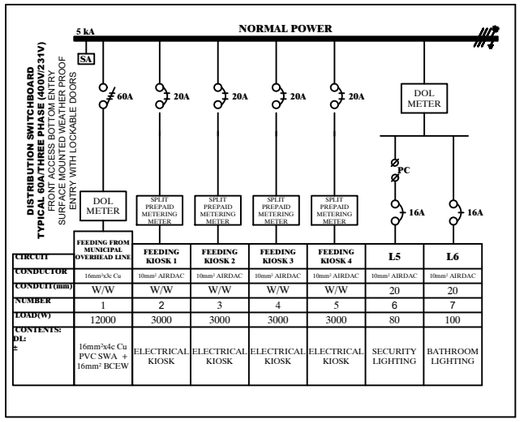
ARCHITECTS NO: 003/MMA/22/REV0	**DATE:** 08/04/2022
SCALE: 1:200 (A3); 1:100 (A1)	**SITE:** MONTAGU-ERF 403
DRAWING NO: 22C069-E21	**REV:** 0



MONTAGU - LV RETICULATION

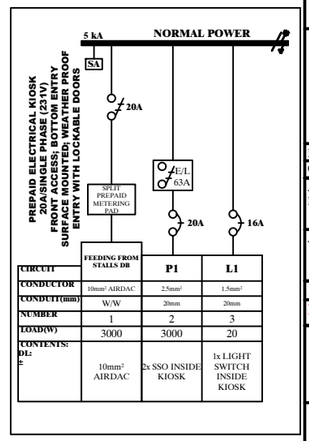


TRENCH DETAIL



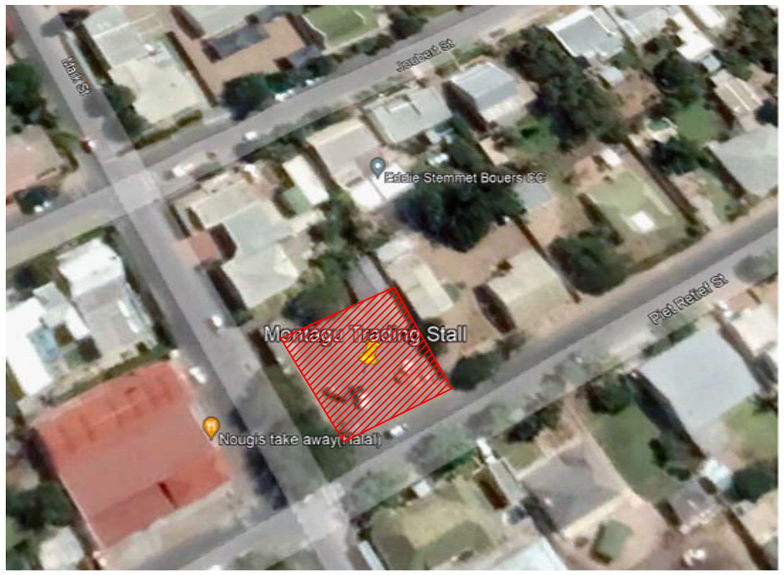
CIRCUIT	FEEDING FROM MUNICIPAL OVERHEAD LINE	FEEDING KIOSK 1	FEEDING KIOSK 2	FEEDING KIOSK 3	FEEDING KIOSK 4	L5	L6
CONDUCTOR	16mm²3/c Cu	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC	10mm² AIRDAC
CONDUIT (mm)	W/W	W/W	W/W	W/W	W/W	20	20
NUMBER	1	2	3	4	5	6	7
LOAD(W)	12000	3000	3000	3000	3000	80	100
CONTENTS: DL: L:	16mm²3x4c Cu PVC SWA + 16mm² BCEW	ELECTRICAL KIOSK	ELECTRICAL KIOSK	ELECTRICAL KIOSK	ELECTRICAL KIOSK	SECURITY LIGHTING	BATHROOM LIGHTING

STALLS DISTRIBUTION BOARD



CIRCUIT	FEEDING FROM STALLS DB	P1	L1
CONDUCTOR	10mm² AIRDAC	2.5mm²	1.5mm²
CONDUIT (mm)	W/W	20mm	20mm
NUMBER	1	2	3
LOAD(W)	3000	3000	20
CONTENTS: DL: L:	10mm² AIRDAC	2x SSO INSIDE KIOSK	1x LIGHT SWITCH INSIDE KIOSK

TYPICAL ELECTRICAL KIOSK



LOCALITY PLAN
N.T.S

GENERAL NOTES:

- 16mm² x 3c Cu PVC SWA CABLE IN 75mmØ KABELFLEX SLEEVE @ 750mm BELOW FFL
- 20mm BOSAL CONDUIT
- 10mm² AIRDAC SUSPENDED @3000mm AFFL
- DISTRIBUTION SWITCHBOARD

NOTE:
NEW ELECTRICAL KIOSK TO CONTAIN CIRCUITRY AS DESCRIBED BY TYPICAL SINGLE LINE DIAGRAM AS WELL AS 2 SWITCHED SOCKET OUTLETS AND A SINGLE LEVER LIGHT SWITCH

DRAWING ISSUE:	08/04/2022		
PRELIMINARY		TENDERS	■
APPROVAL		CONSTRUCTION	
COORDINATION		AS BUILT	

ELECTRICAL DESIGN: CP LABUSCHAGNE B. ENG
CAD OPERATOR/DESIGN: F.ENSLIN
APPROVED ENGINEER: D. MULLER PR. ENG
APPROVED CLIENT:

AMENDMENTS:

DATE:	NO:	DESCRIPTION:	APPROVED:

DM CONSULTING ENGINEERS www.dmce.co.za

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ECSA

CLIENT:

PROJECT:
LANGEBERG MUNICIPALITY
TRADING STALLS

NORTH:

FULL DESCRIPTION OF DRAWING:
ELECTRICAL ENGINEERING SERVICES:
MONTAGU - LV RETICULATION

ARCHITECTS NO:	DATE:
003/MMA/22/REV0	08/04/2022
SCALE:	**SITE:**
1:200 (A3); 1:100 (A1)	MONTAGU-ERF 403
DRAWING NO:	**REV:**
22C069-E20	0





TYPE A - BEKA RAY 70W HPS; 4000K; STANDARD GREY



TYPE B - BEKA SERIES 30; 13W; 4000K; BLACK



TYPE D - 14W LED BULB IN BALL CEILING FITTING



TYPE E - SQUARE BULKHEAD WITH LED BULB

BONNIEVALE - LIGHTING LAYOUT

GENERAL NOTES:

- TYPE A - BEKA RAY 70W HPS; 4000K; STANDARD GREY
- TYPE B - BEKA SERIES 30 13W; 4000K; BLACK; HELICOIL; MOUNTED @2000mm AFFL
- TYPE B - BEKA SERIES 30 13W; 4000K; BLACK; HELICOIL; CEILING MOUNTED
- TYPE C - BEKA OMNISTAR MINI 103W; 4000K; 1440 OPTIC; ALUMINIUM FINISH; GLASS PROTECTED; STIRRUP MOUNTED
- TYPE D - 14W LED BULB IN BALL CEILING FITTING
- TYPE E - SQUARE BULKHEAD WITH LED BULB; MOUNTED @ 2000mm AFFL
- ELECTRICAL KIOSK
- 250V 16A 4x4 RSA/EU SWITCHED SOCKET OUTLET @350mm AFFL OR AS INDICATED

NOTE: TYPE A POST TOP LUMINAIRE TO REPLACE EXISTING POST TOP LUMINAIRES

NOTE: NEW ELECTRICAL KIOSKS TO CONTAIN CIRCUITRY AS DESCRIBED BY TYPICAL SINGLE LINE DIAGRAM AS WELL AS 1 SWITCHED SOCKET OUTLETS AND A SINGLE LEVER LIGHT SWITCH

DRAWING ISSUE:	07/04/2022		
PRELIMINARY		**TENDERS**	■
APPROVAL		**CONSTRUCTION**	
COORDINATION		**AS BUILT**	

ELECTRICAL DESIGN: CP LABUSCHAGNE B. ENG
CAD OPERATOR/DESIGN: F.ENSLIN
APPROVED ENGINEER: D. MULLER PR. ENG
APPROVED CLIENT:

AMENDMENTS:

DATE:	NO:	DESCRIPTION:	APPROVED:

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ECSA

CLIENT:

PROJECT:
LANGEBERG MUNICIPALITY
TRADING STALLS

NORTH:

FULL DESCRIPTION OF DRAWING:
ELECTRICAL ENGINEERING SERVICES:
BONNIEVALE - LIGHTING LAYOUT

ARCHITECTS NO: 003/MMA/22/REV0	**DATE:** 07/04/2022
SCALE: 1:200 (A3); 1:100 (A1)	**SITE:** BONNIEVALE
DRAWING NO: 22C069-E11	**REV:** 0